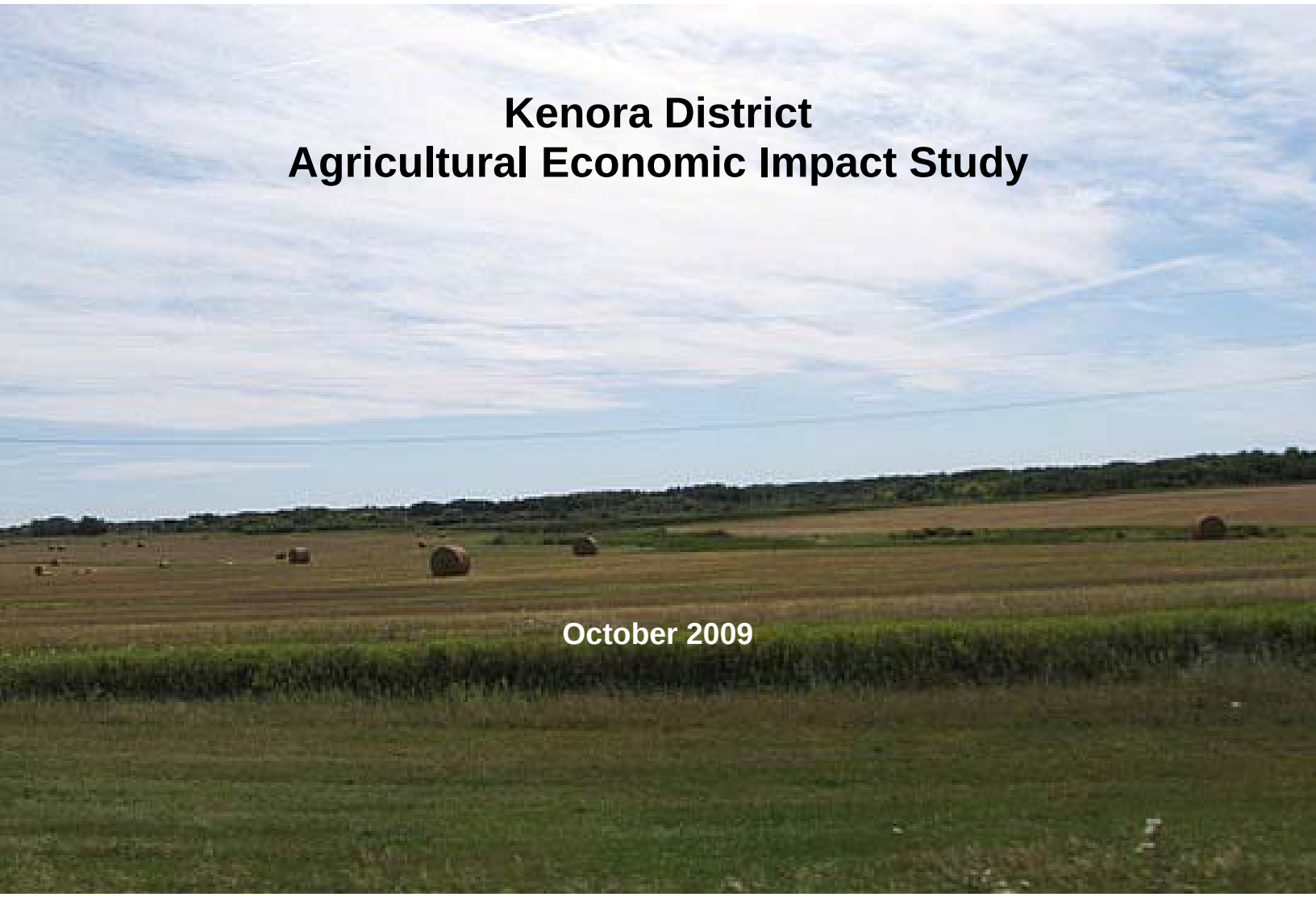
Kenora District
Agricultural Economic Impact Study



October 2009

Canada FedNor Ontario

Food Security Research Network
in and for the North

Northwestern Ontario Development Network

Kenora District
Federation of Agriculture

Kenora District
Agricultural Economic Impact Study

October 2009

Funded by:

FedNor
Ontario Ministry of Agriculture, Food and Rural Affairs
Northwestern Ontario Development Network
Kenora District Federation of Agriculture
Food Security Research Network

Supported by:

Ontario Federation of Agriculture

Prepared by:

HCA
Harry Cummings and Associates Inc.
96 Kathleen Street, Guelph Ontario. N1H 4Y3
Phone: (519) 823-1647 / Fax: (519) 821-0202
URL: www.hcaconsulting.ca
Email: hca@web.ca

Executive Summary

The purpose of this report is to provide a profile of agriculture in Kenora 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 northwestern Ontario, and a focus group with primary producers and other agri-sector stakeholders from Kenora District. The study was completed as part of a larger collaborative partnership between stakeholder groups in Thunder Bay District, Rainy River District, Kenora District and Cochrane District. Separate reports were prepared for each of the four Districts. The focus of this report is on Kenora District.

Agricultural activity in Kenora District is concentrated in the southern portion of the District which features soils that are fair to moderately high in productivity with some limitations on the range of crops that can be grown. With good soil and crop management practices a variety of field crops can be grown in the District including barley, wheat, oats, corn, soybeans, potatoes, alfalfa, and other hay crops. Local soil and climate conditions also allow for a variety of vegetable production and some limited fruit production.

The agriculture sector in Kenora District currently supports about 100 on-farm jobs. Although the Census data reveals that the number of farm jobs in the District declined by about 100 jobs between 2001 and 2006, it is important to recognize that on-farm labour activity may be underreported as a result of the increased reliance on off-farm employment. Indeed, the proportion of farmers working off the farm in Kenora District increased from 45% to 58% between 1995 and 2005. Producers often link the need for a second income to a combination of factors including stagnate or shrinking commodity prices and rising production costs. The increase in off-farm work is also having a negative effect on the amount of time that farm leaders are able to volunteer for organizations and activities that have traditionally helped to promote agriculture in the region.

It is important to emphasize that the decline in agriculture employment does not reflect trends in farm productivity in the region. Agriculture in Kenora 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 access to a large regional market (northwestern Ontario).

Kenora District reported about 36,000 acres of farmland and 92 farms in 2006 which collectively generated about $5.5 million in farm gate sales in 2005. The average net revenue per farm in Kenora District amounts to almost $9,000 which is just below the average for northern Ontario ($11,000). The average farm size in Kenora District is 393 acres which is close to the average for northern Ontario (412 acres) but substantially larger than the provincial average (233 acres).

In 2006, almost 40% of the total farmland base in Kenora District was reported in crop production. Historically, the District reported a much larger area of farmland in crop production which suggests there are opportunities for further expansion of crop production in the District. The area reported in crop production in the District amounted to 17,660 acres in 1961 which dropped off to 11,546 acres by 1996 but has since started to rebound over the last decade to reach 13,777 in 2006. Additionally, based on projections from climate change models, the growing season in the southern portion of Kenora District is expected to gradually increase over the next 100 years which will result in further crop production opportunities for the region.

Kenora District farms are also involved in variety of livestock production including beef, dairy, sheep, goats, and pigs as well as farm raised bison, deer/elk and llama/alpaca. Similar to other regions of northern Ontario, Kenora District has also experienced an increase in the number of horses over the last 10 years.

Agriculture in Kenora 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 Emo Agricultural Research Station;
- the New Liskeard Agricultural Research Station;
- the Thunder Bay Agricultural Research Station;
- the Kenora District Federation of Agriculture;
- the Kenora District Soil and Crop Improvement Association; and
- individual farmers and commodity groups that have developed innovative farm practices.

Research initiatives undertaken by the organizations noted above and by individual farmers and First Nation communities indicate that northwestern Ontario is a source of agri-food innovation. Organizations such as the Food Security Research Network (based out of Thunder Bay) and others including the Dryden Community Garden have been particularly active in identifying and acting on food security issues and options in northwestern Ontario.

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 Kenora 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.

Value added farm activities are increasing in the region. 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 see the potential growth for a variety of local value added products including specialty meat products and specialized production of 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 storage facilities) and the government regulations that surround the establishment and operation of some facilities can be costly and complex.

1. ***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.***

Kenora District features a variety of agricultural sectors (e.g. dairy, beef, sheep, horse, poultry, field crop, greenhouse, etc.) and the size of the farm operations within these sectors varies. Producers in northwestern Ontario are showing a greater interest in small scale farming as one approach to responding to the growing consumer interest in local food options.

Locally based research has played a key role in contributing to the development of improved crop management practices and higher performing crop species for the region. Locally based research initiatives have also helped to facilitate the development of value added activities and increase the awareness and availability of locally produced foods in the region.

2. ***It is recommended that local and regional research and educational institutions (e.g. Emo Agricultural Research Station, Thunder Bay Agricultural Research Station, Confederation College, Lakehead University) continue to develop and implement research initiatives and courses/programs (including distant education programs where appropriate) that are responsive to the different farm types that characterize northwestern Ontario.***

The growth in emerging sectors such as organic production and non-timber forest products is not well understood. Although it appears that the number of farms engaged in organic production in northwestern Ontario is increasing, there is no data on the area or quantity of production. Additionally, there is very limited information on the type and quantity of non-timber forest products being harvested in northwestern Ontario.[1]

3. ***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.***

A common concern expressed by agri-sector stakeholders in northwestern Ontario is that government polices and programs are typically based on models of agri-food production that feature larger scale operations and southern Ontario market realities. Agri-sector stakeholders in northwestern Ontario also emphasized the challenges that interprovincial trade barriers place on the movement of agri-food products between Ontario and Manitoba. More focus is needed on developing polices and programs that address the needs/challenges of farms operating in the more localized economies that characterize northwestern Ontario.

4. ***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 polices and programs for the region including interprovincial trade regulations.***

[1] 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).

5. ***It is recommended that local/regional land use policies be reviewed and modified where appropriate to ensure that policies allow for the continued development of a variety of farm type operations.***

Agri-sector stakeholders in northwestern Ontario including producers, research institutions, and agri-related businesses believe it is important to continue 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.).

6. ***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.***

7. ***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.***

Agri-sector stakeholders in Kenora District believe the Cloverbelt Country Farmers' Market concept needs to be expanded to enhance access for consumers in the City of Dryden.

8. ***It is recommended that the City of Dryden and local agri-sector stakeholders establish a weekly central retail market to complement the market in Oxdrift.***

Many businesses in northwestern 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. Manitoba, United States). 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 Kenora District 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.***

This report also recognizes and supports the action plans for the agriculture sector as outlined in the Economic Development Strategy and Implementation Plan for the City of Dryden (McSweeney and Associates. 2008).[2] In summary the action plans call for:

- collaboration between the government and agri-sector stakeholders to develop a weekly farmers' market in Dryden;
- promoting the competitive advantages of agriculture and agriculture development in the region to attract a new generation of producers, agri-food investments and possibly a university research station;
- collaboration between producers and the DDC Energy committee on projects leading to the commercialization and production of industrial bioproducts linked to biomass feedstock;
- collaboration between municipalities across Kenora District and with First Nation communities in various activities to promote the development of the agri-food sector; and
- collaboration between agri-sector stakeholders and the DDC Energy committee to plan and develop greenhouses near existing infrastructure for the production of fresh produce as well as use in tourism/recreation activities.

[2] Complete details on the action plans from the Strategy as related to the agriculture sector are presented in Appendix C.

Acknowledgements

The preparation of this report was made possible through the guidance and support provided by a number of different organizations including:

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

A special thank you goes to the farmers and business stakeholders that participated in the focus group and agri-related business survey.

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 Kenora District.

Harry Cummings and Associates
October 2009

Table of Contents

List of Tables, Figures and Maps

1.0 Introduction

Agriculture is an important industry in northwestern 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 northwestern 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 northwestern Ontario. 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 northwestern 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 northwestern 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 northwestern Ontario with a special focus on Kenora 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 Kenora 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 Kenora 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 Kenora 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 northwestern Ontario which is comprised of three Districts: Thunder Bay, Kenora and Rainy River. The Study Area also includes Cochrane District which partially borders the eastern boundary of northwestern Ontario.[3]

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.[4]

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.

---

[3] 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.

[4] 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 km2 which constitutes about 87% of the land area of Ontario (Map 1.1).[5] The three westernmost districts in northern Ontario (Thunder Bay, Kenora and Rainy River) constitute northwestern Ontario and the remaining districts constitute northeastern Ontario.

Map 1.1: Districts of Northern Ontario

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

As noted above, the Study Area 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 Study Area in northwestern Ontario including select communities and major highways. Map 1.3 provides an overview of the Districts in northeastern Ontario including Cochrane District.

[5] 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 Northwestern Ontario

Northwestern Ontario is served by major highways including Highway 11 and 17 – both are part of the Trans Canada Highway (see Map 1.2). 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.[6]

Highway 17 also runs east west and links the City of Thunder Bay to the City of Dryden and the City of Kenora.[7] 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.[8]

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.[9] 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.[10]

---

[6] 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.

[7] 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.

[8] The City of Duluth, Minnesota is about 305km from the City of Thunder Bay.

[9] 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).

[10] 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)

Physical Infrastructure in Cochrane District (Northeastern Ontario)

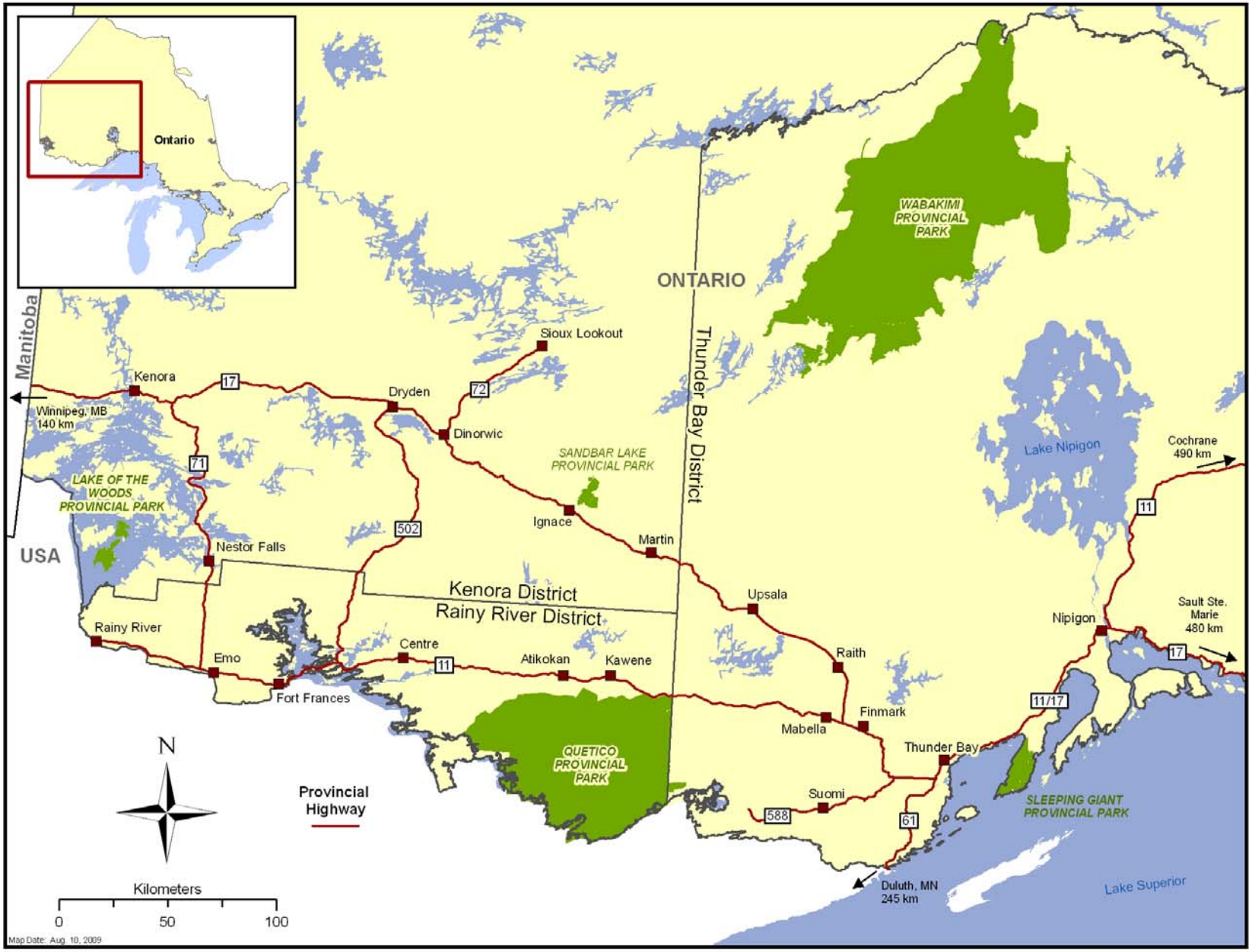
Cochrane District is served by several highways in the region (Map1.3). Highway 11 connects communities across the southern part Cochrane District from the Township of Black River-Matheson in the east to Hearst in the west and beyond into Thunder Bay District.[11] Highway 11 extends south of Black River-Matheson 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.[12]

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.[13] 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.

