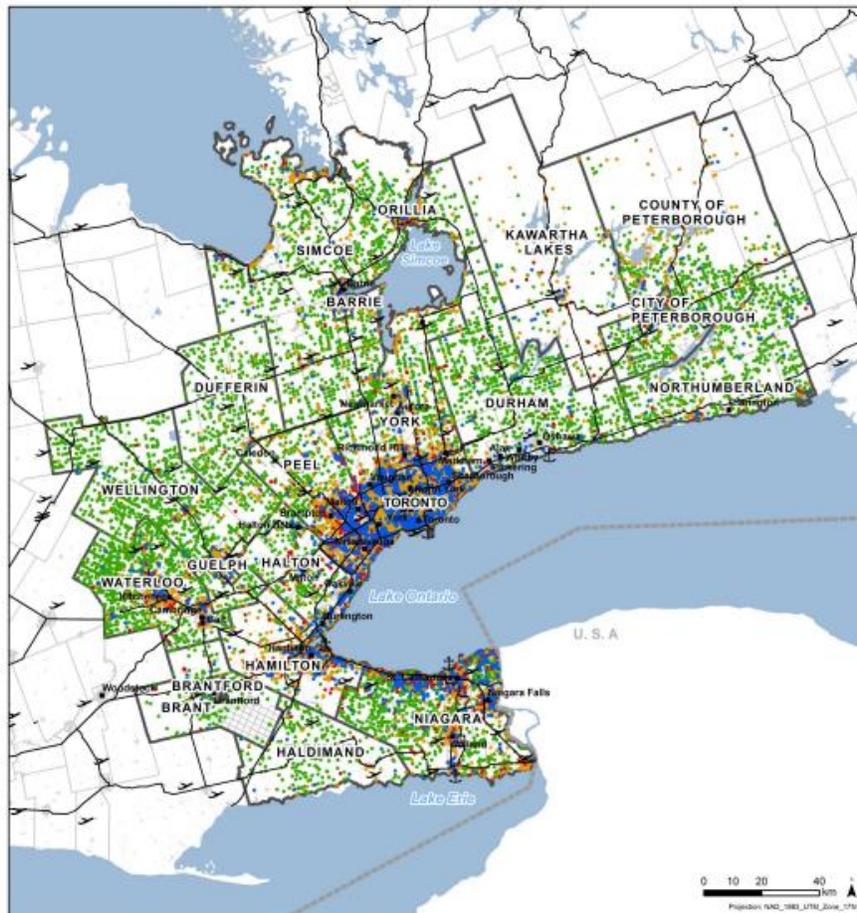


# ANALYSIS OF FOOD AND FARMING ASSETS IN THE GREATER GOLDEN HORSESHOE



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## Executive Summary

The analysis of the food and farming sector in the Greater Golden Horseshoe (GGH) area has re-confirmed that it is a diverse and dynamic sector that contributes a significant benefit to the region and the overall economy. The agriculture value chain included in the asset mapping database includes the full spectrum, from primary production agriculture and services to agriculture through to food services such as restaurants and institutions. Building upon the information and analysis presented in two previous reports (2013 and 2015 Agri-Food Asset Mapping for The Golden Horseshoe reports), this report analyzes over 50,000 assets from the asset mapping database, including farms and agri-food businesses from all municipalities in the GGH. In addition, this analysis also uses non-spatial datasets on employment trends and industry size from the Ontario Ministry of Agriculture, Food, and Rural Affairs (OMAFRA) EMSI Analyst tool version 2015.1, as well as Statistics Canada to understand the trends and structure of the agri-food value chain in the region.

### Agri-Food Employment

An analysis of both National Occupational Classification for Statistics (NOC-S) occupational data as well as North American Industry Classification System (NAICS) industry classification data revealed a few common trends in the agri-food sector:

- The GGH accounts for roughly 65% of the total agri-food jobs in the province of Ontario.
- Both farming and food processing, which are crucial initial steps in the agri-food value chain, show no net growth in jobs in the 2010-2015 time period. While it is a positive that there is no net loss in jobs, these initial stages of the value chain have not kept pace with the overall sector development.
  - Farm related jobs in the GGH decreased slightly which contrasts the previous Golden Horseshoe (GH) report in 2015 that showed a significant decrease in farm related jobs in that area. Food processing shows significant increases and decreases as the industry restructures to meet changing consumer needs and international trade forces and competition. In some cases, these decreases may be due to automation or increased productivity within a particular sector (such as increasing farm size or food plant automation).
- Distribution, which includes food and beverage merchant wholesalers, increased significantly by 18%, which added 6,222 jobs. This growth is likely due for the most part to the expanding population base which drives overall food demand and possibly from increased food imports.
- Retail and food service-related occupations, called the “Access” step in the value chain for this analysis, make up the largest portion of overall employment in the sector at 68% of total jobs. Employment grew between 2010 and 2015 by 13%, adding 54,251 jobs in the GGH. Overall population growth is a major factor that impact the growth of these jobs. In some cases, these jobs are not directly linked back to the rest of the agri-food value chain

in the GGH region specifically, so they do not have the same multiplier effect as agri-food jobs earlier in the value chain.

Economic development efforts are likely better focused at the primary farm production and processing levels of the value chain which can grow the local economy by serving regional, provincial, national and export markets. This increases the resiliency of the local economy by diversifying the sources of wealth.

The following figure and graphic illustrate a summary of the overall employment trends for the four main steps in the GGH agri-food value chain:

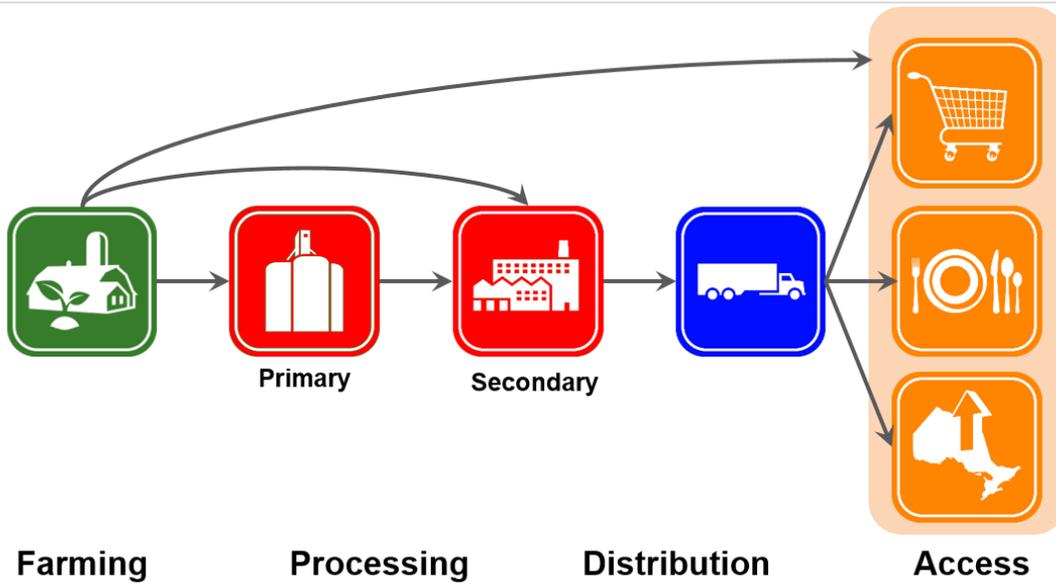
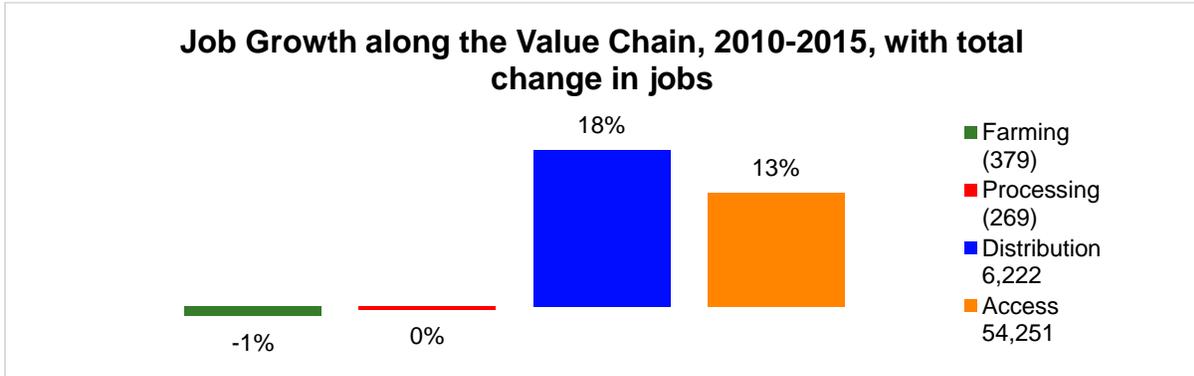


Figure 10

Farm related jobs decreased slightly in the GGH (no growth)  
Farms jobs in the GH decreased during the same period (2015 report).

Food processing employment is also stable (no growth) in the GGH

Employment in distribution and food access is increasing  
Growth is likely a function of overall population growth, especially in urban areas.

**These initial steps of the value chain are crucial and drive significant economic impact.**

The following map illustrates the GGH asset map database showing all of the business locations data points separated into the four main steps in the value chain by three digit NAICS code.

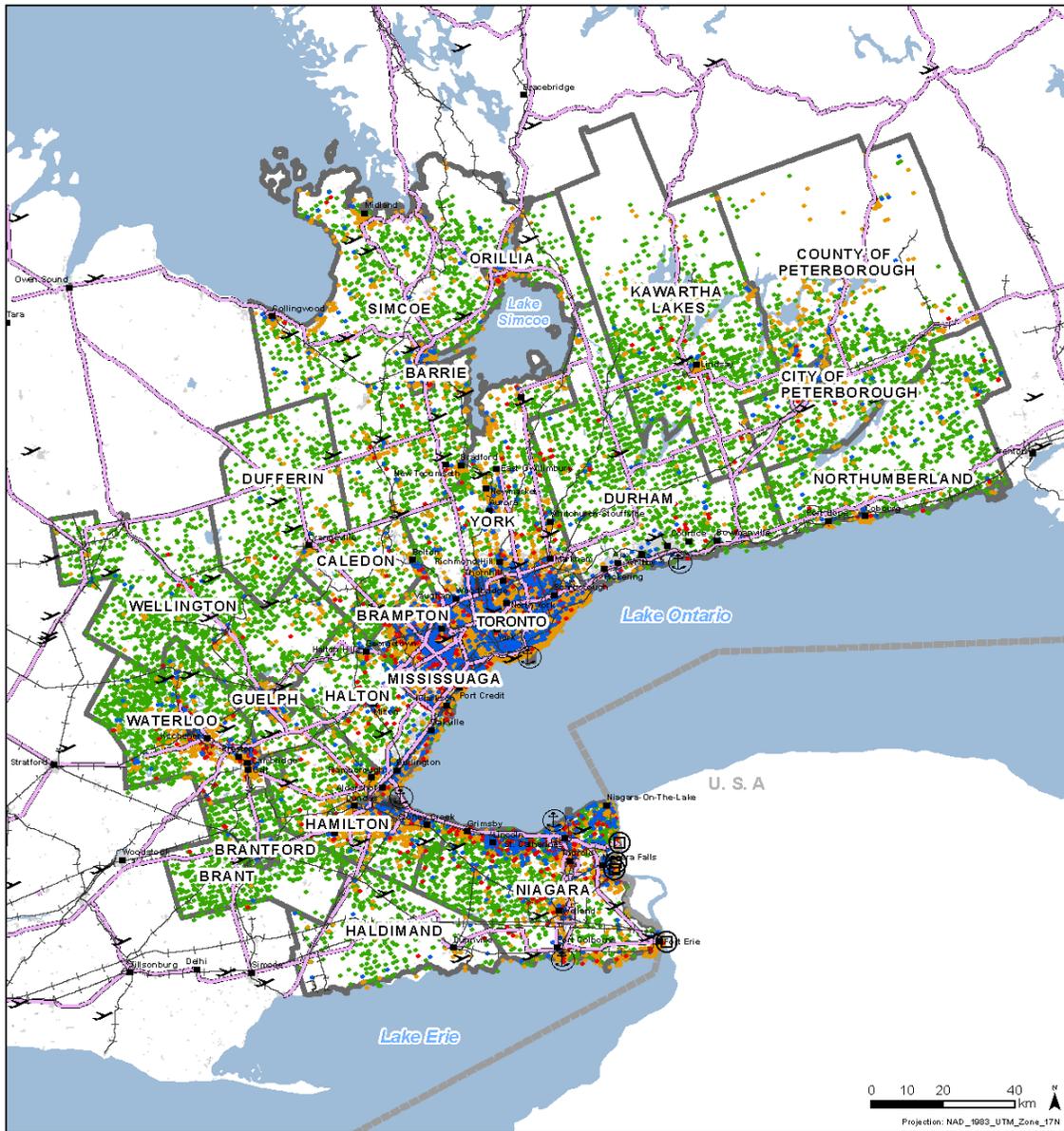


Figure 11: Agri-food asset by industry type within the Golden Horseshoe.

<b>Farming (Green)</b>	Primary production	Codes: 111, 112, 113
<b>Processing (Red)</b>	Food and beverage processing	Codes: 311, 312
<b>Distribution (Blue)</b>	Food wholesaling and distribution	Codes: 411, 413, 493
<b>Access (Orange)</b>	Grocery stores and restaurants	Codes: 444, 445, 447, 721, 722, 711, 712, 713

## Sector Competitiveness and Growth

Two metrics that can be used to provide a view of the industry's performance over time are Location Quotient and Competitive Effect. Provincial Location Quotient (PLQ) compares the relative concentration in the local region to the concentration in the provincial economy. The Competitive Effect (CE) is being used as a relative measure of performance of an industry over a period of time. The following figure shows the PLQ and CE for the key agri-food sectors. The size of the bubbles indicates the number of jobs within the industry. Grocery stores and restaurants have been removed from this analysis in order to show more detail for other sectors.

Using these two indicators, sectors can be divided into four general categories:

- Gaining (top left quadrant, yellow)
- Thriving (top right quadrant, green)
- Diminishing (bottom left quadrant, red)
- Moderating (bottom right quadrant, orange)

This analysis tells a fairly positive story with a few exceptions. One quarter of the sub-sectors and five of the seven largest are in the “Thriving” quadrant. The strongest sub-sectors are Food Wholesale and Special Food Services. Farms are the second largest employer, but are in the “Diminishing” quadrant. Fruit and Vegetable Preserving sector is concerning, given its strategic importance to the agri-food sector in the region. On a percentage basis this sector had the most significant under performance by a wide margin. The Meat Product Manufacturing sector is also underperforming relative to the sector in the rest of the province.

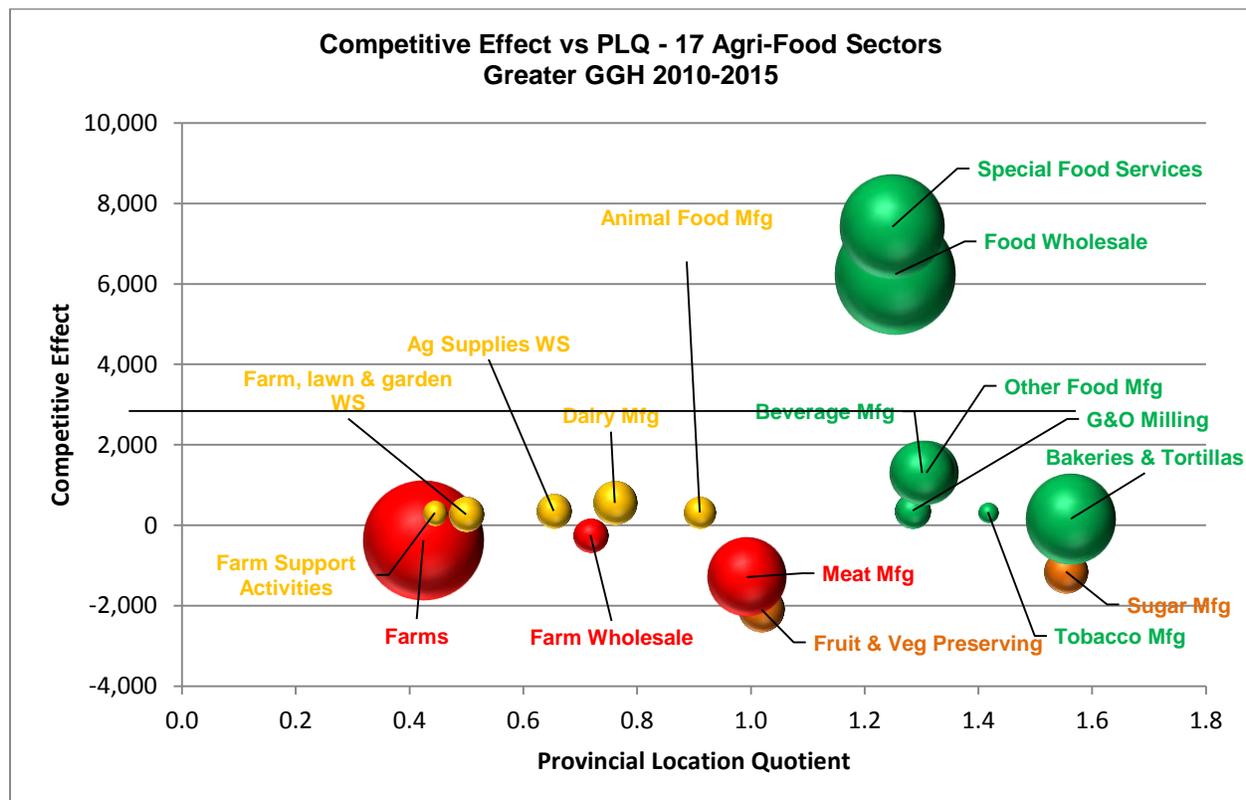


Figure 14

## Conclusion and Recommendations

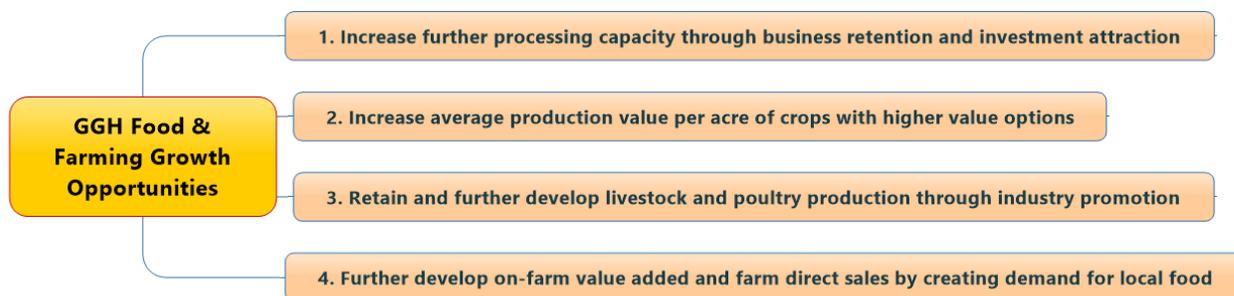
Our analysis has revealed many opportunities for economic development of the agri-food sector in the GGH Region. Each of these opportunities to grow the cluster is based on an overarching theme of trying to increase employment, investment and production value on this high value land base, but doing so in a sustainable manner.

On average, the GH Region already produces higher value crops than most Ontario farms due to quality soils, great climate and proximity to market<sup>1</sup>. Similar to the previous GH analysis, our conclusion is that further increasing the average production value per acre should be a key economic development focus for the GGH Region.

The increased presence of livestock and poultry production as you move farther from the built up areas offers an additional opportunity that is not as prevalent closer to urban areas of the GTA. Livestock production creates a higher economic value compared to producing field crops on the same land base<sup>2</sup>. Retaining the current livestock production base will be a key factor in achieving agri-food growth in the GGH.

Food, beverage and bio-product processing operations also add additional value to the agricultural products produced on farms and create significant economic impact through domestic sales of food ingredients and finished products, bio-products as well as export sales. While the sector has enjoyed a strong presence in this area, some key sectors like fruit and vegetable processing have a significantly reduced footprint due to competitive pressures. As the North American industry goes through a major re-structuring, there is a need to retain existing large processing operations (business retention and expansion) as well as some opportunities for new investment attraction in various sectors. In addition, economic development efforts to support smaller, niche operations (small to medium enterprises and on-farm processing) will greatly benefit the GGH region.

In conclusion, the following four strategies offer significant growth opportunities for the food and farming sector in the GGH Region:



<sup>1</sup> Agriculture By The Numbers, GHFFA information sheet 2014

<sup>2</sup> for example a 100 acre hog farm has a greater economic impact compared to a 100 acre grain farm because of higher sales, more people involved on a daily basis, trucking, veterinary and other services



## Introduction and Approach

This report of Ontario's Greater Golden Horseshoe (GGH) area includes an analysis of trends in employment and occupations, as well as a broadened analysis and mapping of assets in several key subsectors in the agri-food value chain. The GGH is located in southern Ontario and covers almost 32,000 square kilometers which includes large cities, rapidly growing suburban municipalities, mid-sized centers, small towns and villages, and rural areas. It is Canada's largest urbanized area and the economic engine of Ontario. Economic activity in the GGH generates approximately two-thirds of Ontario's and one-fifth of Canada's GDP. The GGH contains some of the highest-quality farmland in Canada and its southern location ensures a longer growing season than in other parts of the country. Administratively, the GGH consists of 21 upper- and single-tier municipalities and 89 lower-tier municipalities, for a total of 110 separate municipal jurisdictions in the GGH.<sup>3</sup>

Building upon the information and analysis presented in two previous reports (2013 and 2015 Agri-Food Asset Mapping for The Golden Horseshoe reports), this report expands the analysis to Ontario's Greater Golden Horseshoe. The asset mapping database has recently been expanded to include data from all municipalities in the GGH, and currently contains over 50,000 farms and agri-food businesses in the region.

In addition to the recently expanded asset mapping database, this analysis also uses non-spatial datasets from the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) EMSI Analyst tool version 2015.1, as well as Statistics Canada to understand the trends and structure of the agri-food value chain in the region. The data available at the regional municipality level includes employment trends by National Occupation Classification System (NOC-S) and industry size distribution by North American Industry Classification System (NAICS) code. The employment trends by NOC-S code can be used as a reasonable substitute for overall economic activity and thus provides an indication of the health of the agri-food sector in the region. The combination of spatial data and maps with economic information, such as job trends, provides for a rich analysis and understanding of the gaps and opportunities for economic development of the agri-food sector in the GGH.

As defined by the GHFFA steering committee, the agriculture value chain for this project includes the full spectrum: from primary production agriculture and services to agriculture, through to food services such as restaurants and institutions. A list of the NAICS and NOC-S codes used for this analysis is included in the appendix of this report.

### Approach

The GHFFA Action Plan 2021, developed in 2011 by a steering committee from the Greater Toronto Area Agricultural Action Committee, was created to help provide a outline for maintaining and strengthening a prosperous, integrated food and farming sector in the Golden

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<sup>3</sup> Neptis Foundation, Implementing the Growth Plan for the Greater Golden Horseshoe. Toronto: N.p., 2013. Web. 13 Mar. 2016.

Horseshoe, by enhancing competitiveness, promoting sustainability and removing the barriers to these goals. The report details the following five opportunities for the sector.

**A. GROW THE CLUSTER -**

- Grow the Golden Horseshoe cluster so it becomes the leading food and farming cluster in the world, renowned for healthy and safe products.

**B. LINK FOOD, FARMING AND HEALTH**

- Educate current and future consumers about the importance of locally sourced food and farming products for enhancing their health and well-being.

**C. FOSTER INNOVATION**

- Encourage and support innovation to enhance the competitiveness and sustainability of the Golden Horseshoe food and farming cluster.

**D. ENABLE THE CLUSTER**

- Align policy tools and their application to enable food and farming businesses to be increasingly competitive and profitable.

**E. CULTIVATE NEW APPROACHES**

- Pilot new approaches to support food and farming in the Golden Horseshoe.

The analysis of food and farming assets in this report has focused mainly on the “**Grow The Cluster**” pillar of the Action Plan 2021. This analysis of the GGH region also supports Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) planning, farmland preservation and economic development efforts.

Our approach for the analysis involved the following steps:



**Figure 1**

This report analyzes the overall state of employment and the competitiveness of the food and farming industry in the GGH relative to the rest of the province. For example, this analysis identifies which sectors within the agri-food value chains are growing or declining in the region, how sectors are performing relative to other economic regions in Ontario, and key changes in recent performance. In addition, several key sub-sectors identified in the Golden Horseshoe 2013 and 2015 reports that demonstrated changes in employment trends or now have additional farm level data in the asset database were further investigated.

## **Agri-food Employment in the Greater Golden Horseshoe Region**

Our analysis of the GGH for this report started with a review of employment data for agri-food related jobs in the region using National Occupation Classification System (NOC-S) data. The agriculture value chain for this analysis includes the full value chain from primary agricultural production and food processing right through to food service such as restaurants and institutions. As in the 2013 and 2015 GH reports, this illustrated that the sector is very diverse in the commodities that are produced and processed in the GGH. Additionally, the GGH asset map analysis shows pockets and hot spots in the geographical distribution of agri-food jobs.

The figures in the following section present a number of different perspectives on the distribution of employment across the agri-food sector in the GGH region.

## Occupation Statistics by NOCS Code

The following two figures show the occupational breakdown for each region within the GGH for 2010 and 2015 (the most recent data available). As one would expect for a relatively short time period, there are no significant changes in the occupation breakdown by region from 2010 to 2015. The City of Toronto continues to have the highest agri-food sector employment with 31% of the total jobs based on the size of food service related occupations and the overall population.

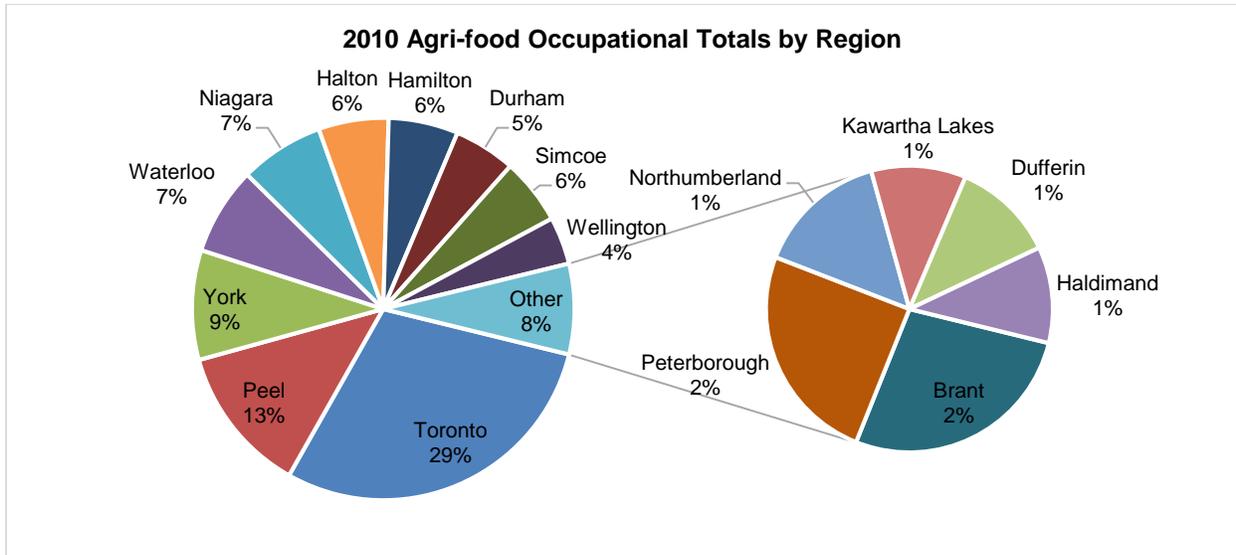


Figure 2: EMSI Analyst – Q3 2015 Data Set – 316,446 total jobs

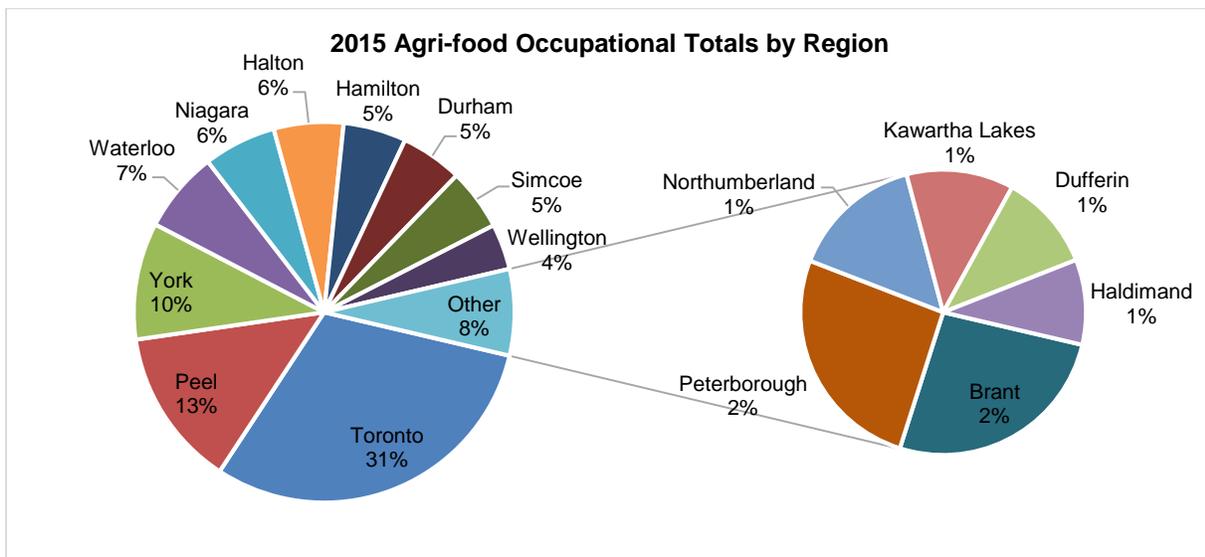


Figure 3: EMSI Analyst – Q3 2015 Data Set – 354,182 total jobs

Note: Data for single-tier municipalities is included in the upper-tier municipality in which they are located.

The following figures illustrate the occupational breakdown by job type using NOC-S code data. Food service related jobs such as food counter attendants, food and beverage servers, restaurant managers and chefs account for the top four agri-food occupations with a total of 199,117 jobs in 2015, which is just over half of the total agri-food jobs. This is a similar breakdown of jobs identified for the GH region in the previous reports.

Food manufacturing related jobs, such as food and beverage labourers, process control, machine operators, butchers and bakers account for four of the top ten occupations with 55,526 jobs. Landscaping and grounds maintenance jobs made up 29,913 jobs in 2015 (when all related landscaping jobs are added together).

When compared to the GH region analyzed in the previous report, the only significant change in the GGH is an increase in the number of farmers and farm managers. Farmers, farm managers and general farm workers accounted for 22,421 jobs in 2015 and moved up the rank in terms of top jobs.

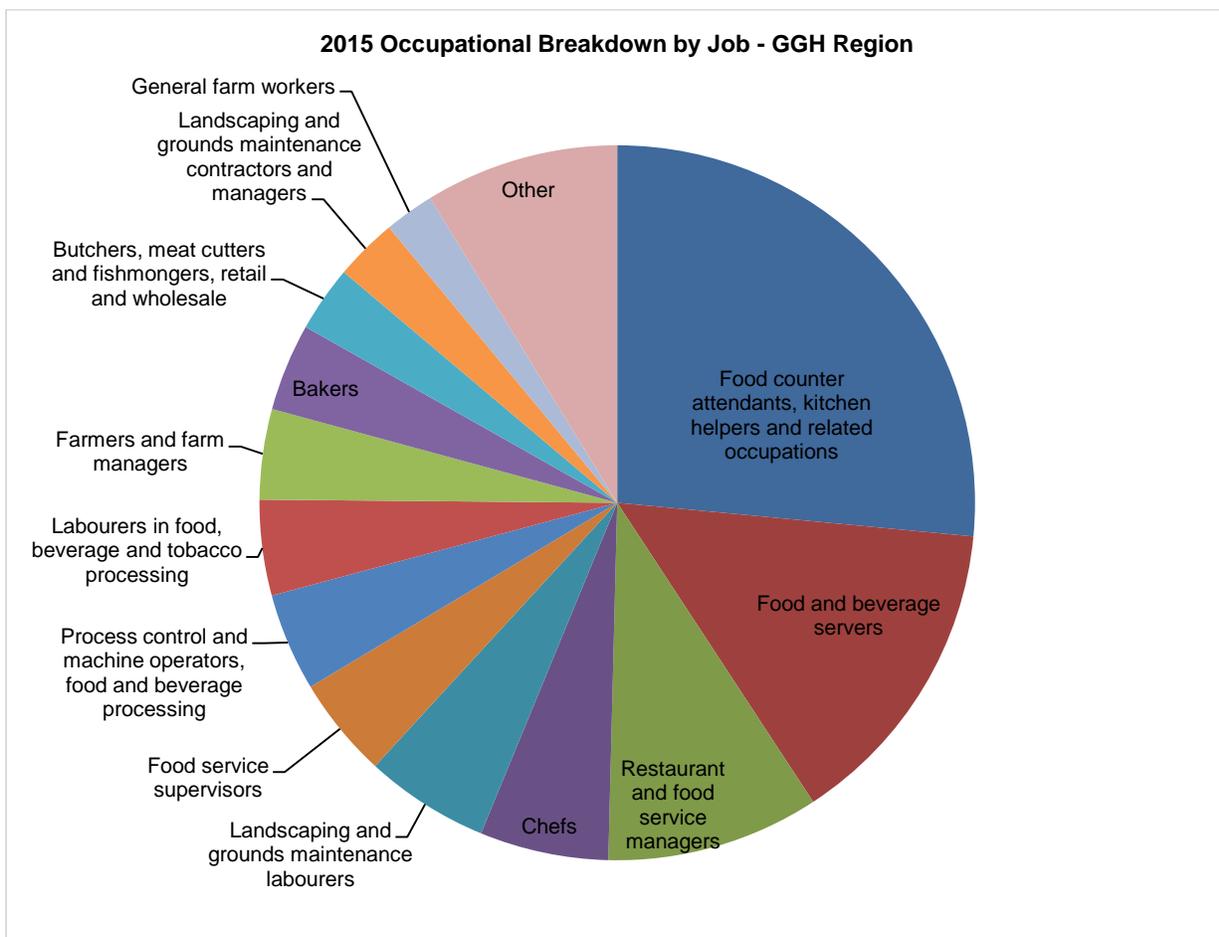


Figure 4: EMSI Analyst – Q3 2015 Data Set – 354,182 total jobs

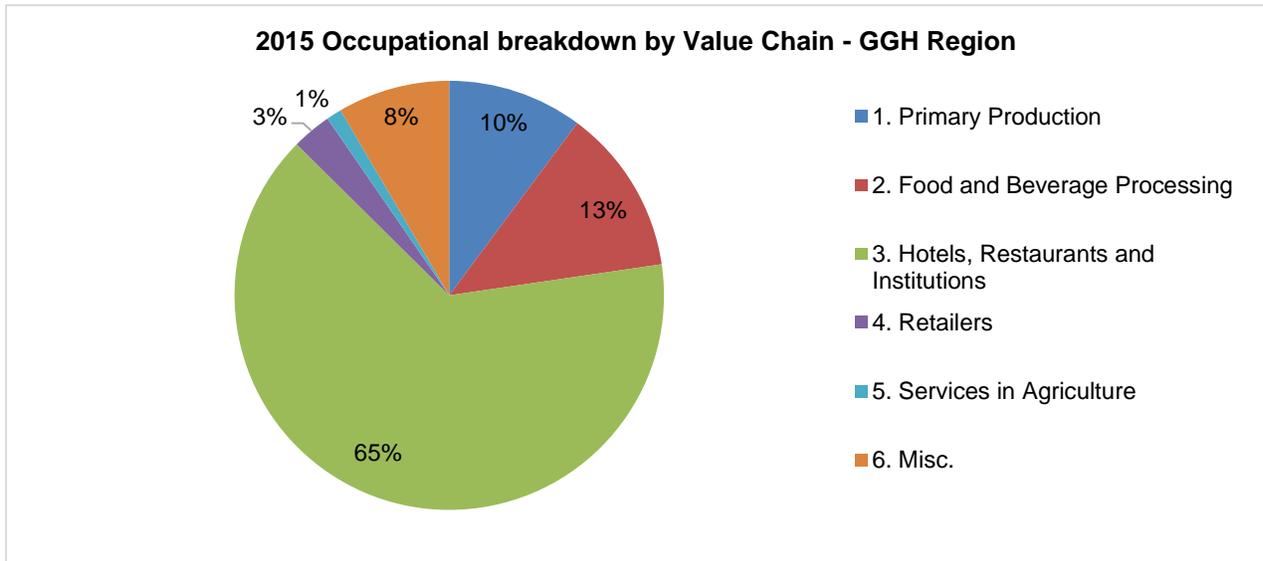


**Figure 5: EMSI Analyst – Q3 2015 Data Set – 354,182 total jobs**

A full description of the job names in the above figure is available in the Appendix.