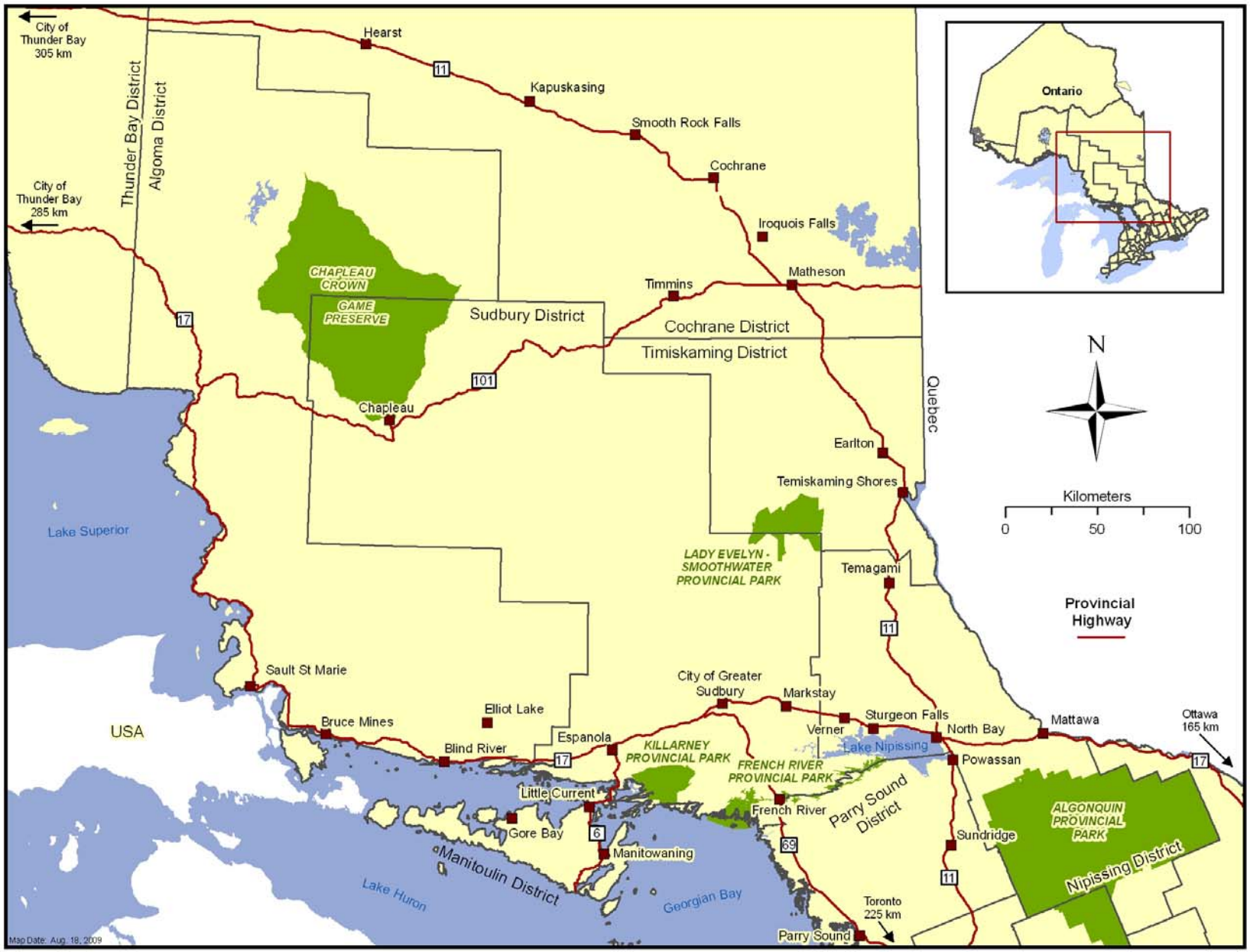
The region is also served by one of the largest airports in northern Ontario located in the City of Timmins. The Timmins airport serves the air commuter and cargo needs of the surrounding market area which is comprised of 160,000 people.[14]

[11] The overland distance between the Township of Black River-Matheson and the Town of Hearst is approximately 290km.
[12] The overland distance between the Township of Black River-Matheson and the City of North Bay is approximately 295km
[13] 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
[14] 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).

Map 1.2: Communities and Major Highways in Northwestern Ontario



Map 1.3: Communities and Major Highways in Northeastern Ontario



2.0 Socio-Economic Profile of Kenora District

2.1 Introduction

This section of the report provides a socio-economic profile of Kenora 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 Kenora 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

Although the population of Kenora District declined from 63,360 in 1996 to 61,802 in 2001, it rebounded to 64,419 in 2006. The change in population between 1996 and 2006 represents a 2% increase. As shown in Table 2.1, most of the other Districts in northern Ontario experienced an overall decline in their population between 1996 and 2006. Northern Ontario as a whole experienced a 5% decline in its population while the province 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%
Cochrane District	93,240	85,247	82,503	-12%
Kenora District *	**63,360**	**61,802**	**64,419**	**2%**
Parry Sound	39,885	39,665	40,918	3%
Temiskaming District	37,807	34,442	33,283	-12%
Rainy River District *	23,138	22,109	21,564	-7%
Sudbury District	23,831	22,894	21,392	-10%
Manitoulin District	11,747	12,679	13,090	11%

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

Although the overall population in northwestern Ontario (Thunder Bay, Kenora, and Rainy River Districts) declined by almost 4% between 1996 and 2006, the Aboriginal population increased from 34,825 to 46,455 or over 30%. The Aboriginal population currently represents about 20% of the total population in northwestern Ontario. In comparison, the Aboriginal population represents approximately 2% of the provincial population (Statistics Canada, 2006).[15] Although the overall population of northwestern Ontario is projected to decline by almost 6% by 2031, this figure masks the fact that the Aboriginal population will continue to grow significantly in some communities such as Thunder Bay where a growth rate of 20% over five years is projected (Rosehart, 2008. p.10).

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.

[15] The Aboriginal population represents about 11% of the total population in Thunder Bay District, 22% of the total population in Rainy River District, and 41% of the total population in Kenora District. The Aboriginal population represents about 13% of the total northern Ontario population (Statistics Canada, 2006).

In 2006, health care and social services was the leading employment sector in Kenora District with 4,505 jobs or 15% of the total jobs in the District (Table 2.2). The other top ranking sectors in the District in terms of total jobs include retail trade with 3,985 jobs (13%), public administration with 3,660 jobs (12%), accommodation and food services with 2,660 jobs (9%), educational services with 2,590 jobs (8%), and manufacturing with 2,290 jobs (8%). Agriculture directly employed a total of 100 people (i.e. on farm jobs) in Kenora District in 2006.

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.

One of the main differences in the employment profile between Kenora District and the rest of northern Ontario is the proportion of government workers. In 2006, approximately 35% of the jobs in Kenora District were government related (public administration, education, and health and social services) compared to 29% for northern Ontario and 22% for the province as a whole.

With respect to the change in job numbers between 2001 and 2006, the total number of jobs in Kenora District increased from 29,640 jobs in 2001 to 30,660 jobs in 2006 (Table 2.3). The industry sectors that experienced the greatest job growth in the District between 2001 and 2006 include health care and social assistance (+795 jobs or 21% growth), educational services (+425 jobs, 20%), retail trade (+360 jobs, 10%), mining and oil/gas extraction (+295 jobs, 38%), and public administration (+285 jobs, 8%).

The industry sectors that experienced the greatest job losses in Kenora District between 2001 and 2006 include manufacturing (-630 jobs or 22% decline), accommodation and food services (-490 jobs, 16%), forestry and logging (-195 jobs, 15%), and construction (-190 jobs, 10%). During this period the number of jobs in the agriculture sector in Kenora District declined by 120 jobs or 55%. 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 Kenora 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.[16] 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, northwestern Ontario recorded a net loss of approximately 2,900 full time jobs. The unemployment rate in northwestern Ontario increased from 8.9% in June 2008 to 11.2% in June 2009, the second highest rate in the province. During the same period the provincial unemployment rate increased from 6.5% to 9.4%. The labour market in northwestern Ontario is continuing to contract as both the labour force and the population declines (Statistics Canada, June 2009).[17]

Agriculture continues to be recognized as an important sector in the local economy with competitive advantages and economic opportunities. In 2008, the Economic Development Strategy prepared for the City of Dryden reported that the area is well situated to develop its agriculture sector for several reasons including the large area of agricultural land in the region that supports the growth of a variety of crops; its isolation from the threat of contaminants from industrial farms; and its access to a large regional market limited to consuming imported food (McSweeney and Associates. October 2008. p.15-16). The Economic Development Strategy for the City of Dryden also identified a number of action plan items to promote the further development of the agriculture sector. The action plan items are presented in Appendix C.

[16] 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.

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

Table 2.2: Employment by NAICS Industrial Sector, 2006.

NAICS Industrial Sector [a]	Ontario		Northern Ontario Region		Kenora District	
	# jobs	%	# jobs	%	# jobs	%
All industries	6,473,735	100%	366,020	100%	30,660	100%
Agriculture	101,210	1.6%	3,070	0.8%	100	0.3%
Fishing, hunting and trapping	1,355	0.02%	375	0.1%	60	0.2%
Forestry and logging	11,780	0.2%	6,955	1.9%	1,100	3.6%
Mining and oil and gas extraction	25,445	0.4%	13,395	3.7%	1,075	3.5%
Utilities	50,215	0.8%	3,510	1.0%	390	1.3%
Construction	384,780	5.9%	22,275	6.1%	1,730	5.6%
Manufacturing	899,670	13.9%	32,525	8.9%	2,290	7.5%
Wholesale trade	307,465	4.7%	9,575	2.6%	455	1.5%
Retail trade	720,235	11.1%	46,135	12.6%	3,985	13.0%
Transportation and warehousing	307,475	4.7%	20,765	5.7%	1,785	5.8%
Information and cultural industries	172,800	2.7%	5,335	1.5%	335	1.1%
Finance and insurance	316,170	4.9%	8,355	2.3%	615	2.0%
Real estate and rental and leasing	126,440	2.0%	4,795	1.3%	320	1.0%
Professional, scientific and technical services	471,620	7.3%	12,715	3.5%	655	2.1%
Management of companies and enterprises	8,440	0.1%	105	0.03%	10	0.03%
Administrative and support, waste management and remediation services	314,005	4.9%	16,410	4.5%	695	2.3%
Educational services	433,485	6.7%	30,030	8.2%	2,590	8.4%
Health care and social assistance	611,745	9.4%	47,650	13.0%	4,505	14.7%
Arts, entertainment and recreation	140,830	2.2%	6,945	1.9%	375	1.2%
Accommodation and food services	414,975	6.4%	28,830	7.9%	2,660	8.7%
Other services (except public administration)	303,510	4.7%	18,135	5.0%	1,290	4.2%
Public administration	350,070	5.4%	28,185	7.7%	3,660	11.9%

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

Table 2.3: Employment by Industrial Sectors for Kenora District, 2001-2006

NAICS Industrial Sector	2001		2006		Change 2001 to 2006	
	# jobs	%	# jobs	%	Change in jobs by #	Change in jobs by %
All industries	29,640	100%	30,660	100%	1,020	3.4%
Agriculture	220	0.7%	100	0.3%	-120	-54.5%
Fishing, hunting and trapping	35	0.1%	60	0.2%	25	71.4%
Forestry and logging	1,295	4.4%	1,100	3.6%	-195	-15.1%
Mining and oil and gas extraction	780	2.6%	1,075	3.5%	295	37.8%
Utilities	290	1.0%	390	1.3%	100	34.5%
Construction	1,920	6.5%	1,730	5.6%	-190	-9.9%
Manufacturing	2,920	9.9%	2,290	7.5%	-630	-21.6%
Wholesale trade	400	1.3%	455	1.5%	55	13.8%
Retail trade	3,625	12.2%	3,985	13.0%	360	9.9%
Transportation and warehousing	1,865	6.3%	1,785	5.8%	-80	-4.3%
Information and cultural industries	280	0.9%	335	1.1%	55	19.6%
Finance and insurance	570	1.9%	615	2.0%	45	7.9%
Real estate and rental and leasing	265	0.9%	320	1.0%	55	20.8%
Professional, scientific and technical services	605	2.0%	655	2.1%	50	8.3%
Management of companies and enterprises	0	0.0%	10	0.0%	10	-
Administrative and support, waste management and remediation services	675	2.3%	695	2.3%	20	3.0%
Educational services	2,165	7.3%	2,590	8.4%	425	19.6%
Health care and social assistance	3,710	12.5%	4,505	14.7%	795	21.4%
Arts, entertainment and recreation	455	1.5%	375	1.2%	-80	-17.6%
Accommodation and food services	3,150	10.6%	2,660	8.7%	-490	-15.6%
Other services (except public administration)	1,055	3.6%	1,290	4.2%	235	22.3%
Public administration	3,375	11.4%	3,660	11.9%	285	8.4%

Source: Statistics Canada, 2001, 2006.

Educational Attainment

In 2005, approximately 11% of the population (25 to 64 years of age) in Kenora District had a university certificate or degree while a further 20% 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 29% of the population reported that they did not have a certificate/diploma/degree (Table 2.4).

A slightly lower proportion of the population in Kenora District has a university certificate or degree compared to northern Ontario as whole (11% 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		Kenora District	
	#	%	#	%	#	%
Total population	6,638,330	100%	400,705	100%	32,500	100%
No certificate, diploma or degree	899,530	14%	76,170	19%	9,555	29%
Certificate, diploma or degree	5,738,800	86%	324,525	81%	22,945	71%
High school certificate or equivalent	1,660,665	25%	101,075	25%	7,885	24%
Apprenticeship or trades certificate or diploma	581,125	9%	51,405	13%	3,845	12%
College, CEGEP or other non-university certificate or diploma	1,461,630	22%	102,635	26%	6,575	20%
University certificate, diploma or degree	2,035,370	31%	69,395	17%	4,640	14%
University certificate or diploma below bachelor level	309,945	5%	11,300	3%	1,085	3%
University certificate or degree	1,725,425	26%	58,095	14%	3,555	11%
Bachelor's degree	1,057,200	16%	36,230	9%	2,295	7%
University certificate or diploma above bachelor level	209,345	3%	10,615	3%	660	2%
Degree in medicine, dentistry, veterinary medicine or optometry	47,815	1%	1,650	0.4%	90	0.3%
Master's degree	351,925	5%	8,000	2%	450	1%
Earned doctorate	59,140	1%	1,560	0.4%	55	0.2%

Source: Statistics Canada, 2006.

Household Income

Table 2.5 shows the distribution of households by household income categories for Kenora 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, Kenora District had a comparable percentage of households with incomes under $20,000 compared to northern Ontario as a whole (16% vs. 17%), and a higher percentage compared to Ontario (13%). Although the proportion of households with incomes between $50,000 and $100,000 in the District (34%) was comparable with both northern Ontario 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 Kenora District was $63,297 which is about $15,000 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		Kenora District	
	# households	%	# households	%	# households	%
All households	4,555,025	100%	305,465	100%	23,020	100%
Under $10,000	198,235	4%	14,175	5%	1,255	5%
$10,000 to $19,999	398,830	9%	37,580	12%	2,470	11%
$20,000 to $29,999	408,130	9%	32,785	11%	2,380	10%
$30,000 to $39,999	447,475	10%	34,085	11%	2,490	11%
$40,000 to $49,999	419,525	9%	30,870	10%	2,350	10%
$50,000 to $59,999	385,555	8%	25,835	8%	1,930	8%
$60,000 to $69,999	356,990	8%	23,800	8%	1,765	8%
$70,000 to $79,999	324,835	7%	20,695	7%	1,585	7%
$80,000 to $89,999	282,910	6%	18,440	6%	1,420	6%
$90,000 to $99,999	238,720	5%	14,585	5%	1,195	5%
$100,000 and over	1,093,810	24%	52,590	17%	4,180	18%
Median household income	$60,455		NA		$52,750	
Average household income	$77,967		NA		$63,297	

Source: Statistics Canada, 2006.

3.0 Land Base Resources in Northwestern Ontario

This chapter of the report provides an overview of the different land base and agricultural community resources in northwestern 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 northwestern 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).[18]

The Canadian Shield also features small areas of clay deposits which are suitable for raising crops and grazing. Under the Canadian agricultural land use classification system, Class 1 soils are of prime suitability for crop production while Class 2 and 3 soils are considered suitable for sustained production of common field crops if specified management practices are observed. Soils of Classes 1, 2, and 3 that are free from severe constrains and can support economically viable agricultural production are referred to as 'dependable agricultural land'. Marginal lands with Class 4 soils are also used for agricultural activity including limited crop production and permanent pasture.

Northern Ontario does not possess any Class 1 soils but does feature areas with Class 2 to 4 soils. In northwestern Ontario, these soils are located around several communities in the southern part of the region including Thunder Bay, Dryden, Fort Frances, Rainy River and Emo.

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

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

[18] 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 northwestern Ontario (including the agricultural production areas around the City of Thunder Bay, the Town of Fort Frances, the Town of Rainy River, the City of Dryden, and the City of Kenora) 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 northwestern Ontario.

In the southern part of northwestern Ontario average summer temperatures during 1971-2000 were about 18^{o}C while average winter temperatures were about -14^{o}C (Colombo et al., 2007, p.25). 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 southern part of northwestern Ontario the average earliest planting date in the Thunder Bay area is June 3 while the average season ending date is September 10. The Fort Frances area has a slightly longer growing season with May 23 as the average earliest planting date and September 15 as the average season ending date (Brown and Bootsma, 1997).

The following table shows the climate normals for several locations in the southern part of northwestern Ontario. The climate normals are based on Canadian climate stations with at least 15 years of data between 1971 and 2000 (Environment Canada, 2008). The Thunder Bay area generally has cooler summers and warmer winters relative to other parts of the region due to the presence of Lake Superior which helps to moderate surrounding air temperatures in the summer and winter.

Table 3.1: Climate Normals for Select Areas in Northwestern Ontario (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)
Thunder Bay A [a]	January	-14.8	3.1	-8.6	-21.1	2.5	41.2	31.3
	July	17.6	1.2	24.2	11	89	0	89.0
	Year	2.5	0.9	8.5	-3.6	559	187.6	711.6
Fort Frances A [b]	January	-16.2	3.8	-10.3	-22	0	31.6	31.6
	July	18.8	1.1	25.1	12.4	94.7	0	94.7
	Year	NA	NA	NA	NA	580.9	139.9	720.7
Kenora A [c]	January	-17.3	3.7	-12.6	-22	0.4	28	26.1
	July	19.5	1.5	24.4	14.5	95.3	0	95.3
	Year	2.7	1.1	7.4	-2	514.4	158.2	661.8
Dryden A [d]	January	-17.5	3.5	-12.4	-22.6	0.2	30.2	28.4
	July	18.8	1.4	24.2	13.2	98.8	0	98.8
	Year	2.1	1.1	7.2	-3	535.6	169.9	701.3

[a] Thunder Bay A: Latitude = 48° 22' N; Longitude = 89° 19' W; Elevation = 199 m.
[b] Fort Frances A: Latitude = 48° 39' N; Longitude = 93° 26' W; Elevation = 342 m.
[c] Dryden A: Latitude = 49° 50' N; Longitude = 92° 45' W; Elevation = 412 m.
[d] Kenora A: Latitude = 49° 47' N; Longitude = 94° 21' W; Elevation = 410 m.
Source: Environment Canada, 2008

The Crop Heat Unit (CHU) system was developed in the 1960's and is used to recommend corn hybrids and soybean varieties which are best suited for production in specific CHU zones in various regions of Canada. There is a wide selection of hybrids and varieties for most crops. Most of the warm-season crops have a wide range of maturities. The CHU ratings are based on the total accumulated CHUs for the frost-free growing season in each area of the province.[19]

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.

[19] 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.

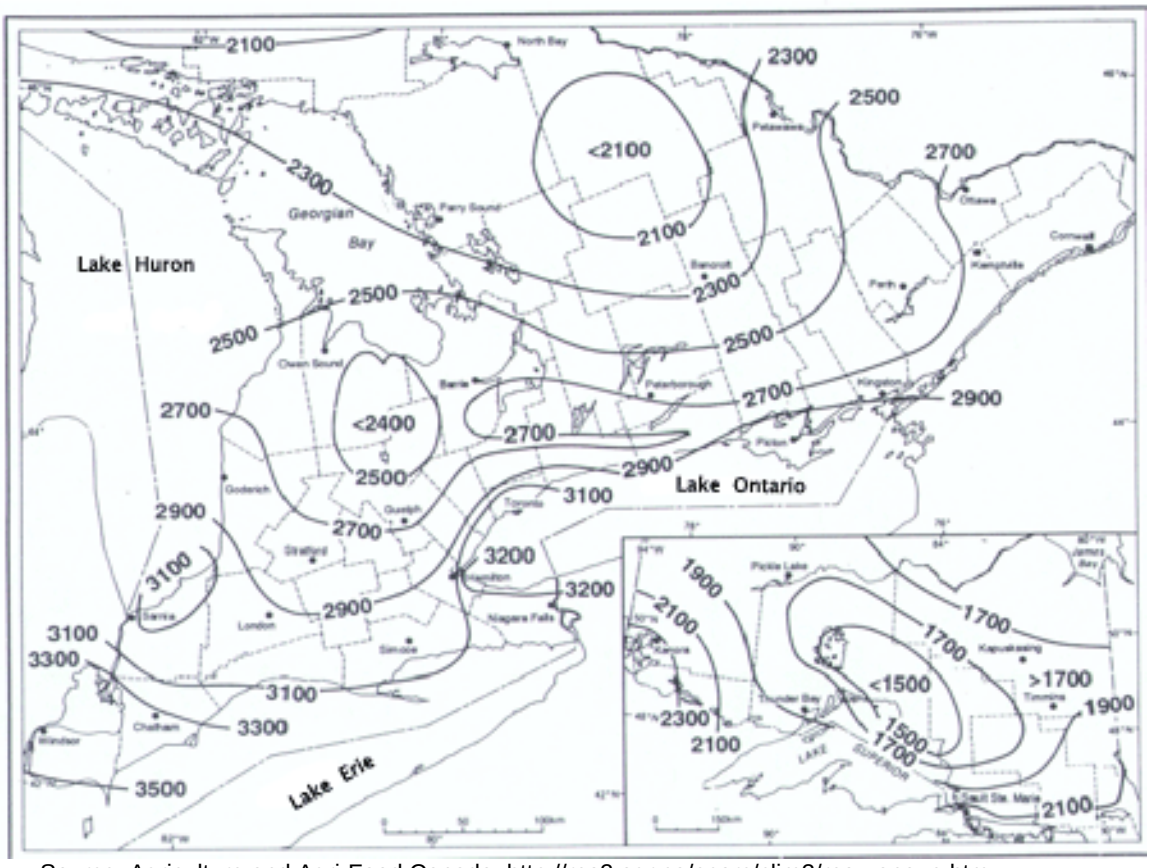
This makes it impossible to estimate the CHU rating closer than 50 heat units for any location.

The accumulated CHU available for crops such as corn and soybeans across Ontario are shown in Map 3.1. The northwestern Ontario Study Area is shown in the insert of Map 3.1 in the lower right corner. CHU ratings range from approximately 1900 in Thunder Bay to 2300 in Fort Frances. These ratings allow for a variety of crop production in northwestern Ontario including wheat, oats, barley, corn, soybeans, potatoes, alfalfa, and other hay fodder crops.

As noted above, CHUs can fluctuate from year to year. CHU data collected at the Emo Agricultural Research Station between 2000 and 2008 show the lowest CHU rating in 2004 at 1950 and the highest CHU rating in 2005 at 2815 (Bliss, 2008).[20]

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

[20] Emo Agricultural Research Station (EARS) is located along Highway 11 between Fort Frances and Rainy River. Additional details on the activities at EARS are presented in section 2.5 of this report.

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).[21] 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 northwestern Ontario is expected to increase by 1 to 2^{o}C by 2011.[22] The same scenario predicts that average summer temperatures in the southern part of northwestern Ontario will increase by 2 to 3^{o}C starting around 2041 and by 4 to 5^{o}C between 2071 and 2100. With respect to precipitation, starting about 2071 the western half of northwestern Ontario (including Kenora, Dryden and Fort Frances) will receive up to 10% less warm season precipitation while the eastern half of the region (including Thunder Bay) will receive up to 10% more warm season precipitation (p.25).

With respect to the cold season, the same climate change scenario noted above predicts that the average winter temperature in the southern part of northwestern Ontario will be 5 to 6^{o}C warmer by 2071. With respect to precipitation, starting about 2071 much of the western half of northwestern Ontario (including Kenora, Dryden and Fort Frances) will receive up to 10% less cold season precipitation while the eastern half of the region (including Thunder Bay) will receive up to 10% more cold season precipitation (p.25).

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.

CHU ratings in northwestern 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

[21] '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).

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

will increase by almost 400 units between 2010 and 2039 and almost 800 units between 2040 and 2069 (Bootsma, 2002). According to Bootsma et al (2001), grain corn yields could potentially increase by 0.64 tonnes per hectare with each increase of 100 CHU.

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

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

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

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

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

4.0 Agricultural Community Resources in Northwestern Ontario

A number of institutions and organizations work together to promote agriculture in northwestern 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 Kenora District and other areas of northwestern Ontario to illustrate the range of the different organizations and initiatives across northwestern 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 northwestern Ontario to work collaboratively to pool resources and leverage funding to facilitate research, as was the case with this study.

Federation of Agriculture

Northwestern Ontario is represented by three Federations of Agriculture, one for each District in the region (Thunder Bay, Rainy River, Kenora). 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

Northwestern Ontario is represented by three Soil and Crop Improvement Associations, one for each District in the region. 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 Associations also work collectively to publish a regular newsletter, *Northwest Link*, 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.

The Kenora Soil and Crop Improvement Association also participates in the annual Agriculture in the Classroom program which consists of providing classroom presentations to children in grades 1 to 3 (chick hatching projects) as well as youth in grades 5 to 8 (nutritional value of dairy products) and grade 9 (soil and environment topics) (Northwest Link. March 2009).

Community Gardens

The Dryden Community Garden held its first meeting in 2006 with 16 potential partners and opened in 2007 on land provided by the City of Dryden. The Garden was established to promote healthy living for the City of Dryden and surrounding area. It was designed to serve all ages and provides local and regional activities related to horticulture, agriculture, recreation, socialization, cultural development, local markets, and programming. For example, the Garden works in partnership with Northwestern

Health Unit to promote Plant a row-Grow a row with the extra produce being given to the Food Bank.

There is interest in expanding the garden into other areas of the City due increasing demands for plots and the Garden has taken a leadership role in piloting the Northwest Strong brand as a symbol of community development. The organizing committee for the Garden has been contacted by other groups in northwestern Ontario to assist and provide advice in the development of other multipurpose gardens. Additional details on the Gardens and the activities of Northwest Strong are provided on the Northwest Strong website: http://www.northweststrong.ca/

Research Groups

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

New Liskeard Agricultural Research Station

The New Liskeard Agricultural Research Station (NLARS) in Temiskaming District operates two stations in northern Ontario: the Verner Test Site (Nipissing District) and the Emo Agricultural Research Station (Rainy River District). NLARS manages approximately 680 acres along with an additional 120 rented acres in and near New Liskeard (Temiskaming Shores). Research programs focusing on agronomy, beef, and horticulture are all carried out this central station.

NLARS recently worked in partnership with farmers in the Dryden area in completing field trials with sulphur fertilizer applications on sweet corn and forage crops.[23]

Emo Agricultural Research Station

The Emo Agricultural Research Station (EARS) is located in Rainy River District (Chapple Township) along Highway 11. The station is based on 133 acres of clay loam soil and includes an agronomy unit and a horticulture unit. The agronomy unit focuses on adapted crop species including spring wheat, barley and oats, canola, soybeans, and perennial forages such as alfalfa, clovers and grasses. Research areas include cultivar evaluation, crop nutrition and new species evaluation. In 2008, EARS began conducting green manure trials using a variety of cover crops (e.g. clover, hairy vetch, braco mustard, buckwheat and oilseed radish) where hard red spring wheat will be introduced (Bliss, 2008).[24] EARS is also involved in a 3 year trial to examine two types of grasses

[23] The results of the 2006-2007 field trials can be accessed at the following website: http://www.ontariosoilcrop.org/docs/V4Gen1.pdf

[24] A green manure is a type of cover crop gown primarily to add nutrients to the soil. Typically a green manure crop is grown for a specific period of time and then ploughed under / incorporated into the soil. Green manures can perform multiple functions including soil improvement and soil protection.

(reed canary and switch grass) that could potentially be grown, harvested and mixed in wood waste to fuel the new Abitibibowater biomass boiler in Fort Frances.[25]

Thunder Bay Agricultural Research Station

The Thunder Bay Agricultural Research Station (TBARS) is located in the City of Thunder Bay. As noted on the TBARS website the research station is committed to the establishment, operation, promotion, and transfer of agricultural research for the further development and diversification of the agricultural industry (TBARS, Aug. 2009. http://www.tbars.net/).[26]

In 2008, TBARS conducted research on a wide range of spring cereal crops including numerous wheat, barley and oat varieties. In general the research examined production from the standpoint of grain yield, grain protein content, straw yield, and total biomass yield. In the case of barley, silage yield and silage protein content was also examined. Yield performance was also examined in relation to variations in seeding dates, the application of chemical or natural fertilizers, fertilizer blends, the application of mineral nutrition, and intercropping with other crops. In 2008, TBARS also conducted research on winter cereal crops (including varieties of wheat, barley and rye) as well as soybeans, field peas, fall and spring canola, and a wide range of forage crops (e.g. grasses, corn for silage, alfalfa). TBARS also has several long term experiments underway including:

- examining the effects of periodic applications of lime and wood ash on soil pH and nutrients and resulting barley yields (initiated in 2004)
- examining the effects of solid dairy manure, wood ash and fertilizer nutrients on soil pH and nutrients and resulting barley yields (initiated in 2004)
- experimenting with 10 different potential cropping systems (crop rotation) including forage and grain legumes, other forages, and cereals spread over 10 years (initiated in 2004)

Other field/crop trials at TBARS in 2008 included a medicinal plant garden and industrial hemp variety performance. Additional details on the above research and other research activities conducted by TBARS in 2008 are presented in the TBARS Annual Research Results Summary which can be accessed at the following website: http://www.tbars.net/annual.shtml.

[25] EARS is conducting the research in conjunction with several partners including the Rainy River Futures Development Corporation (RRFDC), Abitibibowater, and 7 district farmers (RRFDC. http://www.rainyrivervalley.ca/biofuel-trial-page.html).

[26] The Thunder Bay Agricultural Research Station was founded by the Ontario Ministry Agriculture, Food and Rural Affairs (OMAFRA) in 1991. The University of Guelph and Kemptville College also managed the station as part of the research program with OMAFRA. Since 2003, TBARS has been run based on a funding agreement with the Northern Ontario Heritage Fund Corporation through the Ontario Ministry of Northern Development and Mines. Communications and outreach have been made possible by funding through the Agricultural Adaptation Council/Agriculture and Agri-Food Canada.

Food Security Research Network

The Food Security Research Network (FSRN) combines Lakehead University resources (faculty, students and staff) with northwestern Ontario partners to address food security issues (food marketing, production, distribution, and new/innovative uses of the boreal forest) through four innovative approaches: Community Shared Agriculture (CSA), Community Gardens, Learning Gardens, and AgroForestry (http://www.foodsecurityresearch.ca/).

Some of the projects supported/promoted by FSRN include:

- Community Supported Agriculture (CSA) – In this approach to agriculture, farmers and consumers share the risks and benefits of growing food. Consumers buy into the farming process by paying for shares of production in advance of seeding.[27]
- Lakehead University Community Campus Garden – FSRN established this 24,000sqft garden to bring together experienced and beginner gardeners to raise awareness of sustainable gardening practices and to promote and expand the growth of local food options. FSRN also produces the Campus Garden newsletter which contains gardening information and resources.
- Roots to Harvest (2007-2010) – This project involves young people in urban and rural Thunder Bay to engage in issues about food security within a science and technology framework. The project partners with other organizations in coordinating and delivering educational outreach activities related to food production, nutrition, culture and distribution.[28]
- Learning Garden – This study involves the implementation and evaluation of a health learning program with three First Nations communities. The garden includes the cultivated garden and natural or forest gardens as viable local food sources with no artificial boundary between the two. A diversity of local food sources is encouraged in one seamless local food system.
- Grain Mill Feasibility Study – This study examined the feasibility for establishing a local wheat milling facility. The study confirmed that there is a market for locally ground flour and a mill was constructed and is now in operation at Brule Creek Farms, Kakabeka Falls.
- Community Service Learning (CSL) – This learning and research initiative provides Lakehead University faculty and students with opportunities to engage with the community in building an environment that promotes local food systems. As described on the FSRN website, all instructors "are encouraged to create sub-themes of food security that are pertinent to a credit course that they are instructing

[27] Boreal Edge Farms is one example of a CSA operation in northwestern Ontario. The farm has 4 acres in vegetables and a further 27 acres are used for beef pasture. A summer share at Boreal Edge Farms is approximately $55 per week (Chronicle Journal, March 23, 2009) and during the week of August 12, 2009, the share consisted of carrots, golden beets, broccoli, cauliflower, mesclun mix, green onions, rosemary, basil, and peas. The farm also offers bread and eggs from other local farm operations (http://borealedgefarm.blogspot.com/).

[28] The project also operates the Urban Youth Garden, a 1 acre garden in Thunder Bay, which provides youth between the ages of 15-18 with a summer job taking care of crops and working with the surrounding community (http://www.rootstoharvest.org/).

and could provide the students with community engagement whereby the students can learn from the community and bring this knowledge back into the classroom."[29] One of the courses being offered, Introduction to Northern Small Scale Agriculture, involves students spending 1day a week at a local farm and learning about local crops, livestock, and alternative livestock. Students are also introduced to farm-related heritage industries including felting (wool production) and woodworking (Chronicle-Journal, March 22, 2009).

- Marketing Study on Consumer Beef Product Preferences – FSRN assisted the Thunder Bay Cattlemen's Association in conducting a study of end users (i.e. restaurateurs, institutional chefs, and managers and retailers) to determine preferences of samples of locally produced meat. The study also involved a survey of regional potential consumers to define the consumption demand trends and preferences for locally produced beef (Northwest Link. April 2009).

FSRN has also been active in a Blueberry Marketing Initiative with Aroland First Nation. This collective action project is promoting community economic opportunities through a blueberry buying depot. In just its second season the project has achieved significant results with the buying depot purchasing nearly 6,000 litres of blueberries, resulting in approximately $36,000 earned by pickers.

The blueberries were made accessible to customers in northwestern Ontario through a number of locations in the City of Thunder Bay and the surrounding area. This included a regular presence at various markets including the Thunder Bay Country Market, the Bay Street Market, the South Gillies Market, and the Downtown Artisans and Farmer's Market. The berries were also sold at the Murillo, Hymers and Kakabeka fairs. The Roots to Harvest garden helped to build a loyal customer base and bulk sales to other vendors facilitated a regional market for the berries. Lowey's Produce Greenhouse & Market Gardens, Valley Fresh, Quality Market County Fair, Northern Unique Baked Goods, and Unique Alternatives aided regional distribution and or used the berries in value added products, such a bread, scones, and pies.

Plans for next year include continued growth through social enterprise. A large quantity of blueberries has been frozen for sale throughout the fall and winter and for use in value added products. FSRN will be applying for development funding for equipment which will greatly increase storage, distribution, and marketing capabilities. In addition, FSRN and its partners are working to develop their own label and baskets. Contests will be held in Aroland to select the logo and basket design. The project offers accessible economic development for all community members and FSRN is seeking to build new partnerships to make forest foods more accessible and profitable for northern Ontarians.

[29] CSL programs are interdisciplinary, and involve such areas as Food Issues in Northern First Nations, Mapping of Agricultural land in Northwestern Ontario, Field Studies in Sustainable Northern Agriculture, Plant Propagation Techniques, Water Security and Resource Management, Food and Writing, Northern Food Issues, Pollinator Studies, and Community Soil Analysis. (http://www.foodsecurityresearch.ca/?page_id=6)

Details on other FSRN research initiatives are provided on the FSRN website: http://www.foodsecurityresearch.ca/?page_id=2

Agri-Food Innovation

Northern Ontario is a source of agri-food innovation. Since the Premier's Award for Agri-Food Innovation Excellence was established in 2006, a total of six farms in northwestern Ontario have been recognized for their innovation and contribution to the community and economy.[30]

- Lowey's Produce - Rainy River District (2008)
  Lowey's Produce rebuilt their greenhouse operation with a high efficiency greenhouse and heating system. The operation features new heat retention and heat generation systems that have improved efficiencies throughout the greenhouse process. The new clean energy boiler runs on biomass gasification. As a result, Lowey's Produce has reduced electrical energy costs by as much as 40%, and eliminated its natural gas costs. The innovation allows the production of more products and crops year-round.

- Cornell Farms - Rainy River District (2007)
  Cornell Farms has shifted to direct marketing to better respond to consumer demand. The marketing approach includes branding, the use of a wireless Visa/Debit machine and a range of new beef products that incorporate other local products such as wild rice.

- Pine River Ranch – Rainy River District (2006)
  Pine River Ranch is applying careful, intensive pasture management to provide high-quality grazing for the operation's 600 beef cows. The operation has established a riparian zone along the ranch's waterways and manure is composted and runoff has been eliminated. The operation has also set aside land under the Green Cover program and fences have been reconstructed and trees planted to evaluate the potential for a shelter belt. Additionally, solar energy is being used to power remote water systems for their cattle.

- Rainy River Elk Company – Rainy River District (2006)
  In the period leading up to the BSE crisis that developed in 2003, Rainy River Elk Company relied on the U.S. market for 80% of its revenues.[31] With the closure of

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

[31] A world wide embargo was placed on a variety of Canadian meat products and shipments of livestock as a result of a single case of bovine spongiform encephalopathy (BSE or mad cow disease) that was discovered in an Alberta beef cow in May 2003. Although regional figures are unavailable, Ontario's

the border to meat products, the operators responded by developing and implementing new ways to generate local interest in their products including product differentiation and working with others to expand its reach through farmers' markets.

- Gammondale Farm - Thunder Bay District (2007)
  Gammondale Farms have developed a variety of agri-tourism activities to attract families, students and tourists to their traditional produce farm. In addition to growing a wide variety of produce including strawberries, pumpkins, squash and gourds, they also offer fun and educational experiences that promote the environment, healthy lifestyles and nutrition, and agricultural awareness.

- Thunder Oak Cheese Farm – Thunder Bay District (2006)
  Thunder Oak Cheese Farm operates a Gouda cheese processing plant which was expanded from the original dairy farm. The plant is the only Gouda cheese plant in northern Ontario and also features an educational component where the public are invited in to watch the cheese making process. This innovative approach is providing a product and service to northern Ontario residents and encouraging greater interest in agri-related artisan activities.

Additional Research in the Region

In 2008, the provincial government established the $12-million, four-year, Ontario Market Investment Fund which is targeted to promote consumer awareness of Ontario-produced foods and encourages Ontario to buy locally. Under the program, the Kitchenuhmaykoosib Inninuwug (Big Trout Lake) First Nation recently received a $34,250 grant to build a small scale commercial greenhouse and carry out research aimed at securing agreements for cost effective freight charges to distribute the vegetables throughout the north; setting up a distribution network; getting grocery retailers to commit to carrying the produce on their shelves; and conducting research on consumer preferences for local food (Ontario Ministry of Agriculture, Food and Rural Affairs, April 2009).

21,000 beef producers were estimated to be losing about $4 million per week during the BSE situation (Ontario Cattlemen's Association, September 2, 2003).

5.0 Profile of the Agriculture Sector in Kenora District

5.1 Introduction

This section presents a profile of the Agriculture Sector in Kenora District. Agricultural activity in Kenora District is largely located in and around the cities of Kenora and Dryden.

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 Kenora 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 a single geographic designation: Kenora District.

Map 5.1 shows the municipalities that stretch between the cities of Kenora and Dryden.