The wide range of jobs included in the previous figures can be summarized into six groups or steps in the value chain to simplify the analysis. In the following chart, the jobs have been combined into the following categories:

1. Primary production
2. Processing
3. Hotels, Restaurants and Institutions
4. Retailers
5. Services to the agriculture industry
6. Miscellaneous (such as landscaping, etc...)



**Figure 6: EMSI Analyst – Q3 2015 Data Set – 354,182 total jobs**

This analysis shows that primary production (10%) and services to agriculture (1%) account for a combined 11% of total agri-food related jobs in the GGH region. The next step in the value chain, grain and food processing, makes up 13% of total agri-food jobs. The primary production and processing sector jobs in these initial steps of the value chain are of critical importance because they drive significant additional economic impact within the region. For example, grain that is produced by farmers in the GGH Region is likely to be transported and stored at local elevators and further processed nearby at flour mills, soybean crusher and wet mill corn processing operations. These processing operations add additional value to the grain and oilseeds which creates significant economic impact through domestic and export sales of food ingredients, and finished food products.

Retail (3%) and food service (hotels, restaurants and institutions, 65%) occupations are the largest segment of employment in the sector representing a combined 68% of the 2015 agri-food employment in the region. These jobs are important and create a significant economic impact, however, the additional economic impact driven by these jobs is not as large as with the steps earlier in the value chain (farms and processing). The retail and food service jobs are likely driven mainly by population growth, disposable income and demographic make-up of a local community.

## Trends by NOC-S Code

The following table illustrates the percentage change in jobs for major occupations from 2005-2015.

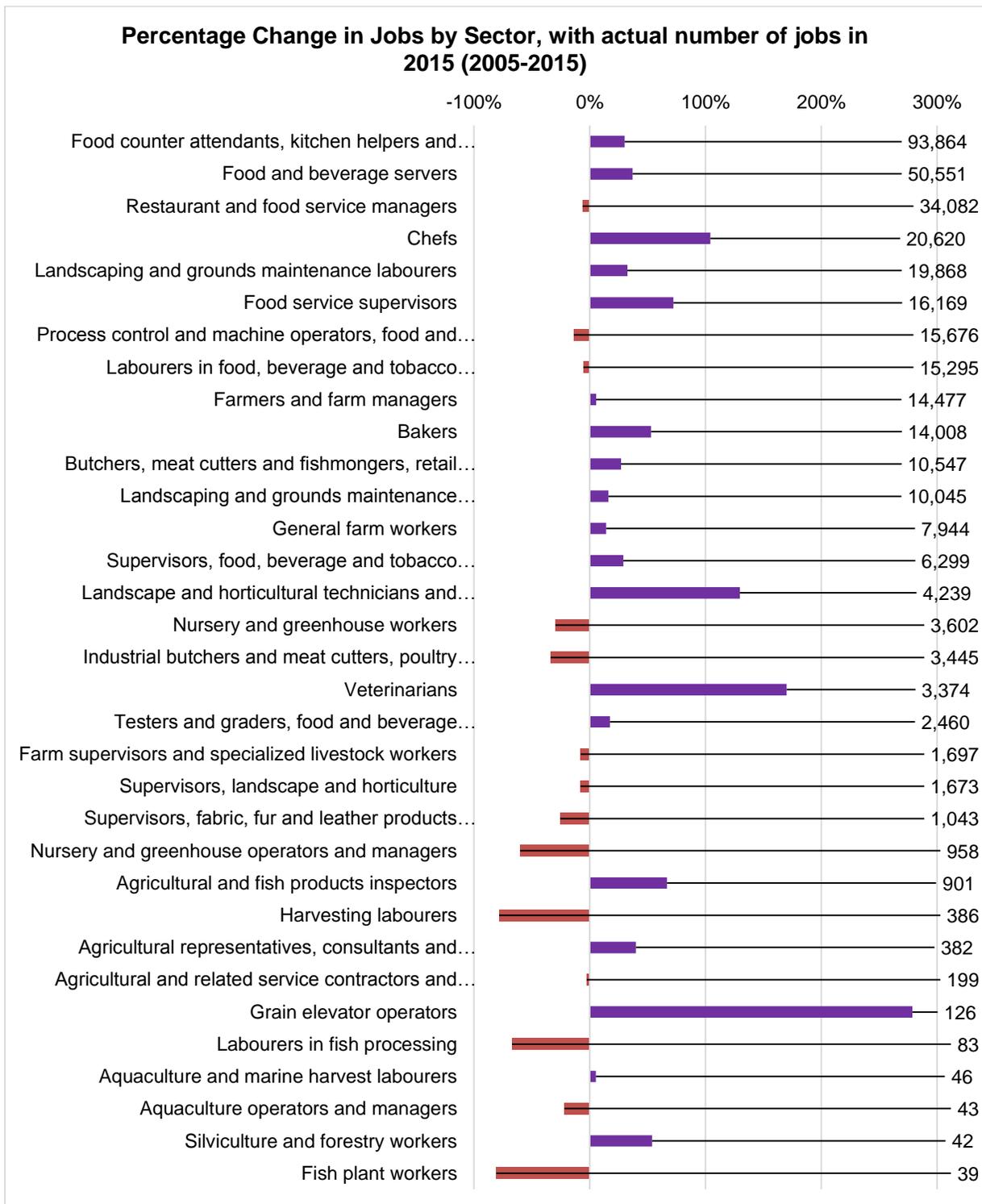


Figure 7: EMSI Analyst - Q1 2015 Data Set – 354,182 total jobs

Occupational trend data provides a high level view into how the agri-food industry is structurally changing over time. This analysis can illustrate specific segments of the agri-food value chain that are growing or shrinking. These trends provide a general indication of the overall health of the sector and its supply chain. In some cases, where occupations are declining but production or output has been maintained, it is a signal that the sector is automating (such as processing plant automation) or increasing productivity in some way (such as increased crop yield or livestock feed conversion).

The highest overall percentage growth is for grain elevator operators at over 250% growth, however the total number of jobs is relatively low (126 jobs) and is not a significant overall factor or economic development opportunity.

Veterinarians increased by over 150% to 3,374 total jobs which is a positive, despite livestock and poultry production in the GGH region being relatively stable during this time. The vast majority of these positions are therefore assumed to be small-animal related and consumer focused, rather than large animal or agricultural focused practices. While this is an interesting finding, similar to the previous GH analysis, this is likely not an opportunity that can be further developed to advance the agri-food sector.

Landscaping related jobs, which includes landscape and horticulture technicians, landscaping grounds maintenance labourers, landscaping and grounds maintenance contractors, managers, and supervisors; all show positive growth and a significant number of positions with 35,825 total jobs. Residential and commercial development are key factors that spur growth in this segment.

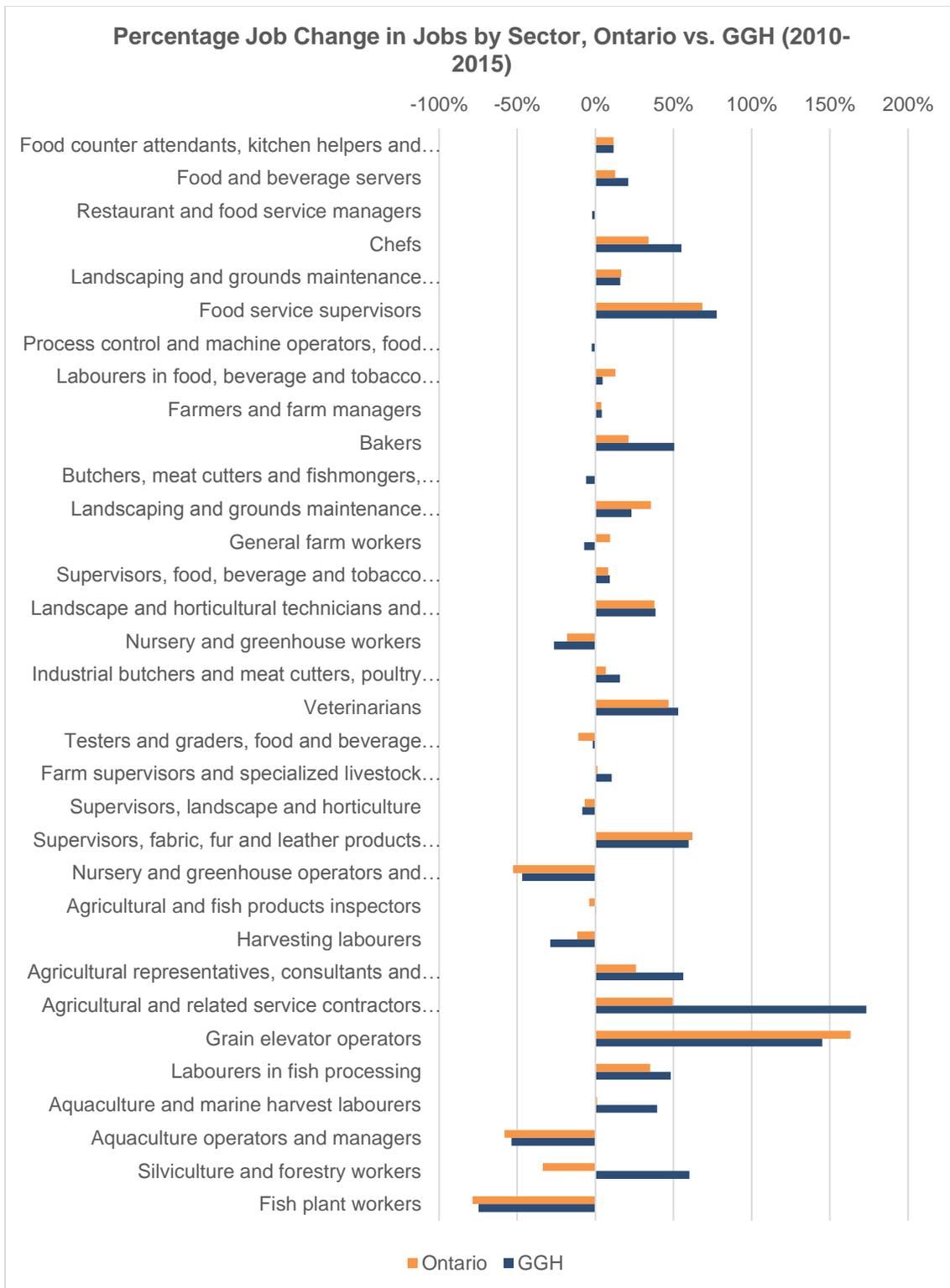
Harvesting labourers have decreased significantly to 386 jobs which is a 78% reduction. Horticulture production in the GGH area has not dropped by the same level so it is likely that harvesting automation and part time seasonal labour are filling this gap.

Nursery and greenhouse operators and manager as well as nursery and greenhouse workers both declined significantly over the past decade, but production or output has not declined at this rate. Greenhouse production efficiency continues to increase through automation and improved climate control systems; this may account for some of the employment decreases in this sector. The renewal of older greenhouse with outdated systems and technology with modern, efficient facilities is healthy for the sector but may lead to lower total employment in some job categories.

Food manufacturing jobs are showing both increases and decreases in various positions. For example, decreases have occurred in process control and machine operators (down 14%), industrial meat cutters (down 34%), and fish plant workers (down 60-80%). These trends indicate a significant change and are likely the result of a number of food manufacturing plant closures in the GGH over the past decade. Some of these operations have remained in Ontario and moved to larger, more efficient facilities. In other cases, however, plants were closed and the business was not retained in Ontario. While modern, efficient plants may be healthy for the business and economy in the long term, it can lead to reduced jobs in the short term when

compared to previous, more labour intensive processing operations. Increasing concentration of grocery retailers combined with increased food imports, such as private label products, is likely also a contributor to decreases in food manufacturing.

In contrast, there have also been some increases in food processing occupations. Two strong positives in the processing stage of the value chain are bakers and retail butchers. Bakers increased by 53% to 14,008 jobs. Retail butchers and meat cutter jobs increased by 27% to 10,547 jobs. Consumer purchasing pattern shifts toward specialty, gourmet and fresh prepared and local foods are a driving factor behind this growth in the GGH. As consumers choose more locally prepared and specialty/gourmet products, the demand for these positions has increased. The smaller, retail style outlets (including on-farm markets) can be disruptive to larger food businesses as they take a larger share of overall food purchases.



**Figure 8: EMSI Analyst - Q1 2015 Data Set**

The figure above compares the change in jobs by sector for Ontario and the GGH. Note that the time frame is different from that in Figure 7; it looks at 2010-2015, so the two figures cannot be

directly compared to each other. The jobs in this chart are ranked from largest to smallest number of employees in 2015. Key observations and findings for this chart include the following:

- Food access jobs such as food and beverage servers, chefs, and food service supervisors increased more in the GGH than in Ontario as a whole. This is likely driven by population increases, and is consistent with the previous observations and comments in this report.
- Bakers increased dramatically in the GGH region as opposed to the increase in the rest of the province, indicating that there is a higher concentration of bakeries, both retail and commercial level, in the GGH region.
- Landscaping related jobs such as landscaping and grounds maintenance and landscaping and horticulture technicians had a larger increase in Ontario than in the GGH region.
- General farm workers shows a significant decrease in the GGH region, but a modest increase in the province, further highlighting the GGH's weakening farm level employment.
- Nursery and greenhouse worker decreased more dramatically in the GGH region than in the province as a whole.
- Harvesting labourers decreased by 29% in the GGH as compared to only 12% in the whole of Ontario.
- Agricultural and related service contractors and managers; and representatives, consultants and specialists saw a significantly larger increase in the GGH region during this time period as compared to the province as a whole. Nearly 85% of the total growth in these combined sectors occurred within the GGH region.

## Trends by NAICS Code

The trends in agri-food related employment can also be analyzed using the NAICS classifications (by industry type). The following figure shows the historical trend in employment by industry, summarized at the three digit NAICS code. Growth in employment has been primarily in the access (food service) sectors of the industry. These are forecast to grow in the future. Primary production and processing have been generally flat. Figure 9 also contains projections of employment change for 2015-2021 prepared by EMSI. Estimates show the general trends to continue in the future with less dramatic increases in the food service and distribution classes.

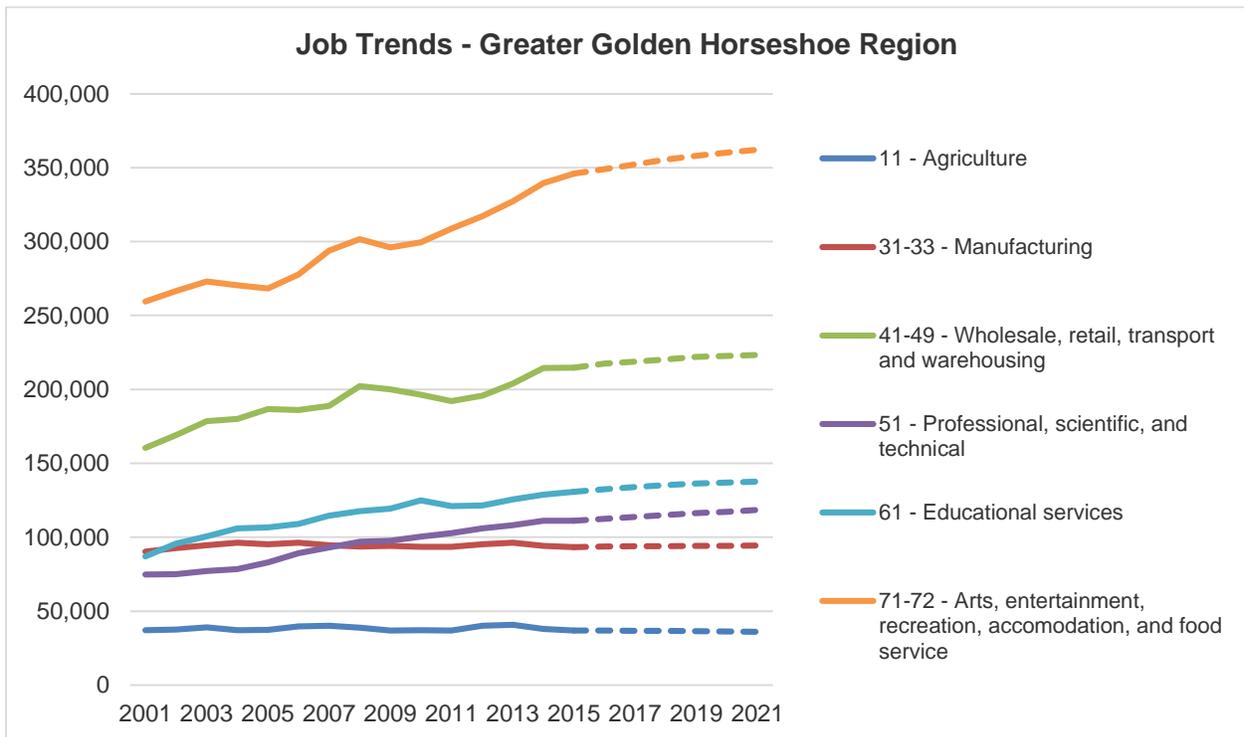


Figure 9: EMSI Analyst – Q3 2015 Data Set

Note: Figure 9 – Agriculture includes crop farming (111) and support activities (115) but excludes livestock farming (112) because of lack of data in the EMSI Analyst database.

The trends in agri-food related employment can also be analyzed using a subset of the above NAICS codes, which represents the industry subsector category such as crop production or food manufacturing. For the report, the agri-food sector can be divided into four groups that encompass the main steps in the value chain as follows:

<b>Farming (Green)</b>	Primary production
<b>Processing (Red)</b>	Food processing
<b>Distribution (Blue)</b>	Food wholesaling and distribution
<b>Access (Orange)</b>	Grocery stores and restaurants

The following figure shows the percentage change in jobs along the value chain sorted and colour coded into the four steps in the value chain.

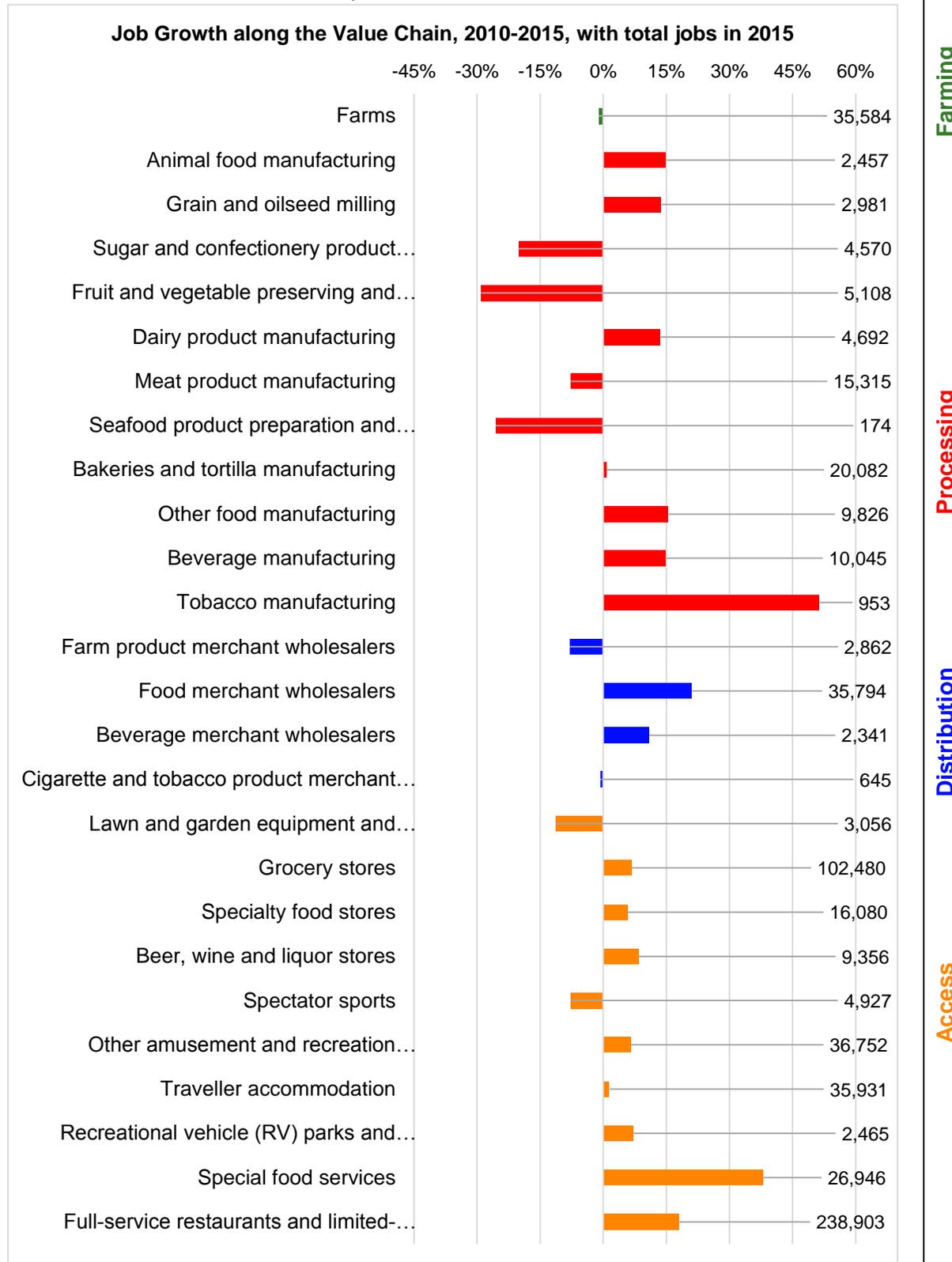


Figure 10: EMSI Analyst – Q3 2015 Data Set – 630,325 total jobs in 2015

Farming

Processing

Distribution

Access

The previous Figure 10 illustrates a few trends in the 2010 to 2015 period that are consistent with the analysis in the previous section of this report. The following is additional analysis on the biggest shifts in jobs shown in Figure 10:

- **Farming (Green) employment has decreased slightly**
  - The slight decrease in farming related jobs in the GGH is less dramatic reduction when compared only to the GH region, but is nonetheless a net loss of farm based jobs. This decrease is a significant drop in a short period of time. As will be shown later in this report, farm employment in the GGH region is dropping faster than in other areas of the Province.
- **Processing (Red) has some ups and some downs**
  - Animal food manufacturing jobs has increased 15% in the GGH region to 2,457 total jobs. This is likely due to new facilities (such as Royal Canine plant) and expansions to meet the growing demand for companion animal (pet) food. Anecdotally, decreased food safety confidence of imports from China may also be a contributing factor.
  - The grain and oilseed milling category increased by 14% to 2981 total jobs. This is more positive than in the GH region which indicated only a slight increase between 2011 and 2014.
  - Sugar and confectionary has decreased by 20% to 4570 jobs which is a significant decline. This decline is more pronounced than in the GH region indicating that the secondary processing businesses in the GGH are likely declining at a more rapid rate. The core of sugar processing businesses in the GGH have not declined to the same extent. Given Canada's position on world pricing for sugar, this is an alarming trend. Any apparent advantage that this sector has is not translating into jobs. Possible reasons include lower sales, reduced plant capacity and/or reduced jobs through plant automation.
  - The largest decrease is in the fruit and vegetable preserving and specialty food manufacturing category. This comprises establishments that manufacture frozen fruits or vegetables, juices, frozen entrees, and vegetables preserved by pickling, canning or dehydrating. This sector is highly concentrated with only a few large processors operating in any particular crop, so a few plant closures can have a significant impact on the number of jobs in this category.
  - Dairy product manufacturing also shows a positive trend with a 14% increase to 4692 total jobs in the GGH region. This sector operates under a supply management system and thus has reduced/limited pressure from imports compared to other commodities.
  - The largest processing sector by far is the bakery and tortilla sector with 20,082 total jobs. Bakery and tortilla manufacturing is showing no change over the period 2010 to 2015. Challenges facing this sector include stagnant overall demand for bakery products, changing product mix to due to demographics and growth of gluten-free which has decreased volume

- with some traditional bakery operations who are not able to accommodate these products in their current plant. This sector is a real strength with a broad mix of companies and products plus a higher concentration of Canadian owned/managed operations relative to other food categories.
- Other food manufacturing is a “catch all” category for operations such as snack food, coffee and tea manufacturing, ethnic foods, flavouring concentrates, and seasoning. This sector is showing increases in the GGH by 15% to 9826 jobs. This growth is likely due to food trends toward fresh and gourmet products as well as significant growth in demand for ethnic foods.
  - Beverage manufacturing is showing a strong gain in jobs with a 15% increase to 10,045 jobs. This is likely due to a combination of success stories such as brewery/microbrewery expansion, winery growth, cider production, as well as other beverage products.
  - Seafood product preparation and packaging, like in the GH report, shows a significant percentage decline possibly due to a processing capacity reduction. This is a very small, niche with 174 total jobs.
  - Tobacco manufacturing interestingly shows a high percentage gain, however it is a relatively low number of total jobs (953).
- **Distribution (Blue) shows mostly increases (with a few decreases)**
    - Farm merchant wholesalers comprises businesses who are primarily wholesaling livestock, grain and other farm products such as nursery stock and plants. This category is decreasing likely due to increased farm size (fewer customers) as well as reduced production in some crops or livestock species in the GGH Region. Large farms have greater access to sell products directly to a processor, which can decrease the need for wholesalers in some cases.
    - Food merchant wholesalers is a sizeable and growing classification (35,794 jobs). This includes businesses that wholesale virtually any food product (except beverages) whether it is produced in Ontario, other provinces or imported. Growth is due to the expanding population base which drives overall demand with grocery retail stores, specialty stores and food service outlets (restaurants, institutions). This sector is heavily concentrated in the GGH region due to transportation networks and access to customers.
    - Beverage merchant wholesalers are also growing, but it is a far smaller segment of the workforce at 2,341 total jobs. Similar to food merchant wholesalers, beverage wholesalers are more concentrated in the GGH region due to transportation networks and close access to customers.
  - **Access (Orange) employment has increased in most industry classifications**
    - Grocery stores and full service restaurants are both providing significant job growth in the GGH Region. As mentioned earlier, these are driven mainly by population growth and demographics as well as trends toward convenience foods. Grocery retail is a highly consolidated sector with

- three main companies operating the vast majority of grocery stores. While this can be very efficient, it does concentrate market power among a few players and it can make it more challenging for suppliers.
- Special food services is the fastest growth area with an increase of over 35%. This category is made up of businesses that provide food delivery or mobile services. Specifically, food services at the customer's location (catering) or from a vehicle or cart (such as a food truck), as well as contractors providing services to airlines and institutions, and concessions at sports venues. This is a significant job category with over 26,000 jobs and is growing rapidly.

### Agri-Food Concentration in GGH

Additional analysis has been done to compare the agri-food sector in the GGH as compared to the province as a whole, using NAICS code classifications for 17 key agricultural manufacturing and production sectors. These 17 sectors are examined in more detail later in this report. This analysis uses employment as a proxy for concentration of the sector. The GGH accounts for roughly 65% of the total agri-food jobs in the province of Ontario.

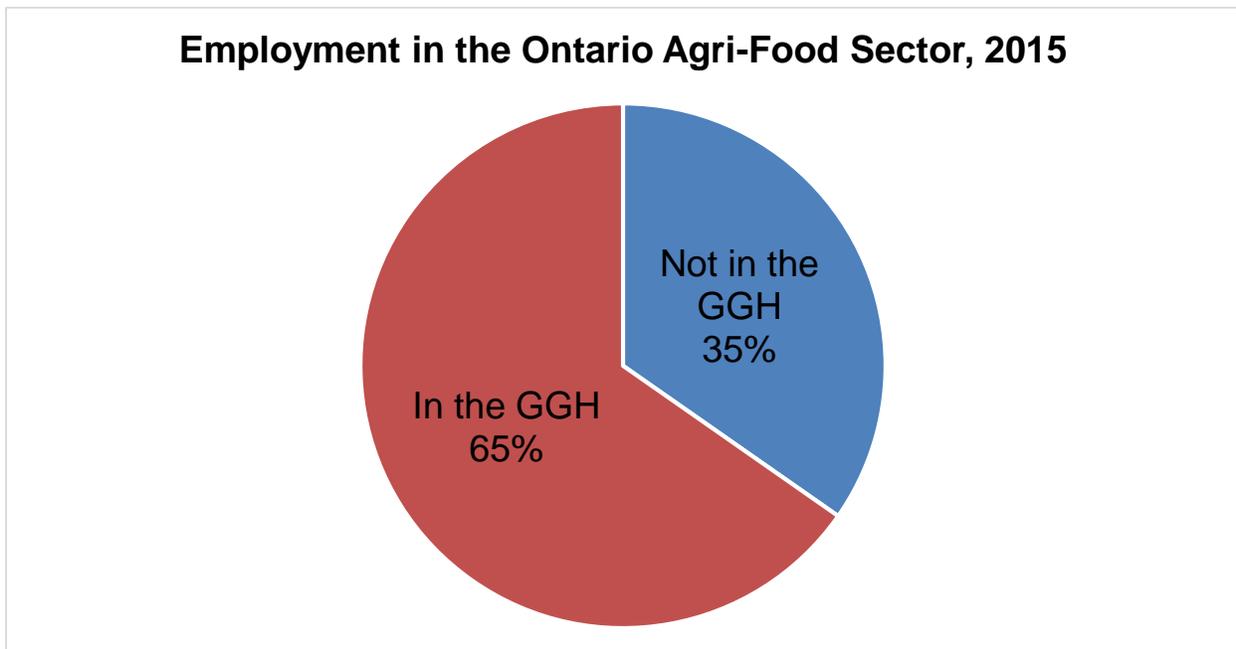
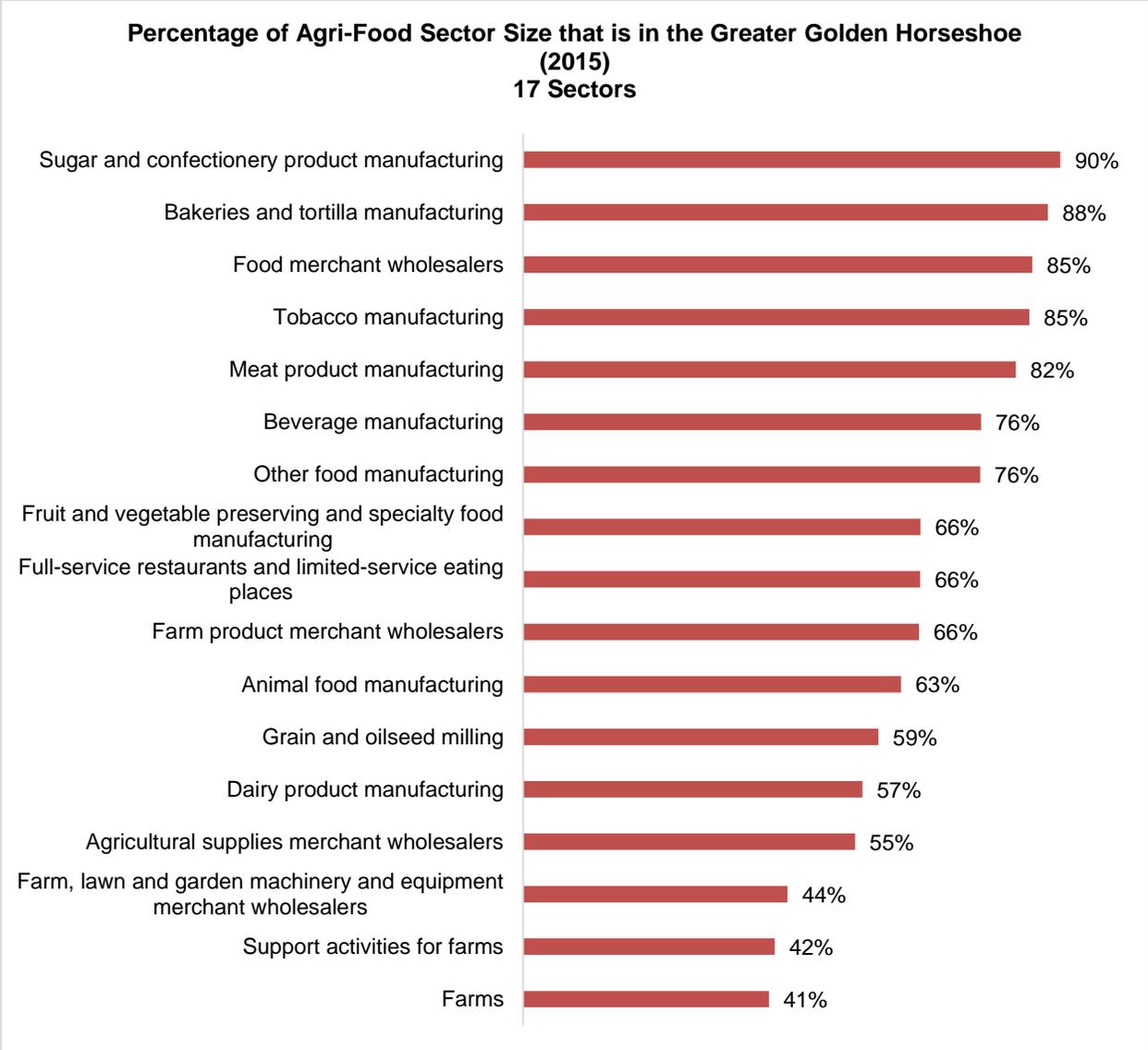


Figure 11: EMSI Analyst – Q3 2015 Data Set

The following figure shows the concentration of the total 2015 jobs in the subsector that are located in the GGH region as compared to Ontario. For example, 90% of the total sugar and confectionary product manufacturing jobs in Ontario are in the GGH. Contrastingly, less than half (42%) of the jobs in farms and farm support businesses reside in the GGH.