Map 5.1: Select Municipalities in Kenora 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 Kenora 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 Kenora District's contribution to these economies.[32]

The Census data was reviewed with agri-sector stakeholders in Kenora 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.

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

5.2 Number of Farms, Farmland Area and Land Tenure

In 2006, Kenora District reported a total of 92 farms, down from 110 farms in 1996 (Table 5.1).[33] This represents a 20% decline across the District which is higher than the rate of loss experienced across the northern Ontario region and Ontario as a whole (15%). In 2006, approximately 4% of all farms in northern Ontario were located in Kenora District.

Table 5.1: Number of Farms in Kenora 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%
Kenora District	110	103	92	-18	-20%

Source: Statistics Canada, 1996, 2001, 2006.

Kenora District farms reported a total of 36,153 acres of workable and non-workable (e.g. woodlands, wetlands, natural pastureland) farmland in 2006 (Table 5.2).[34] This represents approximately 4% of the total farmland reported in northern Ontario in 2006. Between 1996 and 2006, the area of farmland reported in Kenora District decreased by approximately 900 acres.

Historically, Kenora District reported a much larger area of farmland with 74,162 acres reported from 238 farms in 1961 and 48,350 acres of farmland from 130 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 Kenora District increased from 371 acres to 393 acres or 6% 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%).

[33] 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).

[34] 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.

Table 5.2: Total Land Area, Workable[a] and Non-workable[b], Reported by Farms in Kenora 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
Kenora District	110	37,052	371	103	37,992	369	92	36,153	393

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

Approximately 34% or 12,310 acres of the total farmland area reported by farmers in Kenora District is leased or rented (Table 5.3). This is higher than the provincial average of 28% and the northern Ontario average of 26%. Between 1996 and 2006 the total area of farmland reported as rented in the District increased by 5,816 acres or 90%.

Table 5.3: Land Tenure in Kenora 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%
Kenora District	30,558	82%	6,494	18%	23,843	66%	12,310	34%

Source: Statistics Canada, 1996, 2006.

5.3 Farmland Use

Land reported as 'land in crops' accounts for close to 14,000 acres or 38% of the total farmland reported in Kenora District in 2006 (Table 5.4). Land reported as natural land for pasture accounts for 5,486 acres of the total farmland reported and land reported as tame/seeded pasture accounts for 2,619 acres of the total farmland reported in Kenora in 2006. Kenora District has a comparable percentage of its farmland base in crop production compared to northern Ontario as a whole (37%) but a lower percentage compared to the province (68%).

Between 1996 and 2006, the area reported in crop production in Kenora District increased by 2,231 acres or 19%. During the same period the area reported in crop production in northern Ontario and Ontario increased by 8% and 3% respectively.

Historically, Kenora District reported a larger area in crop production in 1961 at 17,660 acres. The current area in crop production in the District is comparable to the area of crop production reported in 1981 (13,716 acres).

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

	Total area of farms (acres)	Land in crops	Summer-fallow [a]	Tame or seeded pasture [b]	Natural land for pasture [c]	All other land [d]
1996						
Ontario	13,879,565	8,759,707	48,492	860,786	1,641,692	2,568,888
Northern Ontario	1,025,190	350,511	3,920	90,526	251,066	329,167
Kenora District	37,052	11,546	222	2,987	6,777	15,520
2001						
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
Kenora District	37,992	12,371	151	3,665	6,318	15,487
2006						
Ontario	13,310,216	9,046,383	29,394	749,719	1,112,668	2,372,052
Northern Ontario	1,022,060	380,186	2,163	96,093	222,173	321,445
Kenora District	36,153	13,777	NA	2,619	5,486	NA

[a] Summerfallow involves keeping normally cultivated land free of vegetation throughout one growing season by cultivating (plowing, discing, etc.) and/or applying chemicals to destroy weeds, insects and soil-borne diseases and allow a buildup of soil moisture reserves for the next crop year. Includes chemfallow, tillage, and/or a combination of chemical and tillage weed control on the same land.
[b] Tame or seeded pasture includes grazeable land that has been improved from its natural state by seeding, draining, irrigating, fertilizing or weed control. Does not include areas of land harvested for hay, silage, or seed.
[c] Natural land for pasture includes areas used for pasture that have not been cultivated and seeded, or drained, irrigated or fertilized. Includes native pasture/hay (indigenous grass suitable as feed for livestock and game); rangeland (land with natural plant cover, principally native grasses or shrubs valuable for forage); grazeable bush (forest land and bushy areas used for grazing, not land cultivated for crops or with dense forest), etc.
[d] All other land includes woodland, wetlands and Christmas tree area.
N/A denotes that too few farms have reported data to ensure confidentiality.
Source: Statistics Canada, 1996, 2001, 2006.

5.4 Farm Types

Kenora District features a variety of different farm types. In 2006, a total of 14 farms or 15% of all farms in Kenora District were primarily engaged in beef cattle production while only 1 farm was involved in dairy production and 19 farms (21%) were primarily engaged in raising other types of animals (e.g. horses, goats, rabbits, etc.). Just over 40% of the farms in Kenora District were primarily engaged in producing hay/fodder crops and 14% were primarily engaged in greenhouse/nursery production in 2006 (Table 5.5).

Between 2001 and 2006, the number of beef cattle farms in Kenora District declined slightly from 16 to 14 farms or 13%. During the same period the province as a whole also experienced a 13% decline in beef cattle farms.

Between 2001 and 2006, the number of dairy farms in Kenora District declined from 3 farms to 1 farm, which represents a decline of 67%. During the same period the province as a whole experienced a 23% decline in dairy farms.

In 2006, Kenora District reported a total of 3 farms primarily engaged in poultry/egg production whereas the Districted reported no poultry/egg farms in 2001.

The number of farms in Kenora District involved in greenhouse, nursery, floriculture production increased from 10 farms in 2001 to 13 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 Kenora District, Northern Ontario and Ontario, 2001-2006 (Farms reporting gross farm receipts of $2,500 or more) [a]

	Total farms	Dairy cattle	Beef cattle	Hog and pig	Poultry and egg [b]	Sheep and goat	Other animal production [c]	Oilseed and grain	Fruit	Green-house, nursery, floriculture	Other crops [d]	Vegetable
2001												
Ontario	55,092	6,414	12,738	2,491	1,614	1,017	5,428	13,371	1,739	2,430	6,434	1,416
Northern Ontario Region	2,279	239	928	16	16	36	241	75	23	125	545	35
Kenora District	85	3	16	1	0	0	18	3	0	10	34	0
2006												
Ontario	57,211	4,937	11,052	2,222	1,700	1,365	7,573	13,056	1,892	2,822	8,823	1,769
Northern Ontario Region	2,479	171	752	11	27	46	383	59	35	131	810	54
Kenora District	92	1	14	0	3	0	19	2	1	13	38	1

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

In 2001, the first year that the Census of Agriculture began to collect data on organic farming activity, there were no farms in Kenora District that reported organic farming activity. By 2006 a total of 11 farms in the District reported that they produced organic products and at least 1 farm was producing products that were certified as organic.[35]

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

Table 5.6: Number of Farms Producing Organic Products in Kenora 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
Kenora District	11	1	0	10	4	5	6	0	2

Source: Statistics Canada, 2006.

[35] 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 Kenora 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 Kenora District beef sector as an example, the LQ formula for 2006 appears as follows:

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

$$LQ = (14 / 92) \div (11{,}052 / 57{,}211) = 0.8$$

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 greenhouse, nursery, floriculture sector (2.9) indicates that Kenora District is specialized in these production activities. The LQ's for the other farm sectors are presented in Table 5.7. The LQ data indicates that Kenora District is also specialized in other crop production (e.g. hay, fodder crops) as well as animal production other than beef and dairy. Based on comparisons with 2001 data, Kenora District is becoming increasingly specialized in greenhouse, nursery, floriculture production.

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

Year	Dairy cattle	Beef cattle	Hog and pig	Poultry and egg [b]	Sheep and goat	Other animal prod. [c]	Oilseed and grain	Fruit	Green-house, nursery, floriculture	Other crops [d]	Vegetable
2001	0.3	0.8	0.3	0.0	0.0	2.1	0.1	0.0	2.7	3.4	0.0
2006	0.1	0.8	0.0	1.1	0.0	1.6	0.1	0.3	2.9	2.7	0.4

Source: Adapted from Statistics Canada, 2001, 2006.

5.5 Livestock and Animals

Kenora District farms raise a number of different types of livestock. In 2006, at least 2 farms in the District reported raising dairy cattle and 39 farms reported raising beef cattle (the actual number of dairy and beef cattle being raised on these farms was not reported by Statistics Canada).[36] With respect to other livestock, the District also reported a total of 269 horses/ponies, 265 farm raised bison, 192 sheep/lambs, 102 pigs, 55 farm raised deer/elk, and 24 llamas/alpacas. The District also reported 740 hens/chickens and 20 bee colonies in 2006 (Table 5.8).

Between 1996 and 2006 the number of farms raising dairy cattle in Kenora District dropped from 9 to 2 farms and indicates that the number of dairy cows/heifers/calves in the District may also have declined. During the same period, the number of farms raising pigs in Kenora District also dropped from 8 farms to 5 farms and the actual number of pigs dropped from 828 to 102.

Although the number of farms raising hens/chickens in the District dropped from 17 to 14 between 1996 and 2006, the actual number of hens/chickens increased slightly from 710 to 740. Similarly, the number of farms raising horses/ponies in the District dropped from 32 to 29 while the actual number of horses/ponies increased from 213 to 269.

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.[37]

[36] 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.

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

Table 5.8: Inventory of Selected Farm Related Animals for Kenora 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
1996												
Ontario	8,295	35,596,946	10,122	404,797	19,572	441,211	6,777	2,831,082	3,592	231,087	2,521	45,258
Northern Ontario Region	451	283,388	437	18,259	1,448	37,720	144	7,606	189	10,435	124	1,462
Kenora District	17	710	9	454	38	658	8	828	5	NA	7	32
2006												
Ontario	7,397	44,101,552	6,092	329,737	15,017	377,354	4,070	3,950,592	3,408	311,162	2,169	76,114
Northern Ontario Region	342	79,252	209	11,922	1,187	39,723	85	10,171	166	13,899	112	3,265
Kenora District	14	740	2	NA	39	NA	5	102	5	192	3	15

NA denotes that too few farms have reported data to ensure confidentiality.
Source: Statistics Canada, 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
1996										
Ontario	11,829	76,553	46	2,344	256	15,735	161	1,114	1,263	62,928
Northern Ontario Region	640	3,555	14	892	16	722	13	138	85	1,796
Kenora District	32	213	1	-	1	-	6	95	3	6
2006										
Ontario	12,333	97,285	71	4,106	238	11,581	696	4,332	981	64,591
Northern Ontario Region	630	4,507	17	2,316	24	2,179	32	250	62	752
Kenora District	29	269	4	265	5	55	3	24	3	20

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

5.6 Field Crops

Kenora 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 wheat (521 acres), oats (302 acres), and barley (298 acres). The District also produced an unspecified acreage of canola and soybeans on at least 1 farm in 2006 (Table 5.9).

With respect to forage and hay crops, the District produced 1,195 acres of alfalfa/alfalfa mixtures and 7,590 acres of other hay crops in 2006. Although no corn production was reported in 2006, farms in Kenora District have produced corn for silage and grain in other years.

Between 1996 and 2006 the total acreage of oats, barley, and mixed grains declined in Kenora District while the total acreage of wheat and alfalfa/alfalfa mixtures increased.

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 5.9: Total Reported Acreage of Selected Field Crops for Kenora 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
1996												
Ontario	15,282	778,952	4,740	98,357	8,456	332,821	8,651	279,762	20,823	1,895,650	9,927	296,029
Northern Ontario Region	70	5,416	528	15,102	463	35,733	287	13,013	24	596	47	1,665
Kenora District	5	367	28	876	21	1,083	4	547	1	NA	1	NA
2006												
Ontario	14,682	1,235,390	4,362	131,952	5,139	221,029	5,400	173,454	14,304	1,577,862	8,404	320,759
Northern Ontario Region	142	21,264	455	19,839	334	25,329	181	6,768	23	1,911	113	4,021
Kenora District	6	521	10	302	4	298	0	0	0	0	0	0

N/A denotes that too few farms have reported data to ensure confidentiality.
Source: Statistics Canada, 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
1996												
Ontario	26,521	1,479,447	18,172	1,036,399	264	11,910	757	53,304	18,743	1,918,055	1,218	39,905
Northern Ontario Region	749	66,908	1,769	195,393	55	3,531	63	5,351	5	94	143	2,065
Kenora District	12	806	52	7,731	0	0	0	0	0	0	2	NA
2006												
Ontario	24,427	1,662,370	13,010	900,267	312	12,323	205	18,575	17,171	2,155,884	904	38,155
Northern Ontario Region	836	103,232	1,383	175,975	25	1,745	33	4,578	35	4,385	85	1,476
Kenora District	8	1,195	48	7,590	1	NA	1	NA	1	NA	1	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

Data from the 1996 and 2006 Agriculture Census indicates that fruit and berry production in Kenora District is very limited. In 2006, there was no fruit production reported and only 1 farm reported that they produced blueberries (Table 5.10). The decline in acreage for some fruits and berries appears to be a consistent pattern across northern Ontario and the province as a whole.

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

	Apples		Pears		Plums and Prunes		Strawberries		Raspberries		Blueberries	
	# farms	# acres	# farms	# acres	# farms	# acres	# farms	# acres	# farms	# acres	# farms	# acres
1996												
Ontario	2,482	30,524	1,356	3,305	1,065	1,622	971	5,507	789	1,250	172	639
Northern Ontario Region	33	50	6	NA	9	4	51	309	50	76	9	139
Kenora District	0	0	0	0	0	0	3	23	4	NA	0	0
2006												
Ontario	1,223	20,169	542	2,546	376	1,231	801	4,243	613	1,153	161	732
Northern Ontario Region	17	56	5	1	2	NA	43	223	31	52	5	59
Kenora District	0	0	0	0	0	0	0	0	0	0	1	NA

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

Kenora 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 6 farms in Kenora District produced about an acre of sweet corn. It is difficult to comment on the acreage of vegetable production in Kenora 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. 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
1996																
Ontario	2,081	52,789	1,822	21,854	1,170	3,818	20,634	8,350	947	9,729	636	4,131	517	2,964	512	2,739
Northern Ontario Region	113	392	89	82	98	67	29	12	96	36	50	25	45	17	40	12
Kenora District	6	8	4	1	4	1	1	NA	5	2	3	1	2	NA	2	NA
2006																
Ontario	1,399	38,617	1,429	20,195	964	4,146	763	21,482	852	11,879	442	3,707	327	2,025	346	3,712
Northern Ontario Region	92	181	61	15	61	23	54	21	61	29	32	28	23	6	22	4
Kenora District	2	NA	5	1	6	1	3	0	5	1	5	1	6	1	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
1996																
Ontario	820	7,953	260	2,919	718	797	724	6,047	475	1,377	880	3,632	1,429	5,664	338	1,986
Northern Ontario Region	96	35	52	23	84	23	49	13	39	10	29	9	70	41	10	5
Kenora District	3	1	3	1	3	1	4	1	3	1	3	1	4	2	1	NA
2006																
Ontario	648	9,993	204	1,814	607	1,088	648	6,930	429	955	795	4,015	1,518	9,297	391	3,245
Northern Ontario Region	56	21	25	20	52	16	28	4	35	6	21	2	69	74	11	2
Kenora District	6	1	3	1	6	1	3	0	3	0	3	0	5	1	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 Kenora District declined from 15 farms to 10 farms while the corresponding area in greenhouse production actually increased from 210,361 square feet to 252,220 square feet or 20% (Table 5.12). Kenora District accounts for about 7% of the total greenhouse production area in northern Ontario.

In 2006, approximately 25% of the greenhouse production area in Kenora District was reported in floriculture (5 farms, 62,870 square feet) while 4% of the production area was in vegetables (5 farms, 11,180 square feet), and 71% was in other greenhouse products (5 farms, 178,170 square feet).

In 2006, Kenroa District accounted for about 8% of the total area in floriculture production in northern Ontario.

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

	Total area under glass, plastic or other protection		Total area of greenhouses in use in May		Greenhouse flowers		Greenhouse vegetables		Other greenhouse products		Mushrooms	
	# farms	# square feet	# farms	# square feet	# farms	# square feet	# farms	# square feet	# farms	# square feet	# farms	# square feet
1996												
Ontario	2,085	63,302,565	2,085	62,609,895	1,465	36,100,406	785	22,163,817	409	4,345,672	80	3,407,376
Northern Ontario Region	138	2,130,535	138	2,074,054	104	774,835	61	92,163	31	1,207,056	1	NA
Kenora District	15	210,361	15	210,361	9	59,125	9	10.303	6	140,933	0	0
2006												
Ontario	1,898	126,589,790	1,898	125,141,329	1,274	49,414,104	654	69,808,871	282	5,918,354	85	3,447,739
Northern Ontario Region	109	3,418,948	109	3,366,943	81	797,744	46	190,838	27	2,378,361	4	NA
Kenora District	10	252,720	10	252,220	5	62,870	5	11,180	5	178,170	NA	NA

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

5.9 Nursery Products, Sod, and Forest Related Products

Between 1996 and 2006, the total number of farms in Kenora District involved in nursery production increased from 3 to 4 farms.[38] During the same period the number of farms in the District producing Christmas trees remained the same at 1 as did the number of farms producing sod while the number of farms producing maple syrup products dropped from 1 to zero (Table 5.13). It is difficult to comment on the acreage/amount of production in Kenora 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
1996								
Ontario	1,619	26,217	144	23,538	2,240	1,127,373	1,345	27,887
Northern Ontario Region	67	555	17	1,323	91	84,537	59	1,303
Kenora District	3	3	1	NA	1	NA	1	NA
2006								
Ontario	1,209	27,079	120	32,196	2,240	1,311,599	725	15,795
Northern Ontario Region	36	733	9	1,029	100	108,464	31	697
Kenora District	4	7	1	NA	0	0	1	NA

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

[38] 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

Kenora District reported almost $5.5 million in total gross farm receipts in 2005 compared to $4.8 million in 1995 (Table 5.14). The total gross farm receipts for Kenora District in 2005 represent about 3% of the total for northern Ontario.

Table 5.14: Total Gross Farm Receipts (Excluding Sales of Forest Products from Farms) for Kenora 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
Kenora District	110	$4,863,411	103	$5,906,425	92	$5,477,953

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 Kenora District are, on average, lower than other parts of northern Ontario and the provincial average. Farms in Kenora District averaged $59,543 in gross farm gate sales in 2005, compared to $72,278 per farm in northern Ontario and $180,770 per farm in Ontario.

Table 5.15: Average Gross Farm Receipts per Farm in Kenora 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
Kenora District	110	$4,863,411	$44,213	92	$5,477,953	$59,543

Source: Statistics Canada, 1996, 2006.

.

Farm woodlots represent an important source of income for many farmers in northern Ontario. In 2005, farms in Kenora District reported approximately $87,870 in sales of forest products (Table 5.16). Sales of forest products from farms can fluctuate considerably from year to year depending on demand and the availability of the resource.