**Figure 12: EMSI Analyst – Q3 2015 Data Set**

The following figure and graphic illustrate a summary of the overall employments trends for the four main steps in the GGH agri-food value chain:

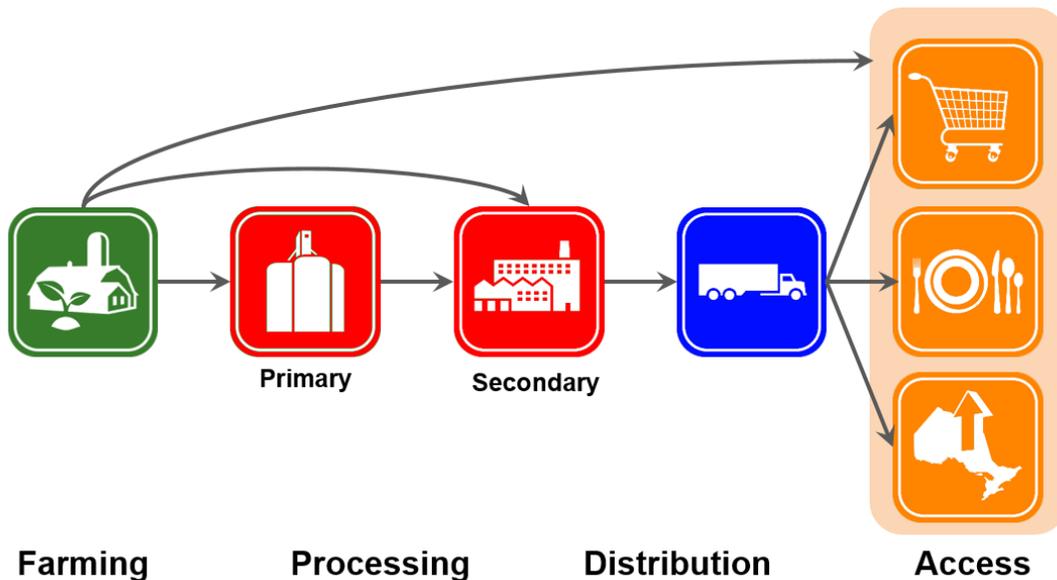
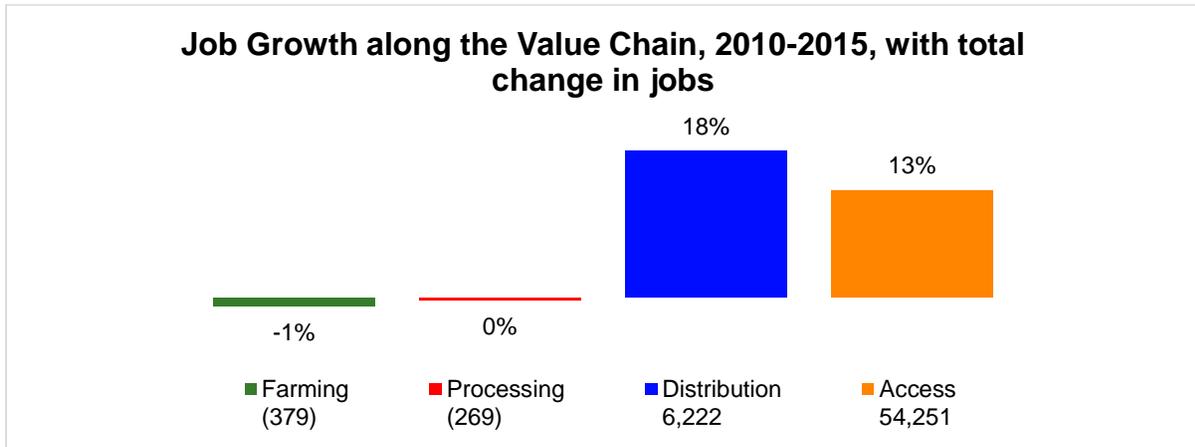


Figure 13

Farm related jobs decreased slightly in the GGH (no growth)  
 Farms jobs in the GH decreased during the same period (2015 report).

Food processing employment is also stable (no growth) in the GGH

Employment in distribution and food access is increasing  
 Growth is likely a function of overall population growth, especially in urban areas.

**These initial steps of the value chain are crucial and drive significant economic impact.**

The following map illustrates the GGH asset map database showing all of the business locations data points separated into the four main steps in the value chain by three digit NAICS code.

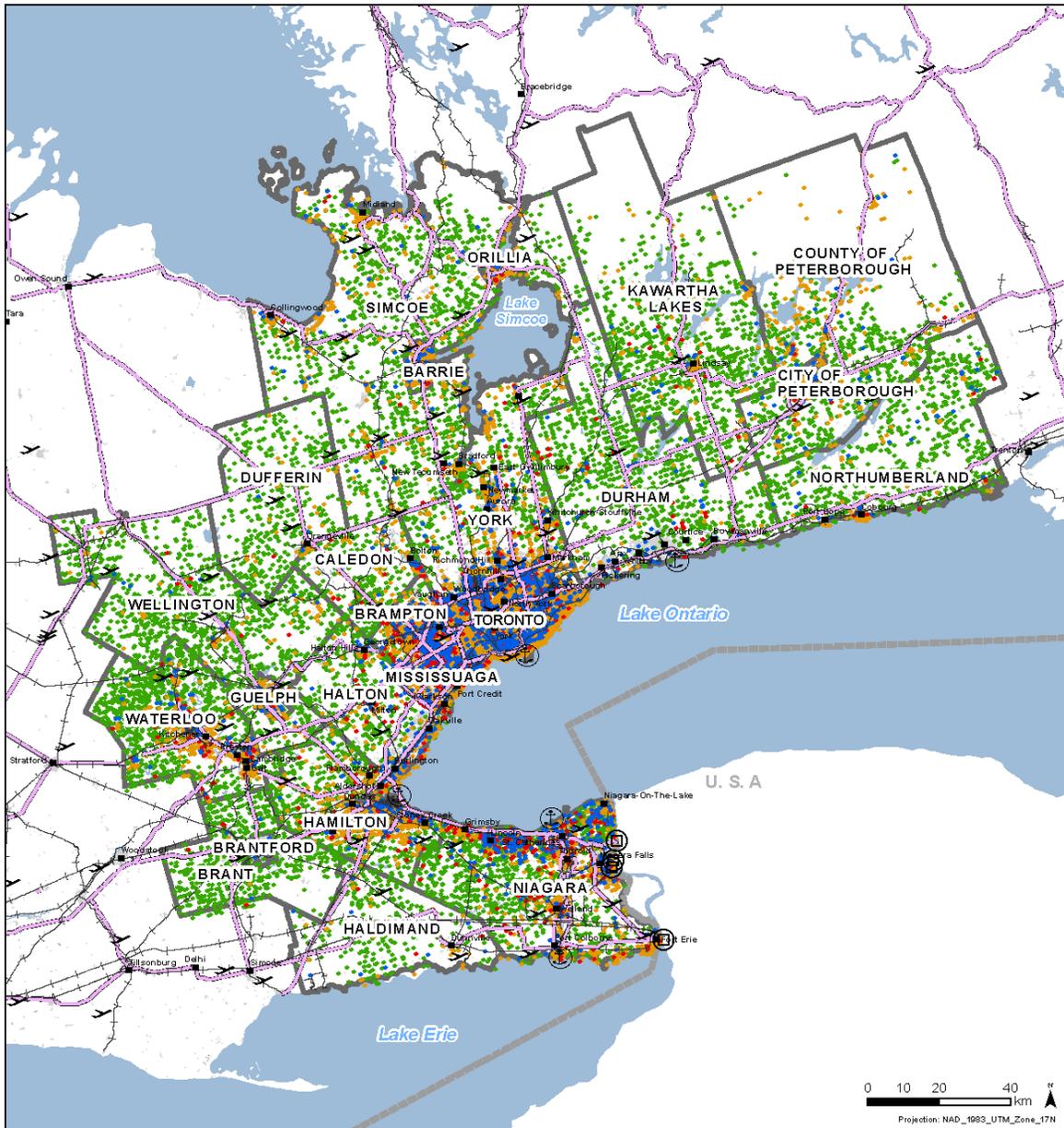


Figure 14: Agri-food asset by industry type within the Golden Horseshoe.

<b>Farming (Green)</b>	Primary production	Codes: 111, 112, 113
<b>Processing (Red)</b>	Food processing	Codes: 311, 312
<b>Distribution (Blue)</b>	Food wholesaling and distribution	Codes: 411, 413, 493
<b>Access (Orange)</b>	Grocery stores and restaurants	Codes: 444, 445, 447, 721, 722, 711, 712, 713

## Key Findings

An analysis of both NOC-S occupational data as well as NAICS industry classification data revealed a few common trends in the agri-food sector:

- The GGH accounts for roughly 65% of the total agri-food jobs in the province of Ontario.
- The City of Toronto continued to have the highest agri-food sector employment of the regions, representing 31% of the total jobs within the Greater Golden Horseshoe region and made up of mostly retail and food service related jobs. Peel and York Region have a significant number of agri-food based jobs with 10% and 13% respectively. The remaining regions have a similar distribution of agri-food jobs ranging from 4 – 7% (Waterloo 7%, Niagara 7%, Halton 6%, Hamilton 6%, Durham 5%, Simcoe 6% and Wellington 4%).
- Retail and food service-related occupations continue to make up the largest portion of overall employment in the sector representing 68% of total jobs. However, these are largely lower-wage service jobs that are driven by population growth and the strength of the local economy.
  - Overall population growth and disposable income are major factors that impact the growth of these jobs. In some cases, these jobs are not directly linked back to the rest of the agri-food value chain in the GGH region specifically, so they do not have the same multiplier effect as agri-food jobs earlier in the value chain.
- The subsector with the most employment growth between 2010 and 2015 are at the access end of the supply chain. Jobs in this sector increased by 13%, adding 54,251 jobs. Positions in this category include food counter attendants, food and beverage servers, restaurant managers and chefs. Industry sectors include full-service restaurants, special food services, and grocery stores. These increases are a function of overall population growth in the GGH, particularly in the densely populated urban areas.
- Distribution, which includes food and beverage merchant wholesalers, also increased significantly by 18%, which added 6,222 jobs. This growth is due to the expanding population base which drives overall demand. Growth in this area is also fueled by increased processed food and beverage imports<sup>4</sup> which required distribution but do not support the production and processing stages of the value chain.

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<sup>4</sup> Source: CAPI Processed Food analysis 2013, increasing trade deficit in processed food

- Both the farming and processing steps in the value chain show no growth in jobs in the 2010-2015 time period. While it is a positive that there is no net loss in jobs, these initial stages of the value chain have not kept pace with the overall sector development.
  - Farm related jobs in the GGH are stable which contrasts the previous GH report, which showed a significant decrease in farm related jobs.
  - Food processing shows significant increases and decreases as the industry restructures to meet changing consumer needs and international trade forces and competition.
  - In some cases, these decreases may be due to automation or increased productivity within a particular sector (such as increasing farm size or food plant automation).

# Sector Competitiveness and Growth

Similar to the 2013 and 2015 GH reports, two metrics that can be used to provide a view of the industry’s performance over time are Location Quotient and Competitive Effect.

## Provincial Location Quotient (PLQ)

Location Quotient is a measure of the local concentration of an industry relative to the economy as a whole. In this case, Provincial Location Quotient (PLQ) compares the relative concentration in the local region to the concentration in the provincial economy.

$$\text{Provincial Location Quotient} = \frac{\% \text{ of local economy in industry}}{\% \text{ of provincial economy in industry}}$$

When the Provincial Location Quotient is greater than one, the industry is more prevalent in the local economy than in the provincial economy as a whole. Inversely, when the Provincial Location Quotient is less than one, the industry is less prevalent in the local economy than in the provincial economy as a whole. Location Quotient is measured at a point in time. In the case of this report, the Provincial Location Quotient for 2014 is being used.

When **PLQ is greater than one**, the industry is more prevalent in the local economy than in the province.

## Competitive Effect (CE)

The Competitive Effect is being used as a relative measure of performance of an industry over a period of time. If the Competitive Effect is positive then there are more jobs in the industry at the end of the period than would have been expected, based on the change in the economy as a whole and the performance of the industry in the economy as a whole.

A positive Competitive Effect can either mean the industry gained more jobs than expected or it lost fewer jobs than expected. If the Competitive Effect is negative, then there are fewer jobs in the industry at the end of the period than would have been expected, based on the change in the economy as a whole and the performance of the industry in the economy as a whole.

A **positive CE** means the industry gained more jobs than expected or lost fewer jobs than expected.

A negative Competitive Effect can either mean the industry gained fewer jobs than expected or it lost more jobs than expected.

## Matrix

Using these two indicators, sectors can be divided into four general categories:

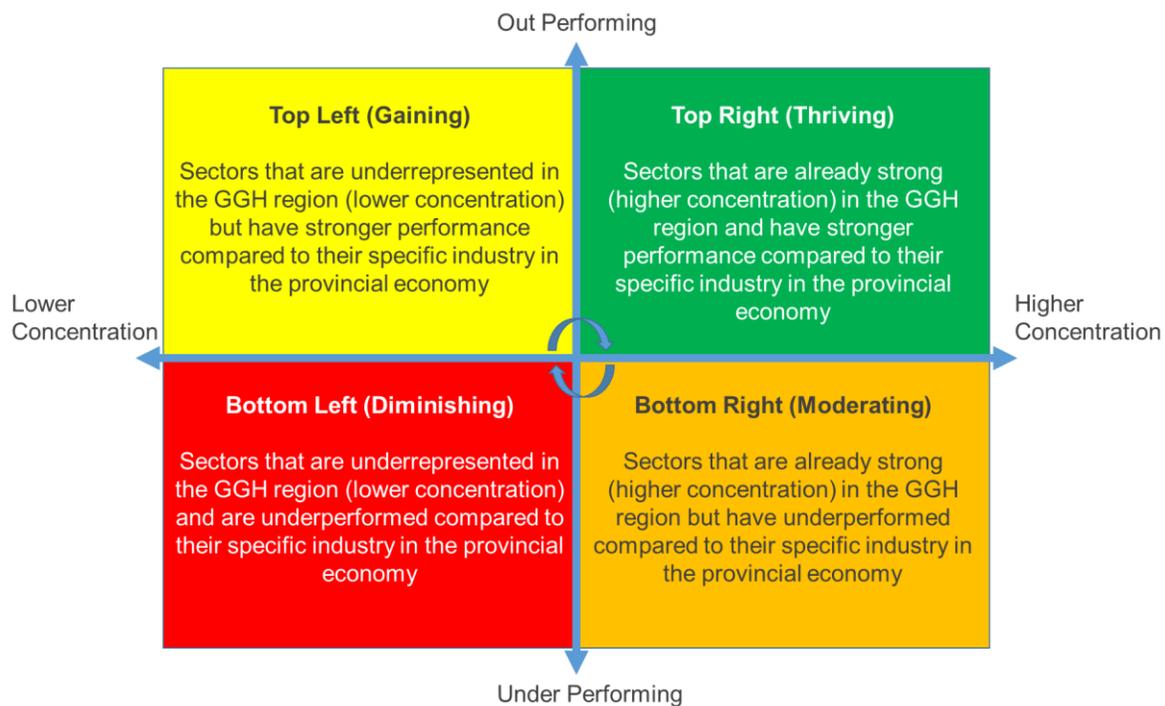


Figure 15

From an economic development perspective, the strategies for a particular industry differ depending on the classification.

- **Thriving industries** - the focus is on sustaining the competitive advantages the region provides.
- **Moderating industries** - the focus is on understanding what factors are reducing the competitive advantage of the region and trying to stem the reduction, if possible.
- **Gaining industries** - the focus is on identifying the factors that are creating the competitive advantage for the industry in the region and attempting to accelerate the growth of the industry.
- **Diminishing industries** - generally are not the focus of economic development programs and initiatives.

The following tables and figures show the PLQ and CE for major industries in the GGH region as outlined in the asset map definition of the agri-food value chain. The size of the bubbles indicates the number of jobs within the industry.

The table below shows the 2015 Location Quotient, the Competitive Effect, and the number of jobs for each classification (also used in developing the bubble chart figures).

NAICS	Description	2015 Location Quotient	Competitive Effect	2015 Jobs
4189	Other miscellaneous merchant wholesalers	1.81	1,325	20,743
3118	Bakeries and tortilla manufacturing	1.56	162	20,082
3122	Tobacco manufacturing	1.42	324	953
3119	Other food manufacturing	1.31	1,307	9,826
3121	Beverage manufacturing	1.30	1,294	10,045
3112	Grain and oilseed milling	1.28	361	2,981
4931	Warehousing and storage	1.26	2,522	15,464
5419	Other professional, scientific and technical services	1.26	2,814	34,199
4131	Food merchant wholesalers	1.25	6,241	35,794
7223	Special food services	1.25	7,418	26,946
6116	Other schools and instruction	1.14	7,612	37,424
5417	Scientific research and development services	1.07	2,819	16,723
4132	Beverage merchant wholesalers	1.06	231	2,341
4452	Specialty food stores	0.98	888	16,080
7225	Full-service restaurants and limited-service eating places	0.94	36,535	238,903
7139	Other amusement and recreation industries	0.93	2,277	36,752
4451	Grocery stores	0.92	6,518	102,480
3111	Animal food manufacturing	0.91	320	2,457
6112	Community colleges and C.E.G.E.P.s	0.90	3,313	28,478
5413	Architectural, engineering and related services	0.88	5,243	60,272
4453	Beer, wine and liquor stores	0.80	728	9,356
3115	Dairy product manufacturing	0.76	558	4,692
7211	Traveller accommodation	0.73	521	35,931
4183	Agricultural supplies merchant wholesalers	0.65	360	2,964
7212	Recreational vehicle (RV) parks and recreational camps	0.51	166	2,465
4171	Farm, lawn and garden machinery and equipment merchant wholesalers	0.50	272	2,982
3331	Agricultural, construction and mining machinery manufacturing	0.49	562	4,433
1150	Support activities for farms	0.44	310	1,433
3253	Pesticide, fertilizer and other agricultural chemical manufacturing	0.26	125	530
3254	Pharmaceutical and medicine manufacturing	1.75	(493)	12,225
3113	Sugar and confectionery product manufacturing	1.55	(1,155)	4,570
7112	Spectator sports	1.30	(411)	4,927
3114	Fruit and vegetable preserving and specialty food manufacturing	1.02	(2,094)	5,108
3116	Meat product manufacturing	0.99	(1,286)	15,315
4442	Lawn and garden equipment and supplies stores	0.88	(390)	3,056
6113	Universities	0.86	(5,169)	64,792
4133	Cigarette and tobacco product merchant wholesalers	0.82	(4)	645
4111	Farm product merchant wholesalers	0.72	(246)	2,862
1110	Farms	0.42	(379)	35,584
3117	Seafood product preparation and packaging	0.03	(60)	174

**Table 1: NAICS Provincial Location Quotient & Competitive Effect.**

The following figure shows the competitiveness versus provincial location quotient for all facets of the GGH agri-food sector as defined in the asset map database.