Table 5.16: Sales of Forest Products from Farms for Kenora 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
Kenora District	17	$78,972	7	$9,040	8	$87,870

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 12% of the farms in Kenora 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 Kenora 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 Kenora 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	%
1995																
Ontario	20,306	30%	12,010	18%	8,162	12%	7,477	11%	11,642	17%	5,513	8%	2,410	4%	67,520	100%
Northern Ontario Region	1,399	48%	621	21%	268	9%	216	7%	265	9%	107	4%	39	1%	2,915	100%
Kenora District	62	56%	20	18%	8	7%	6	5%	9	8%	4	4%	1	1%	110	100%
2005																
Ontario	14,500	25%	10,828	19%	7,397	13%	6,521	11%	7,965	14%	5,589	10%	4,411	8%	57,211	100%
Northern Ontario Region	946	38%	558	23%	358	14%	236	10%	195	8%	123	5%	63	3%	2,479	100%
Kenora District	38	41%	22	24%	13	14%	7	8%	5	5%	4	4%	3	3%	92	100%

Source: Statistics Canada, 1996, 2006.

Kenora District reported $4.6 million in total farm operating expenses in 2005 compared to almost $4.8 million in 1995 (Table 5.18). Kenora District's total farm expenses for 2005 represent 3% of the total for northern Ontario. Total expenses per farm in Kenora District are, on average, lower than other parts of northern Ontario and the provincial average. Farms in Kenora District averaged $50,567 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 Kenora 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
Kenora District	110	$4,762,053	$43,291	92	$4,652,962	$50,576

Source: Statistics Canada, 1996, 2006.

In examining the distribution of farm operating expenses by expense category we find that almost 18% of total operating expenses (almost $1 million) in Kenora District were tied to wages and salaries in 2005 (Table 5.19). This is slightly higher than the percentage for northern Ontario as a whole (16%) and Ontario (14%). The leading expenses as a percentage of total farm expenses in Kenora District in 2005 include wages and salaries (18%) followed by livestock expenses (16%), fuel expenses (11%), farm equipment repair and maintenance expenses (91%), and electricity/phone expenses (7%).

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

	Total farms	Total farm business operating expenses	Total wages and salaries [a]	Total crop expenses [b]	Total livestock expenses [c]	Electricity, telephone and all other tele-communication services	All fuel expenses (diesel, gasoline, oil, wood, natural gas, etc.)	Repairs and maintenance to farm machinery, equipment and vehicles	Repairs and maintenance to farm buildings and fences	All other expenses (excluding depreciation and capital cost allowance) [d]
1995										
Ontario	67,520	$6,545,516,325	$870,427,370	$838,018,004	$1,980,903,395	$225,698,619	$315,267,700	$318,236,693	$162,405,947	$1,834,558,597
Northern Ontario Region	2,915	$133,749,010	$19,298,274	$10,442,810	$33,977,279	$7,343,404	$8,923,979	$9,139,471	$4,508,504	$40,115,289
Kenora District	110	$4,762,053	$1,215,157	$299,591	$789,036	$247,548	$327,976	$300,284	$214,276	$1,368,165
2005										
Ontario	57,211	$8,843,882,426	$1,269,812,144	$1,197,628,533	$2,362,356,671	$269,542,496	$582,869,778	$426,417,721	$211,320,305	$2,523,934,778
Northern Ontario Region	2,479	$151,879,475	$24,490,985	$14,877,218	$29,852,551	$7,555,681	$13,928,483	$10,973,703	$5,355,841	$44,845,013
Kenora District	92	$4,652,962	$823,016	$449,561	$756,753	$316,091	$524,412	$398,853	$170,471	$1,213,805

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

In 2005, total net farm revenue in Kenora District amounted to $824,991 or about 3% of the total net farm revenue reported in northern Ontario. The average net revenue per farm in Kenora District in 2005 was almost $9,000. This is slightly lower than the average for northern Ontario ($11,012) but considerably lower that the average for Ontario ($26,186) (Table 5.20).

Table 5.20: Total Net Farm Revenue and Net Revenue per Farm in Kenora 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
1995					
Ontario	67,520	$7,778,476,483	$6,545,516,325	$1,232,960,158	$18,261
Northern Ontario Region	2,915	$151,786,040	$133,749,010	$18,037,030	$6,188
Kenora District	110	$4,863,411	$4,762,053	$101,358	$921
2005					
Ontario	57,211	$10,342,031,229	$8,843,882,426	$1,498,148,803	$26,186
Northern Ontario Region	2,479	$179,177,281	$151,879,475	$27,297,806	$11,012
Kenora District	92	$5,477,953	$4,652,962	$824,991	$8,967

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 Kenora 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 Kenora District amounted to $1.8 million in 2005. This translates into 34 cents of value added per dollar of gross farm receipts. The average value added component per farm associated with Kenora District farms ($20,489) is slightly lower than the average for northern Ontario ($26,619) and considerably lower than the average for Ontario ($63,631) farms.

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

	Total farms	Total gross farm receipts	Total farm operating expenses [a]	Total agriculture value added [b]	Value added per farm
1995					
Ontario	67,520	$7,778,476,483	$5,042,199,846	$2,736,276,637	$40,525
Northern Ontario Region	2,915	$151,786,040	$101,698,083	$50,087,957	$17,183
Kenora District	110	$4,863,411	$3,210,368	$1,653,043	$15,028
2005					
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
Kenora District	92	$5,477,953	$3,592,978	$1,884,975	$20,489

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

5.12 Farm Capital

In 2005, Kenora District reported $44.8 million in total farm capital, which represents about 3.5% of the northern Ontario total (Table 5.22).

The average farm capital value for farms in Kenora District in 2005 was $486,637 which is slightly lower than the average for northern Ontario ($509,793) and only about half the value of the provincial average of $1.1 million.

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

	Total farms	Total farm capital - Market value [a]	Farm capital per farm	Number of farms reporting by total farm capital category						
				Under $100,000	$100,000 to $199,999	$200,000 to $349,999	$350,000 to $499,999	$500,000 to $999,999	$1,000,000 to $1,499,999	$1,500,000 and over
1995										
Ontario	67,520	$40,860,936,035	$605,168	3,756	11,151	17,962	10,770	14,857	4,530	4,494
Northern Ontario Region	2,915	$1,022,746,952	$350,857	370	784	850	379	394	81	57
Kenora District	110	$41,414,001	$376,491	11	31	35	11	15	5	2
2005										
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
Kenora District	92	$44,770,611	$486,637	6	15	25	19	18	6	3

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

5.13 Farm Operator Characteristics

In 2006, Kenora District reported a total of 130 farm operators, down from 165 operators in 1996 (Table 5.23).[39] In 2006, 69% of all farm operators in the District were male and 31% 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 18% to 31%.

Between 1996 and 2006, the average age of farm operators in Kenora District increased from 49 years to 54 years. Farm operators in the northern Ontario region and Ontario as a whole are on average 1 year younger than farm operators in the District.

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

	Total number of operators	Gender		Age Category			Average age of operators (yrs)
		# of male operators	# of female operators	Under 35 years	35 to 54 years	55 years and over	
1996							
Ontario	96,940	71,050	25,895	13,835	49,000	34,105	49
Northern Ontario Region	4,180	3,010	1,170	575	2,190	1,415	49
Kenora District	165	115	30	30	80	60	49
2006							
Ontario	82,410	58,875	23,530	7,070	40,280	35,065	53
Northern Ontario Region	3,570	2,470	1,095	270	1,755	1,540	53
Kenora District	130	90	40	5	65	65	54

Source: Statistics Canada, 1996, 2006.

Table 5.24 provides data on the types and number of farm operation arrangements in Kenora District, northern Ontario and Ontario between 1996 and 2006. The majority of farms in Kenora District, northern Ontario and Ontario continue to be managed under a sole proprietor operating arrangement. In Kenora District, sole proprietorship type farms account for 55% of all farms which is slightly lower than the northern Ontario average (63%) but comparable to the Ontario average (56%).

Between 1996 and 2006, the proportion of farms managed under a sole proprietorship arrangement in Kenora District increased from 45% to 55% while the proportion of

[39] 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.

partnership arrangements dropped from 42% to 32%. Additional details on farm operation arrangements at the township level are presented in Table 5.24.

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

	Number of farms	Operating Arrangement					
		Sole proprietor-ship [a]	Partnership with no written agreement [b]	Partnership with a written agreement	Family corporation [c]	Non-family corporation [d]	Other (institution, community pasture, etc.)
1996							
Ontario	67,520	38,465	15,242	5,834	6,972	937	70
Northern Ontario Region	2,915	1,820	616	223	210	41	5
Kenora District	110	50	35	9	12	4	0
2006							
Ontario	57,211	31,755	13,953	3,178	7,538	733	54
Northern Ontario Region	2,479	1,566	599	104	166	36	8
Kenora District	92	51	26	3	10	2	0

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

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

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

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

As shown in Table 5.25, 75 of the 130 farm operators (58%) in Kenora District reported working off the farm in 2005. This is slightly higher than the percentage reported for the northern Ontario region (54%) and Ontario as a whole (50%). Between 1995 and 2005 the proportion of Kenora District farm operators working off the farm increased from 45% to 58%. 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 Kenora 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
1995								
Ontario	96,940	27,565	25,490	43,885	66,105	6,575	13,300	10,960
Northern Ontario Region	4,180	1,270	1,215	1,695	2,665	320	660	535
Kenora District	165	40	55	65	90	5	35	35
2005								
Ontario	82,410	24,480	22,400	35,520	41,550	7,325	15,205	18,320
Northern Ontario Region	3,570	1,050	1,075	1,445	1,655	370	760	790
Kenora District	130	30	60	40	55	15	20	40

Source: Statistics Canada, 1996, 2006.

5.14 Kenora District Compared to Other Northern Ontario Districts

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

Although Kenora District has the smallest area of workable and non-workable farmland in northern Ontario (after the City of Greater Sudbury) the average net revenue generated by farms in Kenora District is higher than many other northern districts.

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) [b]	Land in crops (acres)	% of farmland in crops	Average farm size (acres)	Total gross farm receipts (2005)	Total farm operating expenses (2005)	Net revenue per farm (2005)	Net revenue per acre farmland (2005)
Ontario	57,211	82,410	53	13,310,216	9,046,383	68%	233	$10,342,031,229	$8,843,882,426	$26,186	$113
Northern Ontario Region	2,479	3,570	53	1,022,060	380,186	37%	412	$179,177,281	$151,879,475	$11,012	$27
Northern Ontario Districts											
Temiskaming	471	700	51	205,800	114,118	55%	437	$49,834,957	$40,032,383	$20,812	$48
Thunder Bay	252	375	51	61,850	29,420	48%	245	$32,305,551	$24,575,742	$30,674	$125
Algoma	335	480	54	95,814	38,292	40%	286	$20,095,138	$17,581,358	$7,504	$26
Rainy River	312	420	52	211,625	59,374	28%	678	$13,152,226	$12,701,240	$1,445	$2
Nipissing	272	395	52	83,747	35,411	42%	308	$12,777,360	$12,349,810	$1,572	$5
Sudbury	143	205	53	50,799	18,411	36%	355	$12,611,432	$10,363,532	$15,720	$44
Manitoulin	258	345	56	178,144	34,279	19%	690	$12,150,387	$10,277,410	$7,260	$11
Cochrane	184	270	55	75,236	28,437	38%	409	$11,195,641	$10,426,510	$4,180	$10
Parry Sound [a]	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***

[a] 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.
[b] 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 Kenora District in April 2009. A total of 10 agri-sector stakeholders participated in the session which included representatives from a variety of sectors including dairy, beef, hog, horse and vegetable.

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

- Agri-sector stakeholders suspect that much of the recent population growth in the region is linked to the growth of First Nation communities.

- Agri-sector stakeholders reported that employment opportunities in the forestry sector and the tourism sector attracted a large number of people to the area in the 1990s. However, it was suggested that there have been significant job losses in these sectors since 2001 which was confirmed by the 2006 Census data.

- Agri-sector stakeholders confirmed that a substantial number of jobs in the District are in the health sector and government service sector. This is linked to the population characteristics of the region (e.g. significant distances between communities) and the presence of the Ministry of Natural Resources in the region.

- Agri-sector stakeholders confirmed that there has been a substantial decline in the number of jobs in agriculture. However, it was also emphasized that farmers in the region are increasingly working off the farm and it was suggested that some of the farming activity in the region is not likely being reported on, especially in the case of small scale farming activity.

- Agri-sector stakeholders reported that the total area of farmland in production in the region has likely gone down since the 2006 Census. However, it was also noted that the area in production can fluctuate from year to year depending on planting conditions in the spring and the type and timing of crop rotations being used by farmers.

- It was reported that the large average farm size in most parts of northern Ontario is linked to the soil and climate conditions which place greater limitations on crop yields compared to conditions in southern Ontario. This requires farmers in the north to maintain a larger farm area for crop production purposes and/or pasturing purposes.

- Agri-sector stakeholders confirmed that there has been a significant increase in rented farmland as shown in the Census data. It was suggested that the total amount of land rented could eventually exceed 40%. It was noted that some local landowners rent their land to farmers to gain the tax credit. One stakeholder also noted that some farmers in the region are selling their land to hunters from the United States and then leasing back only the land they need. Some stakeholders

noted that a considerable area of land is now sitting idle and in some cases the land is returning to natural tree/brush growth.

- It was suggested that farmers may be cutting back on crop inputs such as fertilizer as a way to reduce costs which could ultimately result in more land being brought back into production to get the same overall yield.

5.16 Summary of Agriculture Characteristics

Key characteristics of the agriculture sector in Kenora District:

- The number of farms in Kenora District declined from 103 to 92 between 2001 and 2006 which is a consistent with an ongoing trend found in the large majority of Ontario counties/districts.[40]

- Since 1996, the average farm size in Kenora District increased from 371 acres to 393 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 is larger than the provincial average (233 acres) but slightly smaller than the average for northern Ontario (412 acres).

- Kenora District reported a total of 36,153 acres of farmland in 2006, down slightly from 37,052 acres in 2001.

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

    - Close to 40% of the total farmland base in the District was used for crop production in 2006 and the area in crop production is increasing.

    - Historically, Kenora District reported a much larger area of farmland with 74,162 acres reported 1961. The District also reported a larger area in crop production in 1961 at 17,660 acres. The current area in crop production in the District is comparable to the area of crop production reported in 1981 (13,716 acres). The above findings suggest there are opportunities for further expansion of crop production in the District.

- The major farm production activities in the District include crop/hay production (40% of the farms are primarily engaged in this activity), beef production (15%), other types of animals including horses, goats, hogs (21%), and greenhouse/nursery production (14%).

[40] 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 number of farms reporting organic production in the District is on the rise including the production of fruits, vegetables and animal and/or animal products.

- The non timber forest product sector is growing in importance but is not captured in the Census data.[41]

- Given the soil and climate limitations in the region, Kenora District has a very productive agricultural sector. In 2005, the District reported $5.5 million in total gross farm receipts.

- The total value added component for agriculture in the District amounted to $1.8 million in 2005. This translates into 34 cents of value added per dollar of gross farm receipts.

- Between 2001 and 2006, the number of jobs directly supported by agriculture in the District declined from 220 to 100. 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 District farm operators working off the farm increased from 45% to 58%. The increase in off-farm employment activity is a consistent trend for farm operators across Ontario.

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

[41] 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.[42] In Ontario, agri-tourism activities typically combine travel to a rural setting and feature agricultural products (e.g. pick your own enterprises, road side stands, on-farm retail stores selling fresh produce and/or farm products) and/or activities (e.g. on-farm recreation/entertainment, harvest festivals, agricultural heritage museums, farm tours, and farm based bed and breakfast accommodation).

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

Northwestern Ontario features a variety of agri-tourism/entertainment activities and destinations. Some examples of farm attractions in northwestern Ontario include:[43]

- Egli's Sheep Farm and Animal Park located just west of Dryden produces sheep and manufactures hand crafted wool and sheepskin products. The farm also features an animal park with exotic farm animals, a bird aviary and lambing barn;
- Honey Mill Farm located in Waldhof which produces vegetables and honey;
- Hutchinson Farm Ent. near Dryden which produces vegetables and berries;
- Cornell Farms in Devlin which raises beef breeding stock, produces naturally raised beef products, and hosts barn concerts and other events;
- Rainy River Elk in Devlin which raises about 50 elk per year on natural grass pasture and sell elk meat products, leather goods and giftware. Farm tours are also available;
- Belluz Farms and Gammondale Farm which are both located just outside the City of Thunder Bay and feature pick your own farm fresh produce, baked goods, and farm entertainment activities; and

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

[43] For a fuller listing of fresh food / farm attractions in the Dryden area, see the local fresh food map prepared by the Cloverbelt Country Farmers' Market: http://www.dryden.ca/UserFiles/Servers/Server_6/File/Cloverbelt%20Country%20Farmers'%20Market%20Guide%20for%20Local%20Food.pdf

- Thunder Oak Cheese Farm in Thunder Bay which features a farm store where visitors can watch the cheese making process and purchase a variety of specialty cheese products.

A recent tourism market analysis for the Dryden region reported that the majority of travellers to northern Ontario engage in one or more outdoor activities while on trips (McSweeney and Associates, 2008. pg 13). The most common outdoor activity type (available in northwest Ontario) identified as the “main” reason for taking a trip in the last two years was wildlife viewing followed by fishing, and hiking/climbing/paddling (pg. 13). Participation in these types of activities suggests that equestrian activities and events (e.g. trail riding) would be a popular secondary tourism activity for outdoor traveller types (p.18). Northwestern Ontario features a number of equestrian operations that are an important component of the local recreational and tourism sector. Some examples of this activity include:

- Artimowich Quarter Horses in Dryden offers riding lessons and features Dryden’s only indoor riding arena. The arena also has facilities for conducting clinics and seminars.
- Beaver Creek Ranch near Kenora is a four season recreational equestrian centre. The ranch offers trail rides, riding lessons, summer day camps for school aged children, professional development day camps, wagon rides, pumpkin hunts, Christmas tree hunts, Easter egg hunts, and special bookings.
- Sunny Brook Farm in Kenora offers riding lessons for ages 5 and up as well as carriage tours around the city and for special events. The Sunny Brook Therapeutic Equestrian Program (STEP) is also offered at the farm. The 3 tier therapy program is for disabled persons and focuses on sport and recreation riding techniques as well as other therapeutic benefits.
- Lost Cowboy Ranch in Murillo offers customized trail riding, day rides, pony rides, riding/driving lessons, training, layovers, horse boarding and leasing, trailering, carriage service, cowboying activities and outfitting.
- Dreamfields Riding Centre in South Gillies offers lessons, trail rides, clinics, birthday parties, day camps, boarding, and horse training. The Centre features a large indoor riding arena, fenced outdoor arena, a lounge and tack room, and 150 scenic acres.
- Whispered Dreams Ranch in Kaministiqia offers trail rides and wilderness immersion retreats.
- Naughty Pine Riding Ranch in Rainy River offers trail riding, lessons, therapeutic riding, horse camp, and weekly and monthly horse boarding with access to 1000's of acres of scenic trails.