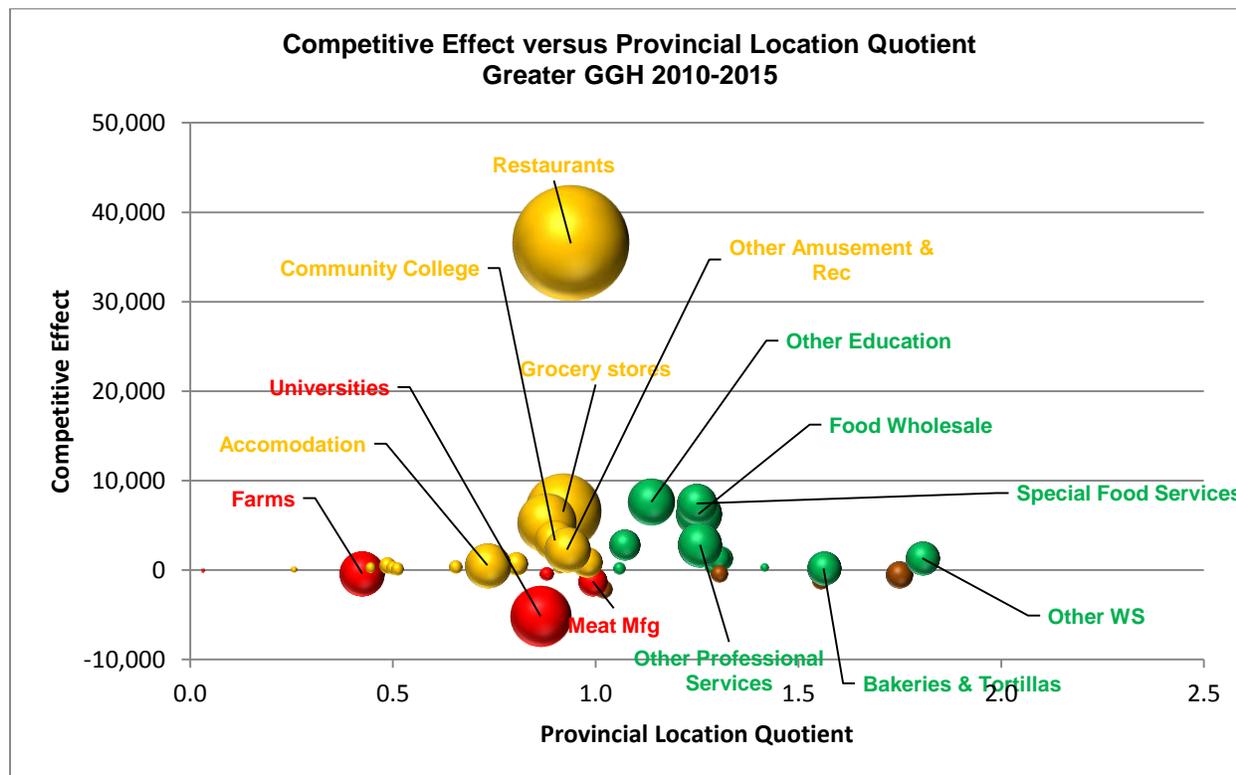


Figure 16: EMSI Analyst – Q3 2015 Data Set

The graph has the largest employers within the industry labelled. The inclusion of restaurants distorts the scale of the graph both because of its relative size and its position on the y-axis. The sectors selected for inclusion were selected based on whether or not there were some jobs within the sector that would be related to food production, processing, distribution, or access. For example, the university sector has been included. The majority of the jobs within this sector are not related to agri-food but there are jobs in on-campus eateries that would be considered food access related. Therefore, the university sector was included in the extensive sector list to ensure that no agri-food – related employment was missed. However, the inclusion of these sectors obscures the core agri-food industry sectors because of the distortions to scale and relative size.

A more traditional definition of the agri-food industry includes seventeen sectors that are directly involved in production, processing and distribution. The following figure presents those sectors graphed on the same axes but at an enlarged scale.

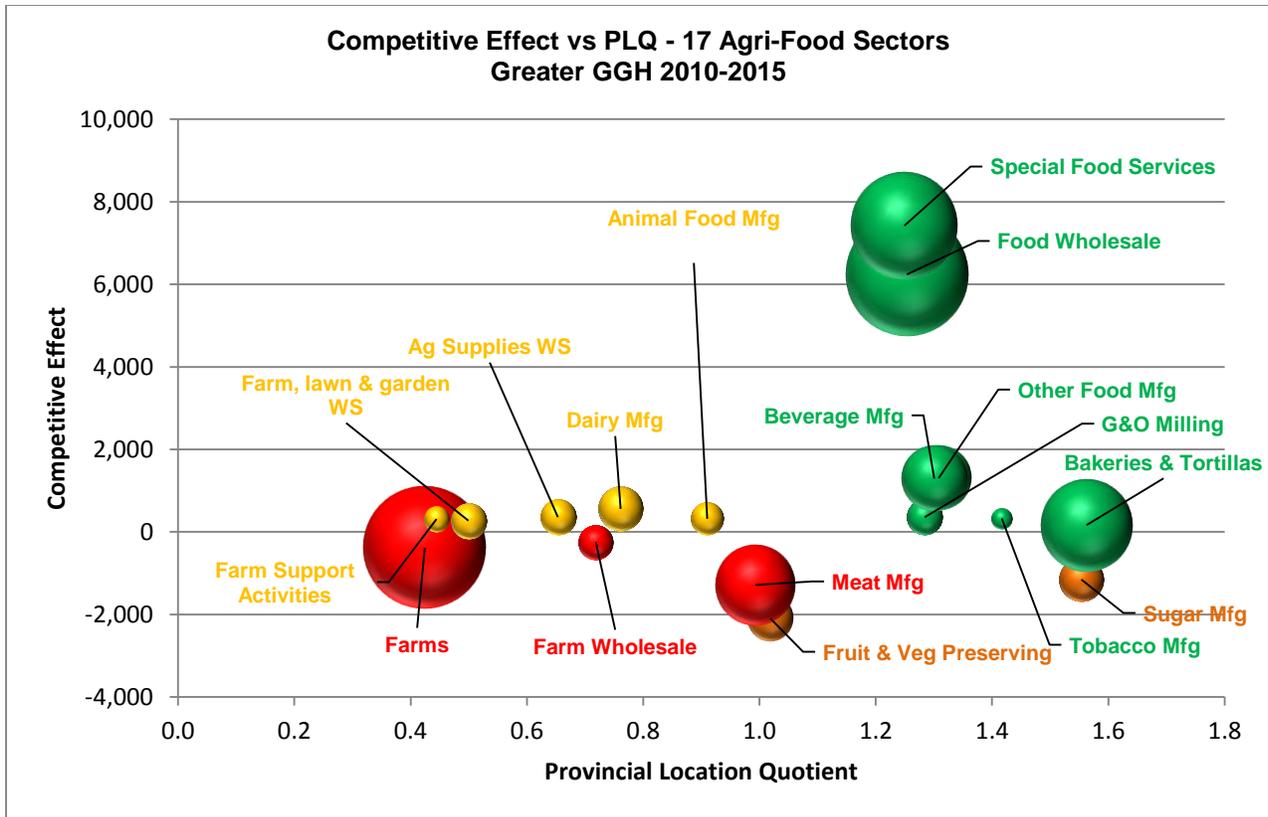


Figure 17: EMSI Analyst - Q3 2015 Data Set

NAICS	Description	2015 Location Quotient	Competitive Effect	2015 Jobs
3118	Bakeries and tortilla manufacturing	1.56	162	20,082
3122	Tobacco manufacturing	1.42	324	953
3119	Other food manufacturing	1.31	1,307	9,826
3121	Beverage manufacturing	1.30	1,294	10,045
3112	Grain and oilseed milling	1.28	361	2,981
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4183	Agricultural supplies merchant wholesalers	0.65	360	2,964
4171	Farm, lawn and garden machinery and equipment merchant wholesalers	0.50	272	2,982
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3113	Sugar and confectionery product manufacturing	1.55	(1,155)	4,570
3114	Fruit and vegetable preserving and specialty food manufacturing	1.02	(2,094)	5,108
3116	Meat product manufacturing	0.99	(1,286)	15,315
4111	Farm product merchant wholesalers	0.72	(246)	2,862
1110	Farms	0.42	(379)	35,584

Table 2

The shift-share analysis in Figure 17 tells a fairly positive story with a few exceptions. The agri-food industry has one quarter of its sectors and five of the seven largest by employment in the “Thriving” quadrant. The sectors in the “Gaining” and “Diminishing” quadrants (with the exception of Meat Manufacturing) were very close to having a neutral competitive effect. The change in employment over the 2010-2015 period was in line with expectations based on how the sectors performed in the broader economy.

Farms were the second largest sector by employment in the GGH region (just slightly behind Food Merchant Wholesalers). Even though Farms’ PLQ shows they are the most under-represented of all the agri-food sectors, they are still one of the major sources of economic activity. Not surprisingly, a sector’s PLQ was correlated with how close to the primary production end of the supply chain it was. Farm suppliers had low PLQs indicating that the sector is underserved in comparison to areas outside of the GGH. This sector is increasing use of mobile service vans and other technologies to maintain service to this market.

Food processors, for the most part, hover around 0 competitive effect but are significantly over-represented. Bakeries and Tortilla manufacturers have the highest PLQ of all sectors within the agri-food industry followed by Sugar and Confectionary and Beverage Manufacturing.

Two sub-sectors that outperformed in the GGH are Special Food Services and Food Wholesaling. This is not surprising given the significant population within the GGH and the regions’ geographic location at the intersection of two major international transportation corridors.

The underperformance of the Fruit and Vegetable Preserving sector is concerning, given its strategic importance to maintaining and growing the economic activity created by the agri-food sector in the region. On a percentage basis this sector had the most significant under performance by a wide margin. This reduction of fruit and vegetable processing underlines the reliance on fresh markets for current fruit and vegetable production with are highly seasonal and also subject to volatility due to weather/climate issues. The Meat Product Manufacturing sector is also underperforming relative to the sector in the rest of the province.

## Enablers and Inhibitors

There are a number of factors that will either enable or inhibit the further growth and development of the Agri-Food cluster in the Greater Golden Horseshoe. Most are present regardless of which sector or strategy is being considered. Many are referenced in the individual descriptions of the focus sectors later in this report. The following is a high level overview of these forces impacting the sector.

### Enablers

<b>Workforce</b>	Access to an appropriately skilled workforce is critical regardless of which sector is being considered. The large, diverse population of the GGH is a source of workers which can enable sector growth.
<b>Water</b>	The Great Lakes Basin has the largest source of fresh water in the world. It also has one of the most reliable and uniform precipitation patterns in the world. Water is critical at both the primary production and processing level for most foodstuffs.
<b>Micro-climates</b>	The GGH has a range of micro-climates that have advantages for a range of different crops. The Niagara Peninsula is the prime example of this. The Niagara Escarpment also provides Hamilton, Halton, Peel and Dufferin with micro-climates. Similarly, the Oak Ridges Moraine in York and Durham combined with lake effect weather also provide a range of micro-climates. Simcoe County has a range of microclimates due to Georgian Bay.
<b>Climate Change</b>	While most discussions of climate change tend to focus on the negative impacts, most long-range models are predicting that southern Ontario will become warmer and wetter (albeit with increased variability). This has the potential to increase the diversity of crops that can be grown successfully in the GGH.
<b>Food Trends</b>	There is an ever deepening bifurcation of the North American and global food industry between commodities and value-added, advanced, specialized food products. The Ontario industry is well positioned to take advantage of the group of trends leading towards increased convenience, increased health and environmental attributes, local food and increased demand for global flavours. <i>Food trends will be discussed in more detail later in this report.</i>
<b>Proximity to Consumers</b>	The GGH is positioned centrally within one of the largest populations in North America. Growers and processors in the GGH have access to transportation networks and can competitively serve Ontario, the Eastern Seaboard of the United States and the Greater Chicago Area.
<b>Canadian Dollar</b>	The recent weakness in the Canadian Dollar relative to the US dollar is giving GGH producers and processors a competitive advantage in both domestic and export markets (local sourcing may be more cost competitive than imported ingredients and products)

## Inhibitors

<b>Energy Prices</b>	Energy costs in Ontario, especially electricity are among the highest of any jurisdiction in North America. Energy cost is a key consideration when locating a food processing plant. For those processors that need both heat and power, the low cost of natural gas means investing in a Combined Heat and Power (CHP) generating system can have positive returns.
<b>Transportation</b>	Surface transportation routes in the GGH are increasingly congested. Congested traffic results in unreliable travel times in a sector where reliable delivery times are critical for both the inputs and product shipments. Specifically, the congestion in the Golden Horseshoe is one factor contributing to processing plants moving to the periphery – it is easier to travel around the GH and access from outside the GH than it is to be located in the GH and have to travel through the congestion. In addition, efficient transportation to US markets is needed but can sometimes inhibit growth.
<b>Access to water</b>	While there is currently the appearance of abundant water supplies, the level of human water takings in the Great Lakes Basin is rising towards a level of concern <sup>5</sup> . Water is a critical resource for food production and access for processing and crop irrigation is critical to the growth of the industry.
<b>Inertia</b>	The long-term trend in the GGH is contraction of agriculture and food processing. The canning plants that once dotted the GGH from Durham Region to Niagara have closed, were not replaced with modern preservation processes and the farms have switched away from producing processing crops. Meat production and processing are gradually exiting the GGH and the livestock infrastructure with them. While there are examples of farms and processors succeeding against the trend, a lot has already been lost that won't be easily recreated.
<b>Gentrification</b>	The industrial core of Toronto is slowly gentrifying, as is the agricultural landscape in the GGH. Condominiums are replacing industry along the lakeshore. The vibrant farming communities that formed in the 19 <sup>th</sup> and 20 <sup>th</sup> centuries to supply the growing population in the GGH have been replaced with a peri-urban zone where primary agriculture and processing activities often conflict with new residents moving into the area.
<b>Regulations</b>	Regulations at all levels of government (federal, provincial and municipal) often create challenges and costly delays for food and beverage businesses, especially new establishments. In some cases,

<sup>5</sup> <http://www.theglobeandmail.com/news/politics/ottawa-must-spend-more-to-ensure-health-of-great-lakes-report-says/article28275479/>

	regulations administered by different Ministries or different levels of government are contradictory which also creates challenges <sup>6</sup> .
<b>Market Risks</b>	Some farmers are reluctant to try new crops or enter new markets due to production risks, memories of past plant closures, and reluctance to commit high-value land for a long-term crop (e.g. new orchard). New entrants to farming face a challenge of high investment with modest returns in the short-term. Some new crops are not covered by any production insurance or risk-management program. Entering the retail grocery channel has also been a barrier for farmers who cannot provide consistent high-volume supplies needed by that channel.

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<sup>6</sup> Examples of regulatory challenges include using urban planning policies in a rural area or confusion over waste water regulations for certain agricultural uses.

## Food Trends Overview

As discussed in the Enablers section above, the large, diverse population in the GGH region provides a significant opportunity for producers and other agri-food businesses in the region to capitalize on emerging and niche food trends. Food trends are always changing and evolving. As identified in the GHFFA Economic Profile of the region, there are several “demand-side” trends that offer growth opportunities for the businesses in and around the GGH region. These trends build on the demographic changes that the general population in Canada is older, more educated and more ethnically diverse than in the past. Any sub-sector growth opportunities and economic development activities should be in line with food trends to maximize the possibility for success.

Key food trends that will impact the demand the GGH region include:

### Health and wellness

The awareness of health and wellness has increased the trend toward low carbohydrate, low trans-fat and saturated fat content, gluten free, allergen free, and in some cases, organic foods. For example, a report by the Canadian Agri-Food Policy Institute found that over a five-year period ending in 2010, 92% of food companies launched (39%) or reformulated (61%) products to improve healthfulness<sup>7</sup>.

Intolerance Foods: Intolerance foods, such as gluten free, lactose free, etc. are also a growing trend. Food intolerances refer to hyper-sensitivities to a food, beverage or food additive; intolerances include both self-diagnosed and medically confirmed conditions<sup>8</sup>. Common intolerant food/ingredients include peanuts, soy, milk, eggs, shellfish, and wheat and other cereal grains which contain gluten. As mentioned earlier, North American consumers are becoming more health-conscious and are looking towards dietary changes to help mitigate and prevent certain diseases as well as allergies<sup>9</sup>. With a value of US \$161.3 million, the Canadian market for intolerance foods is ranked 10<sup>th</sup> in the world. Of particular interest is the trend towards gluten-free food options. Many consumers who are not gluten intolerant are looking towards gluten-free foods for weight control and health issue prevention.

<b>Food Trends:</b>
<b>Low carb</b>
<b>Low trans fat</b>
<b>Low saturated fat</b>
<b>Gluten free</b>
<b>Lactose free</b>
<b>Organic</b>
<b>Raw food</b>
<b>Whole food</b>

Exclusion/Elimination Diets: In an attempt to identify problematic foods within one’s diet and to mitigate health concerns, an increasing number of consumers are following an exclusion or

<sup>7</sup> [The Canadian Agri-Food Policy Institute - Project 5: Consumer Markets - Differentiate to Compete: The Consumer Perspective, May 2014](#)

<sup>8</sup> [Agriculture and Agri-Food Canada: Health and Wellness Trends for Canada and the World, October 2011](#)

<sup>9</sup> [Agriculture and Agri-Food Canada: Health and Wellness Trends for Canada and the World, October 2011](#)

elimination diet; where certain foods or food types are completely removed from one's diet<sup>10</sup>. In a report by the Food Marketing Institute, *U.S. Grocery Shopper Trends 2014*, it was found that a third of adults have experimented with exclusion diets (e.g. gluten-free, lactose-free, raw foods, dairy-free, etc.)<sup>11</sup>. Consistent with the intolerance food trends identified earlier, food restrictions and allergies significantly influence the foods consumed by 1 in 10 individuals<sup>12</sup>.

**Whole Foods Nutrition:** Another trend related to the increase in health conscious consumers is that of whole food diets. A whole foods dietary regimen consists of food that is minimally processed and are close to their naturally produced form (e.g. whole grains, fruits and vegetables, chicken breast, etc.)<sup>13</sup>. According to the International Food Information Council's *2014 Food and Health Survey* whole grains were the most whole food type ingredient consumed<sup>14</sup>. In 2013, over a third of the best-selling new foods and beverages claimed to have health benefits attributed to the use of real fruits<sup>15</sup>.