Travellers are also increasingly engaging in cultural activities and culinary touring represents a possible secondary tourism activity for outdoor travellers to the region (McSweeney and Associates, 2008. pg. 20). This includes unique opportunities that could complement the hunting industry such as a food event centered on the gathering and cooking of wild ingredients (p. 51). In its recent Tourism Development Strategy (July 2009), the Dryden Development Corporation presented several recommendations linked to the promotion of local foods including encouraging the development of culinary

tourism (through the provision of online resources and tools and working with local restaurateurs and regional food providers) and exploring the possibility of creating and hosting a National/North American wild food culinary event.

Agricultural fairs/exhibitions and farmers' markets can be viewed as another type of agri-tourism activity in northwestern Ontario and 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).[44]

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, Northwestern Ontario features several fairs/exhibitions.

Table 6.1: Agricultural Fairs in Northwestern Ontario (2009)

Name of Fair	Date (2009)	Website	Agricultural Features
Kenora Agricultural Fair	July 30-Aug. 1	www.kenorafair.ca/	Farm produce, poultry show
Canadian Lakehead Exhibition (Thunder Bay)	Aug. 5-9	www.cle.on.ca	Horticulture, livestock
Rainy River Valley Agricultural Fair (Emo)	Aug. 11-16	www.twspemo.on.ca/rrvas/index.html	Produce, draft and miniature horses, horse competitions, 4H competitions, beef, sheep, goats, grains and grasses
Dryden Fair	Aug. 27-29	www.drydenfair.ca	Agricultural displays and competition horse show, livestock, grain and forage classes, 4H
Murillo Fair	Aug. 29-30	www.murillofair.ca	Horse show, poultry and rabbit judging, milking competition, mutton busting, youth dairy show
Hymers Fall Fair	Sept. 6-7	www.hymersfair.com/	Agricultural displays, beef and dairy cattle shows, horse shows, vegetables

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

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

6.3 Farmers' Markets

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

A 2008 study completed by Farmers' Markets Ontario (FMO) demonstrates the significant economic and social benefits that markets provide to communities.[45] In 2008, the total estimated economic impact of Ontario farmers markets was at least $641 million.[46] 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%.[47] 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).[48]

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).

[45] 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.

[46] 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).

[47] 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).

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

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

Consumers are also showing a greater interest in knowing where their food is produced and who is benefiting from their spending habits. A national survey by Ipsos Reid in 2006 revealed that 70% of Canadians recognize the importance of buying locally grown/produced fruits, vegetables, and meat to help the local economy and support family farmers and the majority of Canadians (56%) always or usually check to see where their fresh fruit and vegetables come from (Ipsos Reid, Dec. 1, 2006).[49]

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).[50]

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).

An unrelated survey of customers at the Thunder Bay Country Market (TBCM) in 2008 revealed findings that are consistent with many of the 2008 FMO study findings noted

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

[50] 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).

above. The TBCM survey involved 173 randomly selected customers and revealed that:[51]

- The large majority of customers go to the market for the freshness of the products (83%) and to support local farmers and crafters (93%) and 40% of customers also value the social aspects of the market (e.g. meeting friend, speaking with vendors).
- The large majority of customers believe it is important or very important to buy local products (90%) and to know where products come from (91%).
- Almost 70% of market customers believe it is important that products are organically grown and over 60% of customers believe it is important to know the individual vendors at the market as well as the vendor's growing/producing practices.

As shown in Table 6.2, northwestern Ontario features at least 7 farmers' markets, over half of which have been operating for more than 10 years.

[51] The Thunder Bay County Market survey was undertaken by Lakehead University student Joshua Berger with liaison from Renate Nitsche. The survey was conducted on Sat. Oct. 25 and Sat. Nov. 1, 2008 between 9am and 1pm.

Table 6.2: Farmers' Markets in Northwestern Ontario

Name of Market	Community	Year Established	Location / Operating Days & Hours	Operating Months	Approx. # of Vendors	Website
Thunder Bay Farmers' Market	Thunder Bay	1988	Victoriaville Thurs. & Fri. 9am to 4pm Tues. & Fri. 9am to 4pm Wilson St. Park Sat. 9am to 11:30am Wed. & Sat. 8am to 11:30am Westminster Church Sat.1pm to 4pm Wed. 1pm to 4pm Lakehead Labour Centre Thurs. 5pm to 9pm	May to June July to Dec. May to July July to Oct. May to Oct. Aug. to Oct.	10	NA
Cloverbelt Country Farmers' Market	Oxdrift and Dryden	1988	Oxdrift Hall, Hwy 17 Sat. 9am to 12pm; and Dryden Arena Parking Lot 3pm to 6pm	June to Oct.; and July 30, Aug. 20, Sept. 10	10 - 15	www.cloverbeltfarmersmarket.ca
Clover Valley Farmers' Market	Fort Frances	1991	411 McIrvine Road Sat. 9am to 1pm	May to Oct.	25	www.clovervalleyfarmersmarket.com/
Thunder Bay Country Market	Thunder Bay	1997	CLE Dove Building Sat. 8am to 1pm Wed. 4pm to 8pm	Feb. to Dec. July & Aug.	60+	www.thunderbaycountrymarket.com
Kenora Farmers' Market	Kenora	2005	Kenora Harbourfront ~ Bernier Drive Wed. 9am to 2:30pm	May to Oct.	72	www.kenorabiz.com/farmersmrkt.htm
Northwest Farmers' Market	Sioux Lookout	2006	Rec Centre Gymnasium Fri. 10am to 2pm (bi weekly)	May to Oct.	15	www.wawataynews.ca/node/12104
Downtown Artisan & Farmers' Market	Thunder Bay	2008	507 Victoria Avenue East Sat. 9am to 4pm	Year round	NA	www.downtownmarket.org/
Rainy River Farmers' Market	Rainy River	NA	Wed. 4pm	May to Sept.	NA	NA

NA = not available.
Source: Farmers' Markets Ontario (www.farmersmarketsontario.com/Markets.cfm), the respective market websites, and the Get Fresh Local Food Guide 2009 (http://www.tbdhu.com/NR/rdonlyres/7041EB70-49BC-4036-A89D-BFEDB5B1049D/0/EatLocalGuide_2009_PROOF4.pdf).

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.

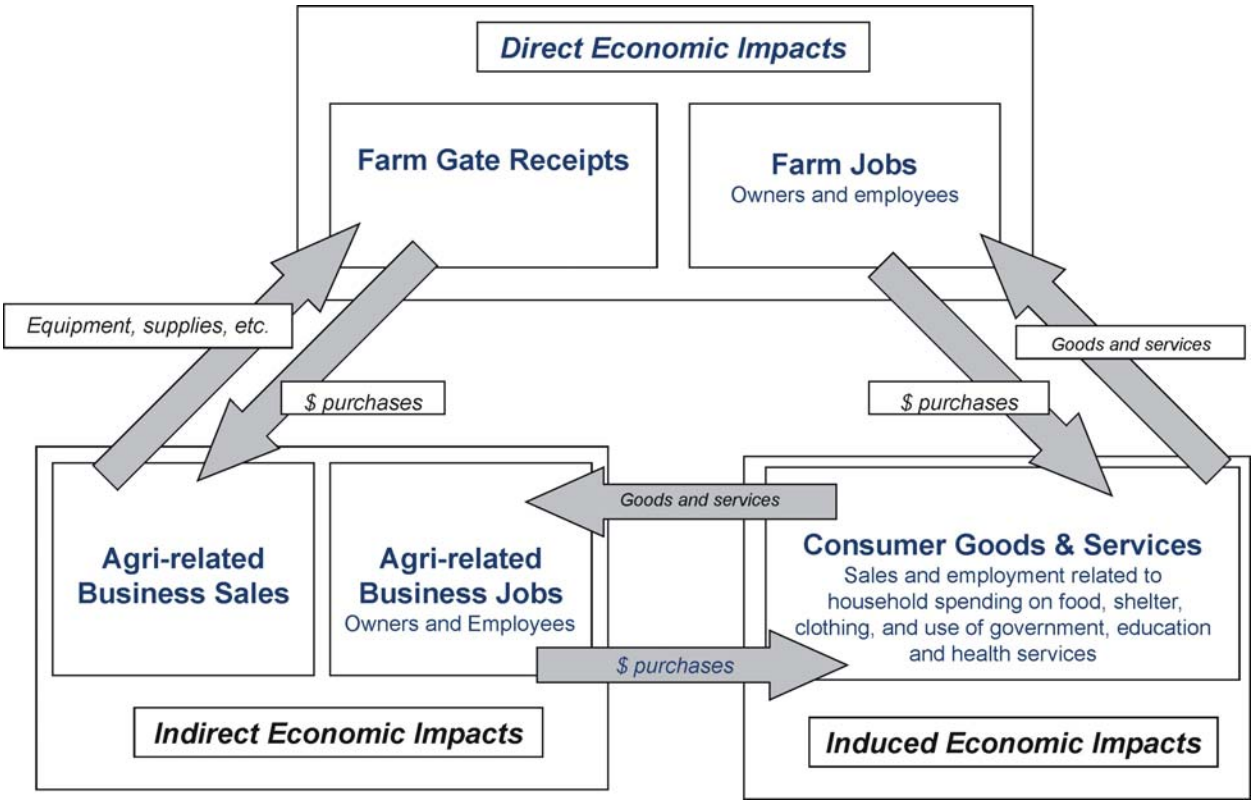
The methodology was designed to identify the value of gross sales and the jobs produced by a sample of agri-related businesses. From this sample, an estimate was produced for the total population of agri-related businesses in the Study Area. This in turn provided an estimate of the economic impact of 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.[52]

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.

[52] Farms in northwestern Ontario also deal with a number of businesses in Manitoba and the United States. Appendix C 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 [a]	
	#	%	#	%	$ 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.
[a] 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 [a]	10	6.7%
Other Services [b]	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%

[a] Professional Services includes accounting and tax services, legal services, etc.
[b] 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 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 x 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.[53] 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.

[53] 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 x 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[54] (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.[55] 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

[54] 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.

[55] 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.[56] 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.

[56] 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 [a]	$62,131,371	1,120
Indirect	$77,893,305	455
Induced		945 to 1,890
Total	$140,024,676	2,520 to 3,465

a 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 [c] (Farm gate sales)	Indirect Sales (Agri-related businesses)	Total Agri-related Sales	Sales Expenditure Multiplier
Thunder Bay, Rainy River, Kenora, Cochrane Districts	***$62.1***	***$77.9***	***$140.0***	***2.3***
Temiskaming	$44.1	$100.9	$145	3.3
Algoma Manitoulin	$31.3	$41.3	$72.7	2.3
Blue Sky Region [a]	$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 [b]	$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

[a] The Blue Sky Region includes Nipissing, Parry Sound and the eastern portion of Sudbury District, as well as the City of Greater Sudbury.
[b] 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.
[c] Direct sales values are from Statistics Canada.
Source: Cummings et al., 1998, 1999, 2000, 2001, 2003 and 2004.

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 [c]	Indirect Jobs [a] (Agri-related businesses)	Induced Jobs	Total Jobs	Employment Multiplier
Thunder Bay, Rainy River, Kenora, Cochrane Districts	***1,120***	***455***	***945 to 1,890***	***2,520 to 3,465***	***2.3 to 3.1 [d]***
Temiskaming	745	526	890	2,161	2.9
Algoma Manitoulin	805	242	1,780	2,827	3.5
Blue Sky Region [b]	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

[a] Indirect jobs are presented as full time equivalents.
[b] The Blue Sky Region includes Nipissing, Parry Sound and the eastern portion of Sudbury District, as well as the City of Greater Sudbury.
[c] Direct employment values are from Statistics Canada.
[d] 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 and 2004.

7.7 Linkages to Agri-related Businesses in Manitoba and the United States

In the process of developing the list of agri-related businesses in northwestern Ontario, it was determined that some farm operations in the region source a considerable amount of farm equipment and supplies from businesses located in Manitoba and the United States. A small survey of 10 of these businesses was conducted to gain a better understanding of the type and value of materials that farm operators in northwestern Ontario are purchasing from outside the region. Eight of the businesses are located in Manitoba and two are located in the United States.

The findings as outlined below indicate that the agriculture sector in northwestern Ontario has substantial economic ties with agri-related businesses in Manitoba and to a lesser extent the United States.

Products

Seven of the businesses interviewed sell farm equipment including tractors and farm implements while one business specializes in selling new and used parts for agricultural equipment. One of the businesses produces and sells livestock feed and the remaining business sells horse related clothing, tack and feed.

Sales

Five of the businesses reported that sales to northwestern Ontario farmers amounted to less than 5% of their total sales activity while three of the businesses reported that sales to northwestern Ontario farmers amounted to 5%-10% of their total sales activity. The remaining two businesses indicated that 35%-60% of their total sales activity was in northwestern Ontario. Five of the businesses reported on the value of their sales to farms in northwestern Ontario in 2008 – the total amount was just over $900,000.

Jobs

The ten businesses employ a total of 198 people (full time positions). Applying the share of sales in northwestern Ontario to the job figures we estimate that at least 20 full time jobs are supported by the purchases made by northwestern Ontario farmers from these ten businesses. Eight of the ten businesses anticipate that their business activity will grow in the next five years and they will need to expand their workforce.

7.8 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.
- The agriculture sector in northwestern Ontario has substantial economic ties with agri-related businesses in Manitoba and to a lesser extent the United States.
- Some businesses in the region acknowledge that a portion of the local market in northwestern Ontario has been taken by firms in Manitoba and/or southern Ontario that can provide a wider selection of products and/or better pricing. This observation

is especially common among farm equipment dealers. However, some businesses are responding to the challenge by demonstrating their competiveness in delivering products and services in a timely manner relative to firms located outside the region.

- 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 Kenora District in the City of Dryden on April 16, 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 10 agri-sector stakeholders participated in the session which included representatives from a variety of sectors including dairy, beef, hog, horse and vegetable. In some cases, the farm operators represented mixed farming operations which were engaged in two or more types of agri-related activities.

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

Agri-production and Farm Viability

Many farmers continue to struggle in obtaining a sufficient return on their products to cover operating expenses. An additional area of concern is the growing dependence on off farm work to provide extra income to supplement the farm income. As shown in the 2006 Census data, close to 60% of the farmers in Kenora District are working off the farm. Furthermore, with the added off-farm work demands farmers are finding it increasingly difficult to volunteer for activities and organizations that traditionally helped to promote agriculture in the region (e.g. 4-H, agricultural fair society). The added workload is also limiting the ability of producers to effectively organize behind agri-sector development initiatives.

Given the significant distance between northwestern Ontario and other market areas, producers view the region as a captive market area and recognize the potential for turning more consumers onto local products. Local producers also recognize the challenge and importance of consistently producing high quality products in order to ensure that consumers continue to patronize local producers. Agri-sector stakeholders identified opportunities for specialized production of fresh vegetables and meat products (e.g. pasture/grass fed beef). Non timber forest products were also identified as a potential growth sector for the region.[57]

One of the advantages of agriculture in the region as reported by the agri-sector stakeholders is the abundance of farmland that could potentially be brought back into production and the lower land prices relative to farmland prices in southern Ontario. It

[57] Non timber forest products are often described as potential engines for economic development in small communities, especially in northern rural communities and for Aboriginal Peoples (Natural Resources Canada, April 2009; Obenchain, 2000).

was also reported there are sizeable differences in the land taxes in the region depending on whether the farmland is located within an organized municipality or unorganized area. Producers also suggested that there are fewer nutrient management concerns in the region as livestock farms typically operate on larger acreages and have lower livestock densities compared to farms in southern Ontario.

Agri-sector stakeholders recognize that although the overall population in the region is declining, the Aboriginal population is growing and the opportunity exists for working in greater collaboration with First Nations communities to promote local food production initiatives.

Agri-related Business

Agri-sector stakeholders generally recognize that the local agriculture sector is not large enough to support some types of agri-related businesses and it was reported that the agri-related business sector has eroded over the years. It is also generally recognized that agri-stakeholders in region need to engage in more communication and explore cooperative strategies to take full advantage of their purchasing power. It was reported that some farmers currently coordinate the purchasing of certain farm inputs in bulk volumes such as fertilizer and save on transportation costs. Some farmers in the District also reported that they belong to *Farmers of North America,* a co-operative volume buying organization that aims to reduce input costs for member farmers and improve revenue earned on farm products.

Producers generally recognize the importance of patronizing local agri-related businesses, especially when the price and service is comparable to outside sources. However, producers also 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. It was suggested that the quality of customer service in the District has declined, particularly in comparison to farm equipment/supply dealers in the United States. Producers feel that local businesses need to do a better job marketing their products/services to the farming community and 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.

Producers in the District rely on agri-related businesses from outside the region (e.g. Manitoba, United States) to provide some of their farm inputs (e.g. farm equipment dealers and parts, dairy farm equipment and parts and supplies). Some producers in the District also reported that they use farm business experts from Winnipeg. However, agri-sector sectors believe there are opportunities for attracting agri-related business activity back to the region through the further development and and growth of local food production initiatives.

Agri-Product Marketing and Promotion

Agri-sector stakeholders reported that there is growing consumer interest in local products and producers in the region believe there are additional opportunities to develop and expand the local food system to meet the many food needs of the local population. Agri-sector stakeholders also believe that it is important to pursue partnerships with local municipalities to promote local food production, marketing and distribution. This includes examining options for establishing a Kenora District brand of fresh food items.

It was noted that the agriculture sector recently benefitted from having an intern who worked on promoting the Cloverbelt Country Farmers' Market and the role was expanded to promote local food production and consumption. However this was only a temporary position and agri-sector stakeholders believe it is important to continue work on the development of local markets for locally produced foods. This could include the development of a formal food production and marketing strategy and action plan with the engagement of local government, food producers, processors and retailers. This would 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 small convenience stores and large grocery chains) as well as alternative food outlets (e.g. farm retail outlets, farmers' markets, food basket programs).

The organizers of the Cloverbelt Country Farmers' Market recognize that variety of produce as well as freshness attracts consumers and the vendor fees at the market are affordable to facilitate producer participation. However, transportation costs can still be a significant barrier for some producers in the region who might otherwise be interested in bringing their produce to the market. It was noted that there are plans to promote the Cloverbelt Country Farmers' Market as a multifunctional activity which will include some agri-tourism events. It was also noted that although handcrafted items are permitted at the market no one has approached the market at this point to sell these types of items.

Agri-sector stakeholders in the District noted that a recent survey revealed that residents in the City of Dryden are aware of the Cloverbelt Country Farmers' Market. The market operates every Saturday in the community of Oxdrift which is a short distance outside the City of Dryden. It also operates one day a month between July and September at the Dryden Arena parking lot. Producers suggested that the location of the weekly market outside of the City is likely discouraging some residents in Dryden from attending the market. It was suggested that the City of Dryden and local agri-sector stakeholders examine the options and potential for establishing a central retail market in Dryden that would offer regular weekly hours to complement the market in Oxdrift.

As noted above, the workload of producers is increasing which is making it much more difficult to find agri-sector leaders who can organize local producers for the purpose of developing local food production, marketing and distribution strategies. It was

suggested that the development of local food production, marketing and distribution strategies requires the establishment of a funded position (e.g. local food development official/liaison) to work with a dedicated budget to oversee and bring relevant stakeholders together to develop and implement the strategy and action plan.