### **Convenience**

Convenience food trends include ready to eat/heat and eat foods, one dish meals and portable meals for people on the go. In Canada, there is considerable evidence for the growth of this emerging trend. Home meal replacement (HMR), as the trend is known in the industry, is a \$2.4-billion market in Canada; making it the fastest-growing segment in foodservice<sup>16</sup>. Accounting for 7% of sales, HMR has been the fastest growing segment of grocery retail in Canada in the past 5 years. It is expected that consumer traffic within the HMR grocery section will increase by another 10% in the next 5 years as well. The benefits of HMR growth are not just for grocery stores in urban areas. Rural and on-farm markets have also been tapping into this trend which promises continued growth.

**Home meal replacement is a \$2.4-billion market in Canada accounting for 7% of sales, making it the fastest-growing segment in foodservice**

### **Fresh Food**

Many consumers see "fresh" food as having better taste, health and nutrition than processed, preserved or frozen foods. In essence, consumers generally feel that fresh foods are better for them. This consumer view is supported by recent US studies revealing that nearly 90% of adults think fresh foods are healthier, 80% think fresh foods are tastier, and 78% of them are increasing their commitment to eating more fresh foods in their diet, as opposed to processed<sup>17,18</sup>. These results are further supported in the Food Management Institute's *U.S.*

<sup>10</sup> Food Marketing Institute – U.S. Grocery Shopper Trends 2014

<sup>11</sup> Food Marketing Institute – U.S. Grocery Shopper Trends 2014

<sup>12</sup> Packaged Facts – Food Formulation Trends: Ingredients Consumers Avoid, 2014

<sup>13</sup> [International Food Information Council Foundation - 2014 Food and Health Survey](#)

<sup>14</sup> [International Food Information Council Foundation - 2014 Food and Health Survey](#)

<sup>15</sup> IRI – New Product Pacesetters, 2014

<sup>16</sup> [The Financial Post - Craving Fresh over Fake: How the Growing Trend is Making Waves in Packaged Foods, August 2014](#)

<sup>17</sup> Technomic – The Healthy Eating Consumer Trend Report, 2014

<sup>18</sup> MSI – The 2014 Gallup Study of Cooking Knowledge and Skills

*Grocery Shopper Trends 2014* Report which shows that consumers are purchasing 10% more fresh ingredients than they did only 3 years ago<sup>19</sup>.

### **Ethnic Foods**

Immigration and visible minority groups have increased dramatically which will continue to create opportunities for Asian, Middle Eastern and Mediterranean inspired foods. It is expected that in Canada, over the next 10 years some 70% of the growth in consumer spending will be driven by ethnicity<sup>20</sup>. This trend maybe even more pronounced in the GGH region due to the higher-than-average concentration of new Canadians. Evidence of this is that “In the Greater Toronto Area alone the market share of “ethnic grocers” climbed from 2% (2006) to over 9% (2014). Many products serving these outlets are imported, suggesting that this may present a potential market opportunity that some Canadian food processors can more fully address.”<sup>21</sup> The GTA, as the Greater Golden Horseshoe’s largest consumer base, provides a significant opportunity to the Greater Golden Horseshoe region in supplying ethnic foods, including fruits and vegetables.

### **Millennial Generation**

Even within the context of the food trends identified here, different generations have different views. Health conscious older shoppers gravitate toward low calorie, low fat, low sodium, and low sugar food options. Millennials, on the other hand, are more inclined to base their health conscious choices on ingredients they recognize and that make prominent product claims about the ingredients or benefits<sup>22</sup>. Millennial consumers also tend to prefer smaller portions and meal replacements in lieu of the traditional three square meals. A Pew Research Center study in 2009 observed that millennials are “the most ethnically and racially diverse cohort of youth in the nation’s history.”<sup>23</sup> This diversity drives both the ethnic food trends identified above, but also creates a demand for ethnic hybrid foods, combining food elements of various cultures to create something new and distinct.

### **Gourmet Foods**

High quality and unique food products are in increasing demand from Canada’s aging consumer. Demand for these high-quality products create opportunities for the agri-food sector in the GGH region to provide high quality, good tasting, local food and beverages. The expansion of micro-breweries are an exciting example of this trend toward higher-end, specialty products. According to the industry association Beer Canada, there are 520 licensed breweries, up 60 percent over five years<sup>24</sup>.

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<sup>19</sup> Food Marketing Institute – U.S. Grocery Shopper Trends 2014

<sup>20</sup> [The Canadian Agri-Food Policy Institute - Project 5: Consumer Markets - Differentiate to Compete: The Consumer Perspective, May 2014](#)

<sup>21</sup> [The Canadian Agri-Food Policy Institute - Project 7 and 8: Conclusions and Policy Implications - Taking the Sector from Trade Deficits to a Competitive Resurgence](#)

<sup>22</sup> <http://www.foodprocessing.com/articles/2015/millennials-emerging-food-trends/>

<sup>23</sup> <http://www.qsrmagazine.com/marc-halperin/fulfilling-generation-next>

<sup>24</sup> Reith, T. (2015, June 24). Microbreweries not a pint-sized industry anymore. *CBC News*

## Organic

The Golden Horseshoe Food and Farming Alliance identified organic food as a trending opportunity for the Golden Horseshoe in a report, *Agriculture and Agri-Food Economic Profile for the Golden Horseshoe, 2014*. According to the report, Canadian

**The Ontario direct-to-consumer organic market is valued at over \$192 million, representing 17% of the Ontario organic retail market**

consumers increasingly favour organic farming and organic food consumption. It is suggested that this increase in perceived knowledge is currently increasing the demand for organic foods and foodstuffs<sup>25</sup>. In Ontario, the number of certified organic farms has increased dramatically from around 150 in 1992 to just under 700 in 2010<sup>26</sup> which is also only a small fraction of the total number of farms. An increasing trend in Ontario is that organic food producers are also benefiting from the direct to consumer market route. The Organic Council of Ontario suggests that the direct to consumer organic market in Ontario is valued at over \$192 million; representing 17% of the \$1.13 billion Ontario organic retail market<sup>27</sup>. With a large urban population base surrounding the large number of farms in the GGH region, direct to consumer marketing of organic food is a growing opportunity.

## Socially Conscious

Not only are Canadian consumers becoming increasingly more aware of the impact which the food they eat has on their own health wellness, they are also becoming increasingly concerned about how their food choices may impact the health and wellbeing of others, animals, and the environment. Consumers are increasingly taking into consideration a products positioning on various issues, including: the environment, method of production, and their own values<sup>28</sup>. Consumer reactions have the potential of swaying both positively and negatively; they can buy products that align with their values and beliefs or resist those that do not<sup>29</sup>. Food companies are always trying to address the ever changing values and decision making factors used by their customers. For instance, Loblaw's has pledged to source 100% of its seafood from sustainable sources in 2013<sup>30</sup>. Other Canadian retailers have similar pledges. Unilever, which sources some 6% of the world's tomatoes and 5% of its onions, has pledged to source 100% of its agricultural raw ingredients sustainably<sup>31</sup>. In the United States, it was found that various aspects of sustainability significantly influenced consumers; these include conserving the natural habitat, reducing the amount of pesticides, and producing more food with less natural resources<sup>32</sup>. Findings also suggested that the perception of higher quality products and

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<sup>25</sup> Golden Horseshoe Food and Farming Alliance – Agriculture and Agri-Food Economic Profile for the Golden Horseshoe, 2014

<sup>26</sup> [Organic Council of Ontario - Certified Organic Production Ontario 2010, May 2011](#)

<sup>27</sup> [Organic Council of Ontario - Ontario's Organic Food System Factsheet, 2012](#)

<sup>28</sup> [Agriculture and Agri-Food Canada: Socially Conscious Consumer Trends - Sustainability, November 2012](#)

<sup>29</sup> [Agriculture and Agri-Food Canada: Socially Conscious Consumer Trends - Sustainability, November 2012](#)

<sup>30</sup> [Loblaw - 2013 Corporate Social Responsibility Report](#)

<sup>31</sup> The Conference Board of Canada – Transformational Company Webinar: A Model to Advance Sustainability, Tackle Risks and Embrace Opportunities, January, 2013

<sup>32</sup> [Agriculture and Agri-Food Canada: Socially Conscious Consumer Trends - Sustainability, November 2012](#)

concerns for the environmental and human welfare were the main drivers for purchasing sustainable food products in the United States<sup>33</sup>. Animal welfare is another growing topic of interest among food and beverage businesses. Large food retailers, such as Tim Hortons, Wendy's and the Retail Council of Canada announced that by 2022, they will phase out sourcing pork from producers who use gestation crates<sup>34</sup> Most recently, Egg Farmers of Canada has announced that its members will not install any new battery cages and will begin an industry-wide transition to alternative production methods for its egg-producing hens over the next 20 years<sup>35</sup>.

The diagram below from the Canadian Agri-food Policy Institute illustrates the many aspects which Canadian consumers are considering more and more when buying their food<sup>36</sup>.

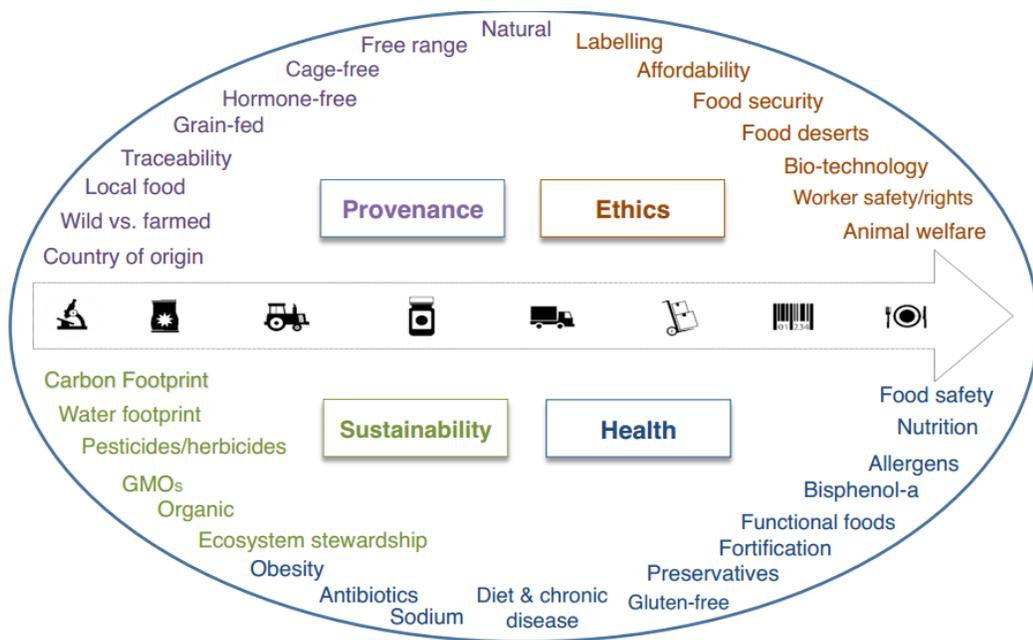


Figure 18: Canadian Agri-Food Policy Institute - Laying the Groundwork for Innovation, 2014

<sup>33</sup> [Agriculture and Agri-Food Canada: Socially Conscious Consumer Trends - Sustainability, November 2012](#)

<sup>34</sup> [The Toronto Star](#)

<sup>35</sup> CBC News: <http://www.cbc.ca/news/business/cage-free-eggs-1.3435333>

<sup>36</sup> [Canadian Agri-Food Policy Institute - Laying the Groundwork for Innovation, 2014](#)

## Subsector Analysis

The following section provides a deeper analysis into each of the key sub-sectors identified in the previous section of the report.

The bubble chart figures in the previous section are based on a combination of change over time and point in time data. It provides a snap shot of each sector's performance relative to each other, but sometimes does not clearly illustrate longer term trends. This section includes a figure for each sub-sector with the location quotient and aggregate jobs for the period 2001-2015. Interpretation of these figures is that as the PLQ line moves up, the concentration of the sector in the GGH is increasing relative to the sector's concentration in the provincial economy.

### Farms

The farming sector is under-represented in the GGH area relative to the overall economy and employment change in the sector was slightly negative compared to the overall industry but not materially. This change is consistent with the occupational data analysis in the previous section of this report.

The following figure presents the provincial location quotient and aggregate jobs for the period 2001-2015. As the PLQ line moves up, it means that the concentration of the sector in the GGH is increasing relative to the sector's concentration in the provincial economy.

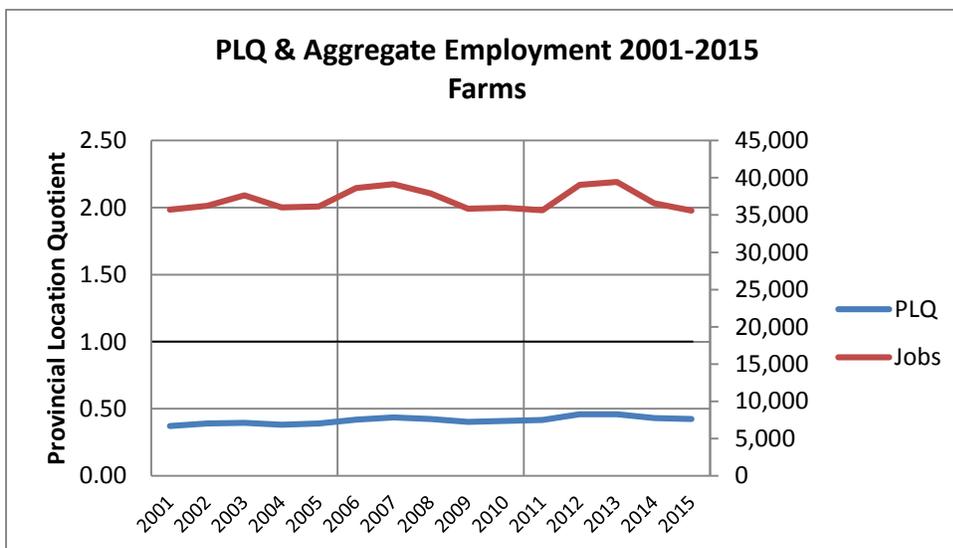


Figure 19: EMSI Analyst – Q3 2015 Data Set

On-farm jobs, both employees and self-employed, in GGH region have been relatively stable since 2001. Economic activity on farms is under-represented in GGH compared to farms in the rest of the province (the PLQ is less than 1.0) but has been relatively stable for the past decade. It has been hoped that a renewed interest in local food, the increase in farmers' markets,

increasing farm direct sales and non-traditional farmers entering the business would have a more evident and positive impact on the farming sector, however the data does not support it at this time.

The following five maps show farm production assets in the current database. They show the diverse range of products and commodities produced in the GGH region as well as some key “hot spot” areas of concentration.

**Figure 20: Livestock Production Assets:** The location of livestock-based farms are plotted by type of livestock which includes beef cattle, dairy cattle, poultry, eggs, swine, sheep and goats. There is a clear pattern in this data. Livestock farms are most prevalent in municipalities the farthest from the urban areas of the GTA. The impact is greater than just the presence of a large urban area. By contrast, the Guelph-Kitchener-Waterloo area, while much smaller than the GTA, is surrounded by a high concentration of livestock farms.

**Figure 21: Cattle Production Assets:** This map shows the concentration of dairy and beef cattle farms plotted by sales per square kilometer. The map highlights areas with smaller farm sizes; greater density of farms equates to smaller average farm area beef animals. It is important to note that about 20% of farm files were missing sales data. However, the missing data was scattered geographically and shouldn't reduce the overall pattern of the heat maps materially.

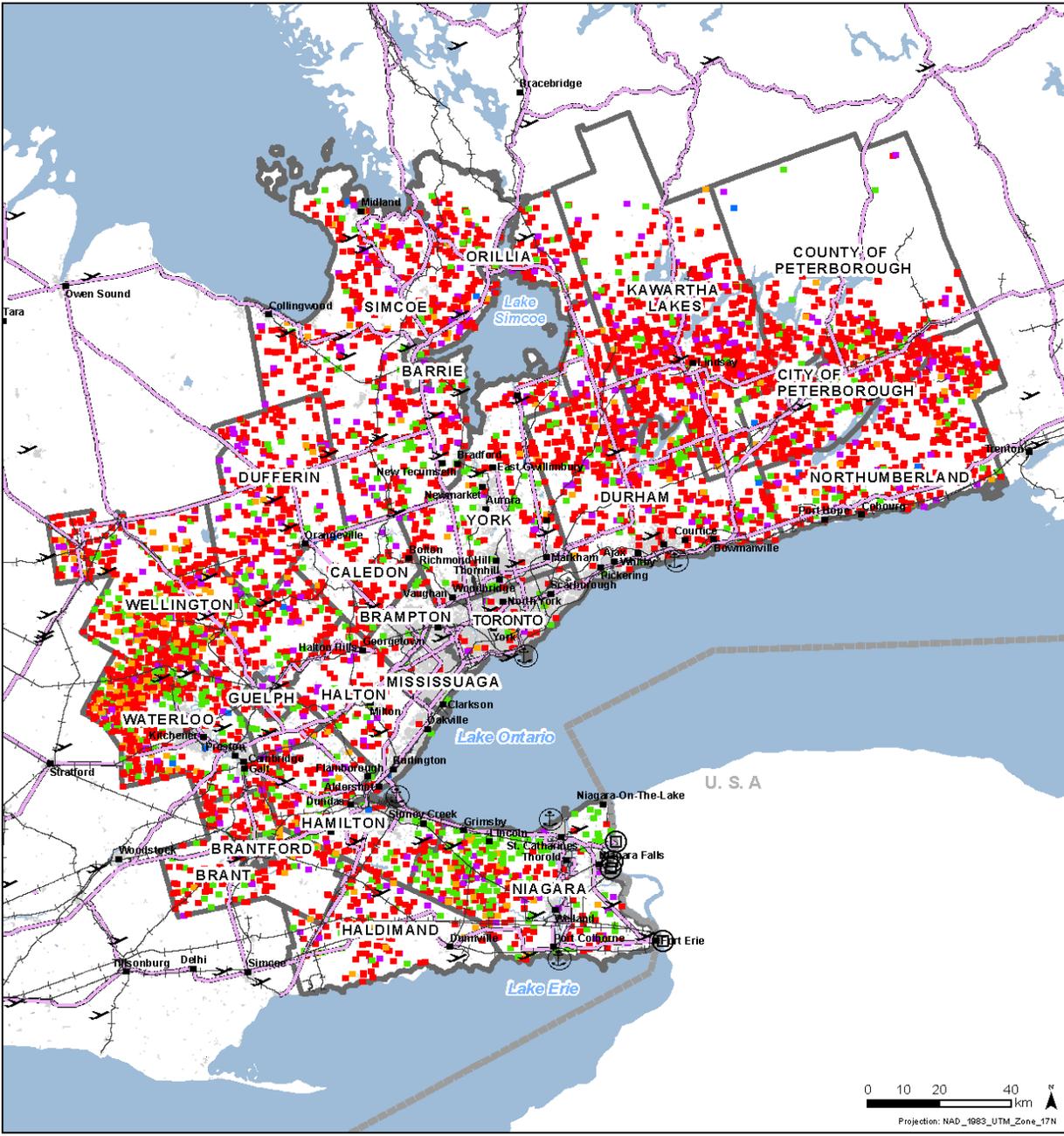
This map clearly illustrates that beef production relegated to the fringes of the GGH. There are some general areas of high concentration of cattle in the North and Western portions of Waterloo Region and Wellington County. There are also some key production areas in Durham, Peterborough and Northumberland. However, the reasons for this are not immediately obvious. At first blush, one might conclude that cattle have moved out of the GTA due to incompatibilities with urban and near-urban development. This explanation is contradicted by the high concentration of beef cattle immediately around the Guelph-K-W-Cambridge area. Possible explanations include the presence of the Cargill beef plant in Guelph, the high degree of mixed farming on Amish and Mennonite farms and significantly less land-banking by speculators in the region. The Waterloo Region also has a number of livestock assembly yards (stockyards) as well as several abattoirs (both small and large). Land “banked” by speculators tends to be used for grain and oilseed crops on a lease-back basis but livestock farming rarely continues.