Access to Financing

Accessing capital continues to be a challenge for start-up and ongoing agricultural operations. Easier access to capital is needed to allow for investment and expansion of existing farms and the development of new enterprises. Previous funding made available through the Northern Ontario Heritage Fund was sited as a key support and stimulant for farm capital development projects (e.g. farm buildings, tile drainage). It was noted that the current funding priorities of NOHF place a greater emphasis on employment creation but there is still a need for funding programs that support capital projects in northern Ontario which serve to strengthen the physical infrastructure that supports and promotes modern and innovative farming practices.

Government Regulations, Policies and Support

A common concern expressed by agri-sector stakeholders in the region is that many of the government polices and support programs for agriculture are directed at models of agri-food production that are based on southern Ontario market realities. As described by one agri-sector stakeholder, the agriculture sector in Kenora District has more in common with agriculture in Manitoba than it does with agriculture in southern Ontario and the local regulations, policies and programs need to reflect this reality. For example, it was suggested that the government program that compensates producers for livestock killed by wild animals is overly complicated and time consuming and the amount of compensation is typically inadequate.

It was suggested that more focus is needed on developing polices 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. Producers would also like to see government assistance to support the creation of more direct linkages with local food retailers including grocery stores and restaurants.

Agri-sector stakeholders also stressed that over regulation of agricultural activities is limiting the potential production and consumption of local products in the region. The meat processing industry in particular is difficult to enter given the numerous, complex and costly regulations that have to be adhered to. As noted by one agri-sector stakeholder, chickens can be grown in the District but have to be shipped to Manitoba for processing and once processed the meat cannot be sold in the District (Ontario). It was also noted that the region used to have more egg production but this activity has dropped off with the requirement for eggs to be graded at licensed stations only. While agri-sector stakeholders understand the health and safety reasons behind the

regulations, the regulations represent a key obstacle to the development/expansion of meat processing facilities and the availability of locally grown foods in the region.

Agri-sector stakeholders also emphasized the importance of properly maintaining the road network to better facilitate the transportation and distribution of locally produced foods in the region and to enable local residents and tourists to access farm retail outlets and agri-tourism/entertainment activities/events.

Agri-sector stakeholders reported that agriculture is formerly recognized in the Economic Development Strategy for the City of Dryden. While the City of Dryden is interested in working with the agriculture sector, the different agricultural sectors recognize that they need to be better organized in working with the City. Again, agri-sector stakeholders emphasized the need for a funded position (e.g. local food development official/liaison) to work with a dedicated budget to oversee and bring relevant stakeholders together to develop and implement a food system strategy and action plan.

Labour, Career Opportunities and Training

In general, agri-related stakeholders in the District reported few labour challenges. However, it was suggested that more needs to be done to promote careers in agriculture in northwestern Ontario as there are very limited options for those interested in farming to gain experience. In comparison, areas of northeastern Ontario have been active in promoting agricultural opportunities (including training programs), especially in Temiskaming District which has a large agricultural sector. Industry stakeholder groups along with economic development officials and policy makers in northwestern Ontario need to review the success of strategies used elsewhere and develop a local approach to champion agri-career opportunities in the region.

It was noted that agricultural related courses in a college or university setting in northwestern Ontario are limited while the courses that are offered in southern Ontario are based on agri-food models that reflect production and market conditions in the south. Producers also identified a need for courses on short season growing/gardening practices for local soil conditions.

Agri-sector stakeholders are supportive of alternative approaches to learning about and promoting agriculture. For example, farm operators in the region are utilizing the internet to a greater extent for self education and to research the cost and availability of farm supplies/equipment as well as markets for their products. However, it was emphasized that the internet is no replacement for live demonstrations and site visits to observe best practices.

Research

Agri-sector stakeholders acknowledge the value of the research stations in the region including the agricultural research station in Emo in Rainy River and the Thunder Bay

Agricultural Research Station. It was noted that some agricultural extension services are provided by an OMAFRA representative based out of Fort Frances but some agri-sector stakeholders feel that the range of extension services is limited. It was suggested that additional research and training activities need to be developed for other crops in the region to facilitate the interest and entry of next generation farmers.

9.0 Conclusions and Recommendations

While northern Ontario as a whole experienced a 5% decline in its overall population between 1996 and 2006, Kenora District was one of the few regions in northern Ontario that experienced an increase in its population during this period.

A key feature of the employment profile in Kenora District is the high proportion of jobs in government service sectors. In 2006, approximately 35% of the jobs in Kenora District were government related (public administration, education, and health and social services) compared to 29% for northern Ontario and 22% for the province as a whole. The job growth that occurred in the District between 2001 and 2006 was mainly in the government service sectors as well as the mining sector while job losses during this period were mostly in the manufacturing, forestry/logging, and accommodation and food services sectors. Job losses in manufacturing have generally continued across Ontario since 2006 and were accelerated somewhat by the onset of the global economic recession in October 2008.

The employment profile of the agriculture sector is also undergoing a transformation as part of a long term provincial trend as farmers are increasingly working more hours off the farm to supplement their farm income. Between 1995 and 2005, the proportion of Kenora District farmers working off the farm increased from 45% to 58%. Producers often link the need for a second income to a combination of factors including stagnate 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.

The agriculture sector in Kenora District currently supports about 100 on-farm jobs. Although the Census data reveals that the number of farm jobs in the District declined by about 100 jobs between 2001 and 2006, it is important to recognize that on-farm labour activity may be underreported as a result of the increased reliance on off-farm employment.

It is also important to emphasize that the decline in agriculture employment does not reflect trends in farm productivity. Agriculture in Kenora 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, its isolation from the threat of contaminants from industrial farms; and its access to a large regional market (northwestern Ontario).

Kenora District reported about 36,000 acres of farmland and 92 farms in 2006 which collectively generated about $5.5 million in farm gate sales in 2005. The average net revenue per farm in Kenora District amounts to almost $9,000 which is just below the average for northern Ontario ($11,000). The average farm size in Kenora District is 393 acres which is close to the average for northern Ontario (412 acres) but substantially larger than the provincial average (233 acres).

Agricultural activity in Kenora District is concentrated in the southern portion of the District which features soils that are fair to moderately high in productivity and can support a range of crops with good crop and soil management practices. The southern portion of the District also features a sufficient number of frost free days to allow adapted crops to reach maturity. The soil and climate conditions in this region allow for the production of a variety of field crops including barley, wheat, oats, alfalfa, and other hay crops.

In 2006, almost 40% of the total farmland base in Kenora District was reported in crop production. Historically, the District reported a much larger area of farmland in crop production which suggests there are opportunities for further expansion of crop production in the District. The area reported in crop production in the District amounted to 17,660 acres in 1961 which dropped off to 11,546 acres by 1996 but has since started to rebound over the last decade to reach 13,777 in 2006. Based on projections from climate change models, the growing season in the southern portion of Kenora District is expected to gradually increase over the next 100 years which will result in further crop production opportunities for the region.

Kenora District farms are also involved in variety of livestock production including beef, dairy, sheep, goats, and pigs as well as farm raised bison, deer/elk and llama/alpaca. Similar to other regions in northern Ontario, Kenora District has experienced an increase in the number of horses over the last 10 years.

Agriculture in Kenora 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 Emo Agricultural Research Station, the New Liskeard Agricultural Research Station, the Thunder Bay Agricultural Research Station, the Kenora District Federation of Agriculture, the Kenora District Soil and Crop Improvement Association, and individual commodity groups.

Research initiatives undertaken by the organizations noted above and by individual farmers and First Nation communities indicate that northwestern Ontario is a source of agri-food innovation. Organizations such as the Food Security Research Network (based out of Thunder Bay) and others including the Dryden Community Garden have been particularly active in identifying and acting on food security issues and options in northwestern Ontario.

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 Kenora 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.

Value added farm activities are increasing in the region. 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 see the potential growth for a variety of local value added products including specialty meat products and specialized production of 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 storage facilities) and the government regulations that surround the establishment and operation of some facilities can be costly and complex.

1. ***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 northwestern Ontario are showing a greater interest in small scale farming as one approach to responding to the growing consumer interest in local food options. Given that small scale farms typically have less investment in their production methods compared to large scale farms, it is relatively easier for these farms to experiment with different varieties of plants and identify and assess emerging consumer interests. Agri-sector stakeholders identified the need for additional research and training activities aimed at small scale farming and short season, alternative crops.

2. ***It is recommended that local and regional research and educational institutions (e.g. Emo Agricultural Research Station, Thunder Bay Agricultural Research Station, Confederation College, Lakehead University) continue to develop and implement research initiatives and courses/programs (including distant education programs where appropriate) that are responsive to the different farm types that characterize northwestern Ontario.***

The growth in emerging sectors such as organic production and non-timber forest products is not well understood. Although it appears that the number of farms engaged in organic production in northwestern Ontario is increasing, there is no data on the area or quantity of production. Additionally, there is very limited information on the type and quantity of non-timber forest products being harvested in northwestern Ontario.[58]

3. ***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.***

A common concern expressed by agri-sector stakeholders in northwestern Ontario is that government polices and programs are typically based on models of agri-food production that feature larger scale operations and southern Ontario market realities. Agri-sector stakeholders in northwestern Ontario also emphasized the challenges that interprovincial trade barriers place on the movement of agri-food products between Ontario and Manitoba.[59] More focus is needed on developing polices and programs that address the needs/challenges of farms operating in the more localized economies that characterize northwestern Ontario.

4. ***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 polices and programs for the region including interprovincial trade regulations.***

[58] 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).

[59] A 2004 survey of 101 CEOs and leaders of small, medium, and large corporations across Canada revealed similar concerns. The survey found that almost 70% of the respondents viewed interprovincial trade barriers related to the movement of agri-food products as a serious or very serious problem (National Post/COMPAS. Sept. 2004).

5. ***It is recommended that local/regional land use policies be reviewed and modified where appropriate to ensure that policies allow for the continued development of a variety of farm type operations.***

Agri-sector stakeholders in northwestern Ontario including producers, research institutions, and agri-related businesses believe it is important to continue 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.).

6. ***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.***

7. ***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.***

Agri-sector stakeholders in Kenora District believe the Cloverbelt Country Farmers' Market concept needs to be expanded to enhance access for consumers in the City of Dryden.

8. ***It is recommended that the City of Dryden and local agri-sector stakeholders establish a weekly central retail market to complement the market in Oxdrift.***

Many businesses in northwestern 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. Manitoba, United States). 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 Kenora District 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.***

This report also recognizes and supports the action plans for the agriculture sector as outlined in the Economic Development Strategy and Implementation Plan for the City of Dryden (McSweeney and Associates. 2008).[60] In summary the action plans call for:

- collaboration between the government and agri-sector stakeholders to develop a weekly farmers' market in Dryden;
- promoting the competitive advantages of agriculture and agriculture development in the region to attract a new generation of producers, agri-food investments and possibly a university research station;
- collaboration between producers and the DDC Energy committee on projects leading to the commercialization and production of industrial bioproducts linked to biomass feedstock;
- collaboration between municipalities across Kenora District and with First Nation communities in various activities to promote the development of the agri-food sector; and
- collaboration between agri-sector stakeholders and the DDC Energy committee to plan and develop greenhouses near existing infrastructure for the production of fresh produce as well as use in tourism/recreation activities.

[60] Complete details on the action plans from the Strategy as related to the agriculture sector are presented in Appendix C.

References

Allen, T.G., Gabe, T.M., McConnon, J.C. Sept. 2006. The Economic Contribution of Agri-Tourism to the Maine Economy. University or Maine. http://www.umaine.edu/soe/publications/REPSTAFFPAPER563.pdf

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

Baldwin, D.J.B., Desloges, J.R., and Band, L.E. 2000. Physical Geography of Ontario. In: Ecology of a Managed Terrestrial Landscape [Perera, A. Euler, D., and Thompson, I. (eds.)]. UBC Press. Vancouver.

Barnett, P.J. 1991. "Quaternary Geology of Ontario". In P.C. Thurston, H.R. Williams, R.H Sutcliffe and G.M. Stott (Eds.). Geology of Ontario - Special Volume Part 2. Ontario Ministry of Northern Development and Mines.

Bendavid-Val, Avrom. 1991. Regional and Local Analysis for Practitioners , 4th ed. Westport, Connecticut: Praeger.

Bliss, Kim Jo. 2008. Summary of Emo Agricultural Research Station Results, 2008.

Bootsma, Andy. Potential Impacts of Climate Change on Agriculture in Eastern Canada: A Summary of Some Results of Recent Research. Presented at Workshop on "Climate Change and Agriculture in the Great Lakes Region: The Potential Impacts and What We Can Do". Kellogg Center, Michigan State University, East Lansing, MI. March 22, 2002.

Bootsma, Andy. March 2001. Average Crop Heat Units Available for Corn and Soybean Production in Eastern Canada. Agriculture and Agri-Food Canada. http://sis.agr.gc.ca/cansis/nsdb/climate/crop_heat/webmap.html

Bootsma, A., Gameda, S., McKenney, D.W., 2001: Adaptation of agricultural production to climate change in Atlantic Canada. Final Report for Climate Change Action Fund Project A214. Eastern Cereal and Oilseed Research Centre, Agriculture and Agri-Food Canada, Ottawa.

Brown, D.M and Bootsma, A. 1997. Crop Heat Units for Corn and Other Warm Season Crops in Ontario: Factsheet. Ontario Ministry of Agriculture, Food and Rural Affairs. http://www.omafra.gov.on.ca/english/crops/facts/93-119.htm

Bradfield, Michael. 1988. Regional Economics: Analysis and Policies in Canada. Toronto: McGraw-HIll Ryerson Ltd.

Brown, D.M., A. Bootsma and R de Jong. Analysis of Growing Season Water Deficits in Ontario. Land Resource Science, University of Guelph.

Canadian Broadcasting Corporation. June 12, 2009. Freshness, environmental care main drivers of food purchases: survey. http://www.cbc.ca/canada/prince-edward-island/story/2009/06/12/food-environment-freshness-survey-ipsos.html?ref=rss

Canadian Broadcasting Corporation. July 14, 2009. Buy local push prompts Ontario grocers to go independent. http://www.cbc.ca/consumer/story/2009/07/14/f-grocery-stores-independent-buy-local-meat-produce.html

Colombo, S.J., McKenney, D.W., Lawrence, K.M. and Gray, P.A. 2007. Climate Change Projections for Ontario: Practical Information for Policymakers and Planners. Ontario Ministry of Natural Resources.

Chronicle-Journal. March 23, 2009. There's life on the farm. Thunder Bay

Chronicle-Journal, March 22, 2009. A look at producing food in the North. Thunder Bay

Chronicle-Journal, April 16, 2009. Homegrown Goodness. Thunder Bay

Cummings, H. 2005. Ontario's Agricultural and Rural Economy: Today and Tomorrow? A Qualitative and Quantitative Perspective. University School of Rural Planning and Development. Unpublished report. University of Guelph. Guelph, Ontario.

Cummings and Associates. 2003. Growing Food and Economy: Economic Impact Study of the Agriculture and Food Related Sectors in Waterloo Region. Harry Cummings and Associates. Unpublished report. Guelph, Ontario.

Cummings and Associates. 2002. Economic Impact Study of the Agriculture Sector in Algoma – Manitoulin. Harry Cummings and Associates. Unpublished report. Guelph, Ontario.

Cummings and Associates. 2001. Economic Impact Study of the Agriculture Sector in the Blue Sky Region. Harry Cummings and Associates. Unpublished report. Guelph, Ontario.

Cummings and Associates. 2000. The Economic Impacts of Agriculture on the Economy of Perth County. Harry Cummings and Associates. Unpublished report. Guelph Ontario.

Cummings and Associates. 2000. The Economic Impacts of Agriculture on the Economy of Lambton County. Harry Cummings and Associates. Unpublished report. Guelph Ontario.

Cummings and Associates. 1999. Economic Impact of Agriculture on the Economy of Simcoe County. Harry Cummings and Associates. Unpublished report. Guelph Ontario.

Cummings, Harry and Vince Deschamps. 1999. Economic Impact of Agriculture on the Economy of Prescott, Russell, Stormont, Dundas, and Glengarry Counties. University School of Rural Planning and Development. Unpublished report. University of Guelph. Guelph, Ontario.

Cummings, Harry, Karen Morris and Dan McLennan. 1998. Economic Impact of Agriculture on the Economy of Huron County. University School of Rural Planning and Development. Unpublished report. University of Guelph. Guelph, Ontario.

Cummings, Harry, Galin Kora and Don Murray. 1999. Farmers' Markets in Ontario and Their Economic Impact. University School of Rural Planning and Development. Unpublished report. University of Guelph. Guelph, Ontario.

Davis, H. Craig. 1990. Regional Economic Impact Analysis and Project Evaluation. Vancouver: University of British Columbia Press.

Dryden Development Corporation (DDC) Tourism Development Strategy. July 13th, 2009.

Easton, R.M and J.A. Fyon. 1991. "Metallogeny of the Grenville Province." In P.C. Thurston, H.R. Williams, R.H Sutcliffe and G.M. Stott (Eds.). Geology of Ontario - Special Volume Part 2. Ontario Ministry of Northern Development and Mines.

E.G. Gregorich, D.A. Angers, C.A. Campbell, M.R. Carter, C.F. Drury, B.H. Ellert, P.H. Groenevelt, D.A. Holmstrom, C.M. Monreal, H.W. Rees, R.P. Voroney, and T.J. Vyn. Agriculture and Agri-Food Canada. Changes in Soil Organic Matter. August 2003. http://res2.agr.gc.ca/publications/hs/chap05_e.htm

Enigma Research Corporation. 2009. The Economic, Social and Educational Benefits of Large, Medium and Small Fairs and Exhibitions in Canada. http://canadian-fairs.ca/CAFE_Economic_Education_and_Social_Benefits_Study.html

Environics Research Group, September 2000. Survey of Farmers, Ranchers and Rural Landowners: Attitudes and Behaviours Regarding Land Stewardship.

Environics Research Group, June 2003. National Survey of Rural Landowners: Attitudes and Behaviours Regarding Land Stewardship.

Experience Renewal Solutions Inc. January 2009. Farmers' Markets Ontario Impact Study 2009 Report. http://www.farmersmarketsontario.com/Documents/FMO%20Impact%20Study%20-%20Overview%20and%20Highlights.pdf

Experience Renewal Solutions Inc. January 2009. National Farmers' Market Impact Study 2009 Report. http://www.farmcentre.com/File.aspx?id=541aadd6-20ce-4324-8955-46a21ff0e95b

Faas, Ronald C. 1980. "Coping with Growth: What Does the Impact Statement Say About Economic Impacts." Corvallis, Oregon: Western Rural Development.

Feenstra, G.W. 1997. Local food systems and sustainable communities. American Journal of Alternative Agriculture. Volume 12, No. 1, pp.28-36.

Josling, L.T. 1996. An Empirical Study of the Interdependence Among Agriculture and Other Sectors of the Canadian Economy - An Input-Output Model. Agriculture Economics Research Council of Canada.

Hegerl, G.C., F. W. Zwiers, P. Braconnot, N.P. Gillett, Y. Luo, J.A. Marengo Orsini, N. Nicholls, J.E. Penner and P.A. Stott, 2007: Understanding and Attributing Climate Change. In: *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to*

the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

Hoffman, D.W. and H.F. Noble. 1975. Acreages of Soil Capability Classes for Agriculture in Ontario. Ontario Ministry of Agriculture and Food, Rural Development Branch and Department of Regional Economic Expansion, Canada.

Ipsos Reid. Dec. 1, 2006. Canadians See Many Benefits of Locally Grown Food http://www.ipsosna.com/news/pressrelease.cfm?id=3298

Leones, J., Dunn, D., Worden, M. and Call, R.E. June 1994. Agricultural Tourism in Cochise County, Arizona Characteristics and Economic Impacts. Michigan State University http://web1.msue.msu.edu/imp/modtd/33839801.html

McSweeney and Associates. November 2008. Dryden Region Tourism Market Analysis.

McSweeney and Associates. October 2008. Economic Development Strategy for the City of Dryden.

Moazzami, B. 2006. An Economic Impact Analysis of the Northwestern Ontario Forest Sector. Northwestern Ontario Forest Council.

Murray, Don. 2000. "Agricultural Exports and their Impact on the Local Economy: A Case Study of Huron County." Unpublished M.Sc. Thesis, University School of Rural Planning and Development, University of Guelph, Guelph Ontario.

National Post/COMPAS. Sept. 2004. Inter-Provincial Trade Barriers: Seriously Damaging to the Economy and Standard of Living and Almost as Harmful as Canada-U.S. Trade Barriers. http://www.compas.ca/data/040913-InterProvTrade-PB.pdf

Northern Ontario Business. June 22, 2009. Safeway clears space for local farmers.

Northwest Link. March 2009. Northwestern Ontario Soil and Crop Improvement Associations.

Northwest Link. April 2009. Northwestern Ontario Soil and Crop Improvement Associations.

Odyssey Report: An Industry Quest for Solutions. Sept. 2002. Agricultural Adaptation Council.

Ontario Association of Agricultural Societies. Listing of Agricultural Fairs. www.ontariofairs.com/oaas/fairs/

Ontario Cattlemen's Association. Press Release - September 2, 2003. Beef farmers grateful for continued provincial support. http://www.cattle.guelph.on.ca/communications/2003/provincialsupport.html

Ontario Corn Producers Association. Corn and Climate Change. January 2004. http://www.ontariocorn.org/envt/envclim.html

Ontario Ministry of Agriculture, Food and Rural Affairs. April 2009. Ontario Market Investment Fund: First Nation Greenhouse Research. http://www.omafra.gov.on.ca/english/food/domestic/omif/omif.html#northern

Ontario Smart Growth – Shape the Future. 2003. Northeastern Ontario Smart Growth Panel. Queen's Printer for Ontario.

Organization for Economic Co-operation and Development, 2009. The Role of Agriculture and Farm Household Diversification in the Rural Economy of Canada. http://www.oecd.org/dataoecd/35/33/43245349.pdf

Parson, H.E. *Regional Trends of Agricultural Restructuring in Canada.* Canadian Journal of Regional Science. XXII:3. Autumn 1999, 343-356.

Places to Grow: Towards a Growth Plan for Northern Ontario - A Discussion Paper. 2008. Government of Ontario.

Poole, Eric, Ronald Rioux and Claude Simard. 1994. "The Input-Output Model and Economic Policy". Policy Options. Vol. 15 (10), 28-31.

Qian, B., Hayhoe, H. and Gameda, S. Developing Daily Climate Scenarios for Agricultural Impact Studies. Presented at the 16th Conference on Climate Variability and Change, January 9, 2005. San Diego, CA.

Rosehart, R.G. February 2008. Northwestern Ontario: Preparing For Change – Northwestern Ontario Economic Facilitator Report.

Smit, B., Brklacich, M., Stewart, R., McBride, R., Brown, M., Bond, D. 1989. *Sensitivity of crop yields and land resource potential to climatic change in Ontario, Canada.* Climate Change. Vol. 14 (2), 153-174.

Statistics Canada. 1996. Census of Agriculture. Ottawa, Ontario.

Statistics Canada. 1996. Population Profile of Canada. Supply Services. Ottawa, Ontario.

Statistics Canada. 2001. Census of Agriculture. Ottawa, Ontario.

Statistics Canada. 2001. Population Profile of Canada. Supply Services. Ottawa, Ontario.

Statistics Canada. 2006. Census of Agriculture. Ottawa, Ontario.

Statistics Canada. 2006. Population Profile of Canada. Supply Services. Ottawa, Ontario.

Statistics Canada. The Daily: Farmers Leaving the Field, Feb. 22, 2002.

Statistics Canada. The Daily: Off Farm Work by Farmers, March 9, 2009.

Statistics Canada. Aug. 7, 2009. Labour Force Survey July 2009. http://www.statcan.gc.ca/subjects-sujets/labour-travail/lfs-epa/lfs-epa-eng.htm

Statistics Canada. July 10, 2009. Labour Force Survey June 2009. http://www.statcan.gc.ca/daily-quotidien/090710/dq090710a-eng.htm

Statistics Canada. June 2009. Northwest Ontario Labour Market Monitor: Service Canada. http://www.servicecanada.gc.ca/eng/on/offices/2009lmb/northwest.shtml

Statistics Canada. June 2009. Northeast Ontario Labour Market Monitor: Service Canada. http://www.servicecanada.gc.ca/eng/on/offices/2009lmb/northeast.shtml

Statistics Canada. January 2009. Northwest Ontario Labour Market Monitor: Service Canada. http://www.servicecanada.gc.ca/eng/on/offices/1208lmb/northwest.shtml

Suthey Holler Associates. May 2006. Economic Contribution of the Equine Industry to Northeast Ontario.

Thunder Bay Country Market Survey. Nov. 2008. Unpublished. The survey was undertaken by Lakehead University student Joshua Berger with liaison from Renate Nitsche.

Thurston, P.C. 1991. “Geology of Ontario.” In P.C. Thurston, H.R. Williams, R.H Sutcliffe and G.M. Stott (Eds.). Geology of Ontario - Special Volume Part 1. Ontario Ministry of Northern Development and Mines.

United Nations Environment Program. 2009. UNEP Climate Change Strategy. http://www.unep.org/climatechange/Publications/Publication/tabid/429/language/en-US/Default.aspx?BookID=4006

Walton & Hunter Planning Associates, Betsy J. Donald, J. Ross Raymond & Associates Ltd. November, 1999. *Greater Toronto Area – Agricultural Economic Impact Study.* Commissioned by the GTA Federations of Agriculture Project Management Committee.

Wolfe, Christian Wolfe, Statistics Canada, with files from Vicky Cano Lamy, Agriculture and Agri-Food Canada. 1999. *What exactly is "value added" anyway?* http://www.statcan.gc.ca/kits-trousses/agric/edu04_0149a-eng.htm

Whyte, Donald R. 1978. “Rural Canada in Transition.” In Tremblay, M.A., and W.J. Anderson (Eds.). Rural Canada in Transition. Ottawa: Agricultural Economics Research Council.

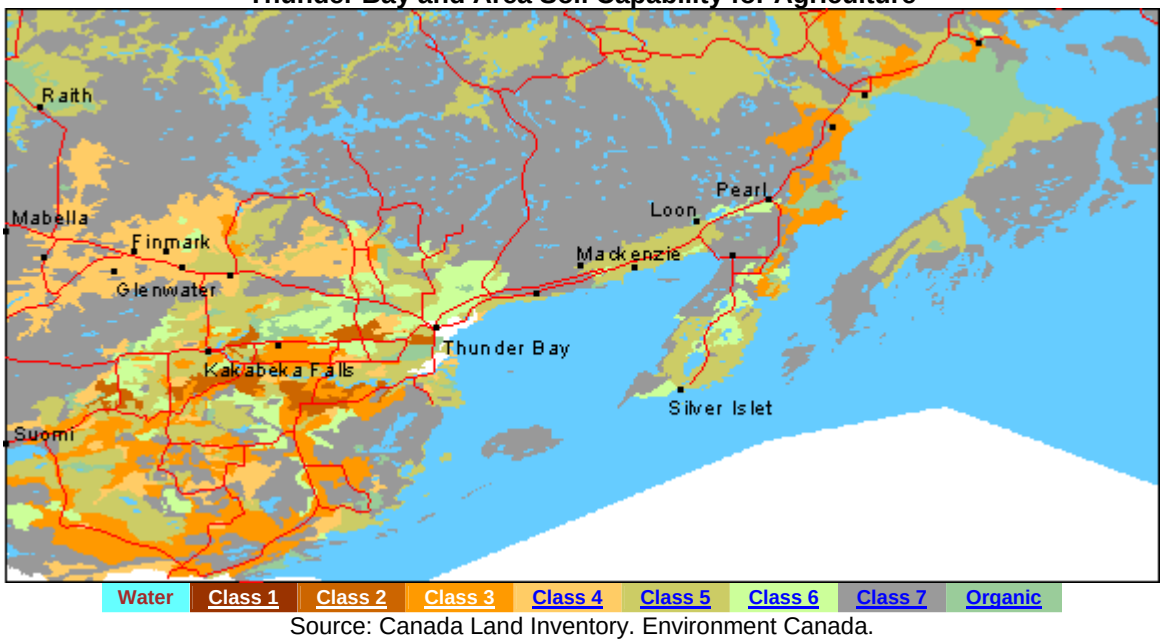
Appendix A: Soil Capability for Agriculture in Northwestern Ontario

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).

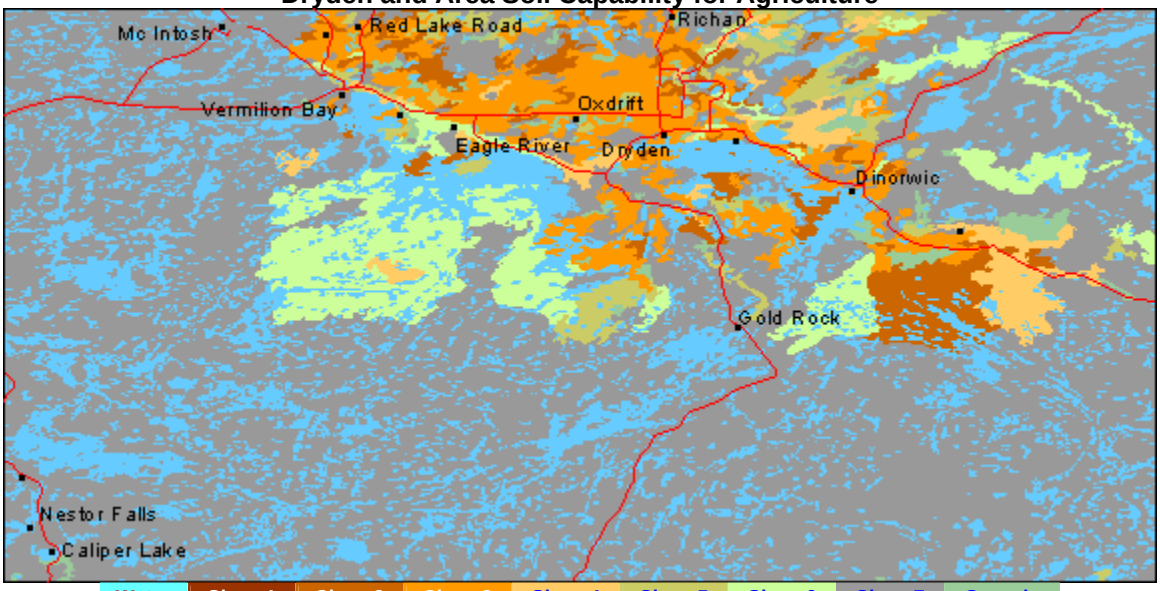
Source: Canada Land Inventory. Environment Canada

Thunder Bay and Area Soil Capability for Agriculture



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

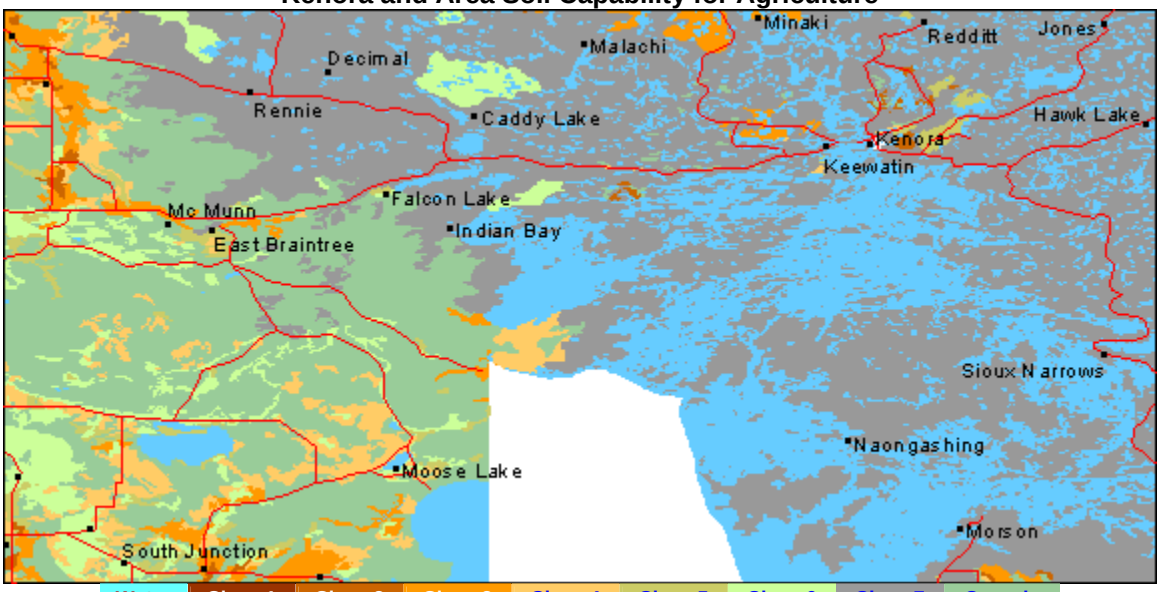
Dryden and Area Soil Capability for Agriculture



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

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

Kenora and Area Soil Capability for Agriculture



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

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

Fort Frances and Area Soil Capability for Agriculture

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

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

Rainy River and Area Soil Capability for Agriculture

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

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

Appendix B: 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.

Appendix C: Action Plans Related to Agriculture as Presented in the Economic Development Strategy and Implementation Plan for the City of Dryden October 2008

The following action plans were identified for the Agriculture sector:

1. That the agriculture co-op/corporation, the Clover Belt Farmers' Market, the Dryden Community Garden committee, the Regional Food Security committee, and the Northwestern Health Unit, with the support of the City, collaborate to develop one weekly indoor (or sheltered outdoor) regional farmers' market inviting farmers and artisan food producers from other districts to sell their products in Dryden, thereby ensuring a larger supply of available products at the market and attracting more shoppers to Dryden.

2. That the Dryden Development Corporation (DDC) market the competitive advantages of agriculture and agri-food development in the Dryden area to attract a new generation of producers, agri-food investments and the possibility of a university research station. As a first step, it is recommended to consult various universities that are involved in agricultural/bioscience research to explore the possibility of a satellite campus in the Dryden area.

3. That the DDC, the agriculture co-op/corporation, and the DDC Energy Committee collaborate on projects leading to the commercialization and production of industrial bioproducts stemming from biomass feedstock.

4. That the DDC support the formation of a Dryden area agriculture co-op/corporation with members that are producers from the Dryden and Kenora unorganized area (including First Nation producers such as Wabigoon Lake Ojibway Nation), strategic stakeholders, and supporters of agriculture and agri-food development, to:

   a. Identify and establish needed facilities, processes and services (such as insurance, distribution, cold storage and marketing) to be available to all members at a reasonable cost;

   b. Share/exchange knowledge and explore new opportunities (i.e. anaerobic digestion);

   c. Host conferences and invite expert speakers to inform members and guests on the latest agricultural/agri-food innovations, products, and emerging markets;

   d. Liaise with other regional agriculture/agri-food producers and organizations to explore opportunities;

   e. Plan and host educational farm tours and other agri-tourism events with the collaboration of the City, educational organizations, and other stakeholders;

   f. Explore agri-food opportunities with First Nations in order to substitute the importation of high priced foods to Northern communities with locally produced foods;

   g. Explore and educate members on new market opportunities such as emerging ethnic food markets and distant markets (i.e. Asia and Latin-America);

   h. Explore with the support of the DDC and the City, and with the collaboration of the Northwestern Health Unit, the following economic opportunities:

i. Agricultural cottage industries (also referred to as artisan foods such as cheese, jams, breads);
ii. Farm-gate sales (also known to be a tourism attraction);
iii. “Pick your own” produce (i.e. strawberries, blueberries);
iv. Community Shared/Supported Agriculture programs6 (CSA) and good food baskets;
v. Buy local campaign: consumption of locally-grown produce, artisan foods and added-value food products;
vi. Have Dryden restaurants regularly feature or highlight dishes on their menus that are made from local food products (a culinary tourism practice profitable to restaurateurs as visitors will gladly pay a premium for the tasting experience);
vii. The sale of local produce, artisan foods, and food vendors using local products at festivals, sports events and farmers’ markets;
viii. The availability of local produce and food products in Dryden stores;
ix. Encourage publicly-funded institutions to purchase locally-grown foods (this should also be extended to include the purchase of local non-food products such as cleaning supplies).

The following action plans were identified for the Renewable Energy sector and have an agricultural component:

1. That the City support the DDC Energy Committee in their efforts to attract and advance renewable energy investment opportunities by:

a. Amending the Official Plan to support sustainable development;

b. Lobbying the Ministry of Energy to remove certain constraints to the development of alternative energy such as the blanket restrictions in the Renewable Energy Standard Offer Program (RESOP); the “reserve access” under the Northern Hydro Incentive program; and the limitations of the transmission system;

c. Exploring the possibility of owning a renewable energy production facility (i.e. photovoltaic solar) in order to divert the surplus revenue generated by the sale of power to the grid towards subsidizing energy costs as an incentive to attract new businesses and to support the growth of existing businesses.

2. That the DDC consider becoming a member of key alternative energy associations and organizations (such as the Ontario Sustainable Energy Association, the Ontario Centre of Excellence for Energy, etc.) in order to join forces with a larger organization petitioning for a better business environment; to gain knowledge of new technologies and programs; and to open the doors to partnership opportunities in research or other.

3. That the agriculture co-op/corporation and the DDC Energy Committee explore and identify viable opportunities for renewable energy suitable for agricultural producers such as anaerobic digesters.

4. That the DDC identify and market the competitive advantages of renewable energy generation in Dryden to continue to attract investment.

5. That the agriculture co-op/corporation and the DDC Energy Committee with the support of the City of Dryden, and other key stakeholders, collaborate to plan and develop greenhouses

(perhaps next to the Barclay pumping station and the Trans-Canada pipeline using its exhaust to heat the greenhouses). It is recommended that a section of one greenhouse be developed into a public tropical garden sanctuary that would serve as a tourism attraction open to visitors year round. It is recommended that the remaining greenhouse spaces be used for economic opportunities such as supplying the regional need for fresh produce in winter months. How to lease the space will require careful consideration (i.e. lease out rows to members of the agriculture corporation, including First Nation members).

Source: City of Dryden: Economic Development Strategy and Implementation Plan. October 7, 2008. McSweeney and Associates.