**Figure 22: Poultry and Eggs Production Assets:** This map shows the concentration of poultry and egg farms by sales per square kilometer.

This map shows a few highly concentrated pockets of production in Niagara, Waterloo and Wellington. The map is relatively sparse in most others areas which reflects a highly concentrated and consolidated sector. A significant egg grading station in Durham East creates a pocket of activity in the area.

**Figure 23: Crops Production Assets:** The variety of colours on the crop map is an indication of the diversity of agriculture that is in the GGH. Not only are the crops diverse but the farms are diversified. The “Other Crops” category contains the farms that were sufficiently diversified that none of the named crop categories was dominant. However, localized micro-climates are evident – specifically the fruit trees on the Niagara Peninsula and the vegetable production on the Holland Marsh.

**Figure 24: Farm Production Assets:** The map of farms per square kilometer highlights areas with smaller farm sizes – greater density of farms equates to smaller average farm area. There is a strong connection between livestock production areas and fruit and vegetable production areas, and higher farm density as shown on the map. The Holland Marsh and Niagara Peninsula are highlighted and therefore have a large number of farms. Similarly, the high density in Waterloo and Wellington is partially a function of the high proportion of Amish and Mennonite farms in that area as they tend to have smaller than average (by area) farms.



<p><b>4-Digit NAICS Codes</b></p> <ul style="list-style-type: none"> <li><span style="color: red;">■</span> Cattle Ranching and Farming (1121)</li> <li><span style="color: orange;">■</span> Hog and Pig Farming (1122)</li> <li><span style="color: green;">■</span> Poultry and Egg Production (1123)</li> <li><span style="color: purple;">■</span> Sheep and Goat Farming (1124)</li> <li><span style="color: blue;">■</span> Aquaculture (1125)</li> </ul>		<ul style="list-style-type: none"> <li style="width: 50%;"> Port</li> <li style="width: 50%;"> Built-Up Area</li> <li style="width: 50%;"> Highways</li> <li style="width: 50%;"> Railway</li> <li style="width: 50%;"> Airport</li> <li style="width: 50%;"> Border Crossing</li> </ul>	
		<p><b>Livestock Production Assets</b>  <i>Agri-Food Asset Mapping</i>  <i>Golden Horseshoe Farming and Food Alliance</i></p>	
		 	
		<p>Produced by 4DM under licence from Ontario MNR,          Copyright Queen's Printer for Ontario, 2016.</p>	

Figure 20

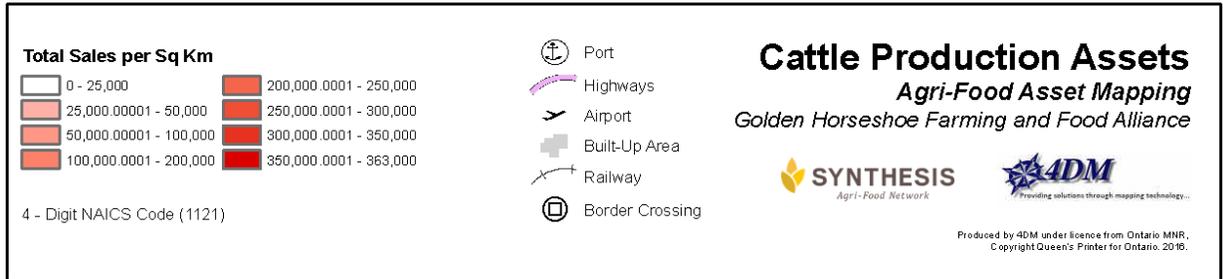
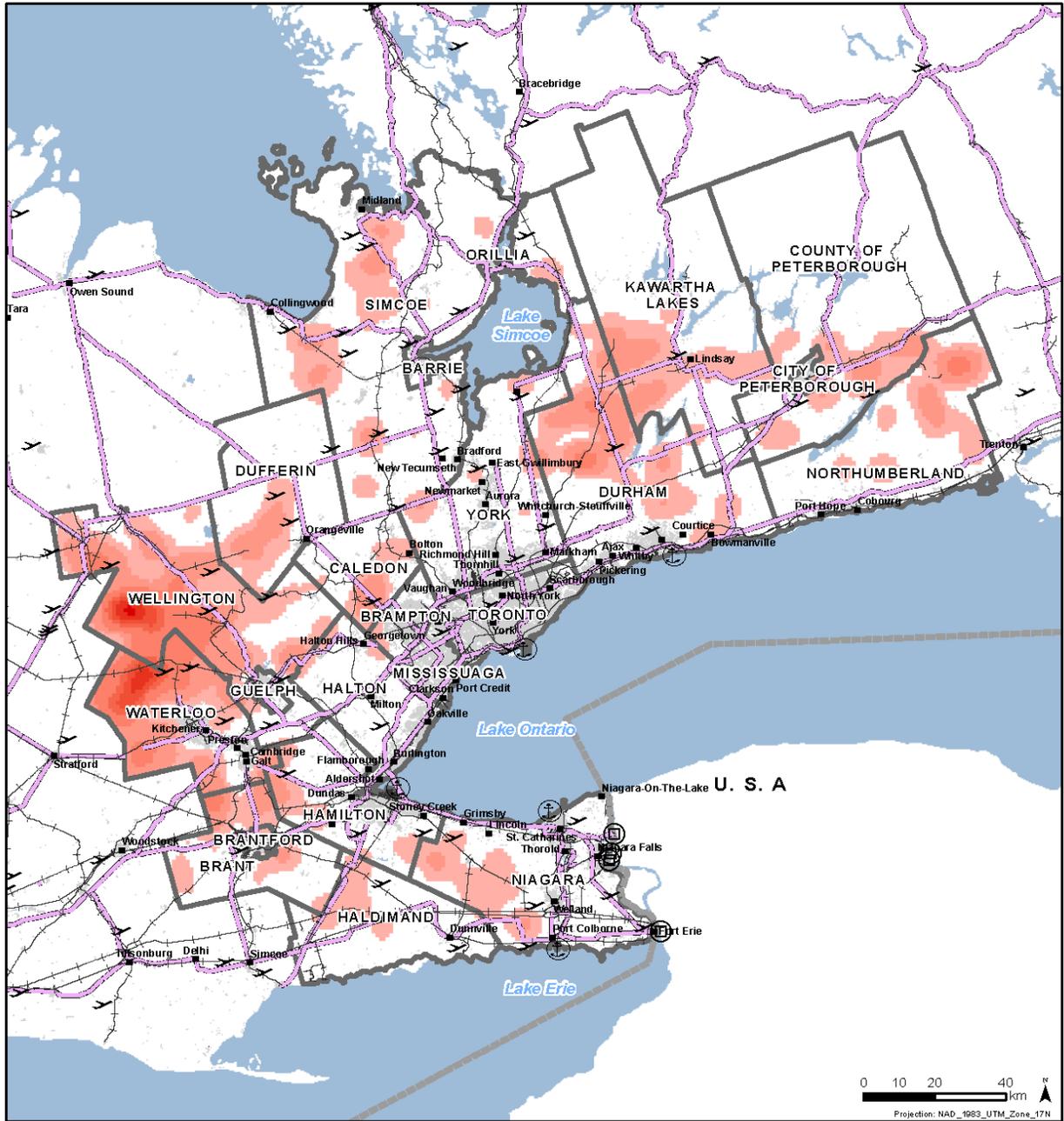


Figure 21

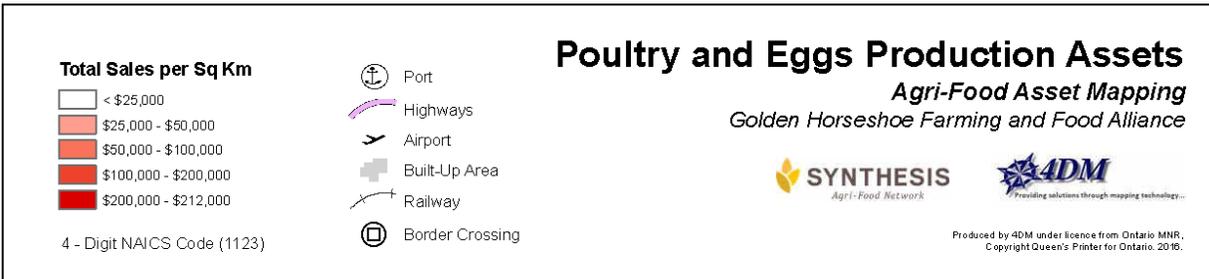
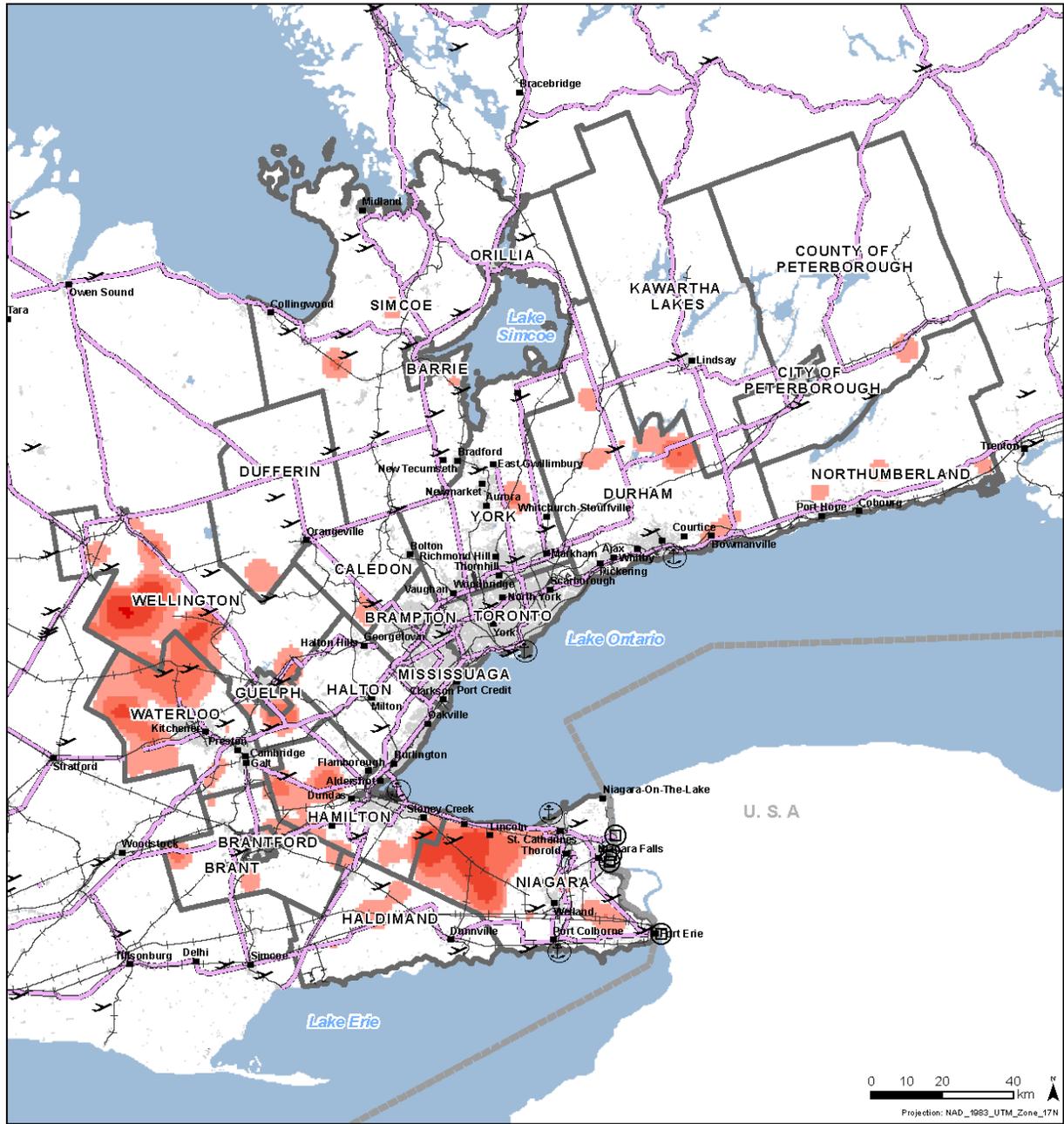
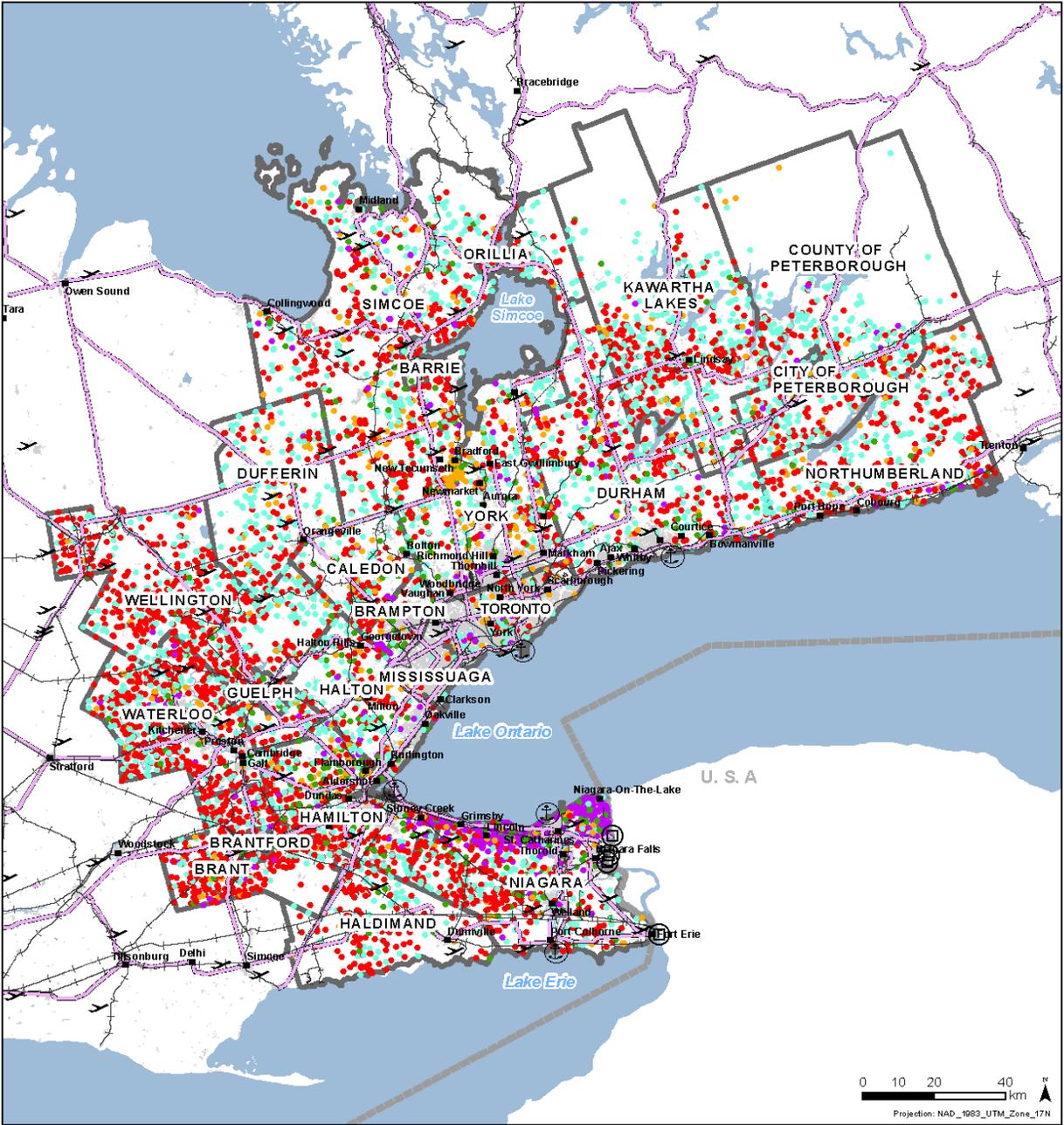
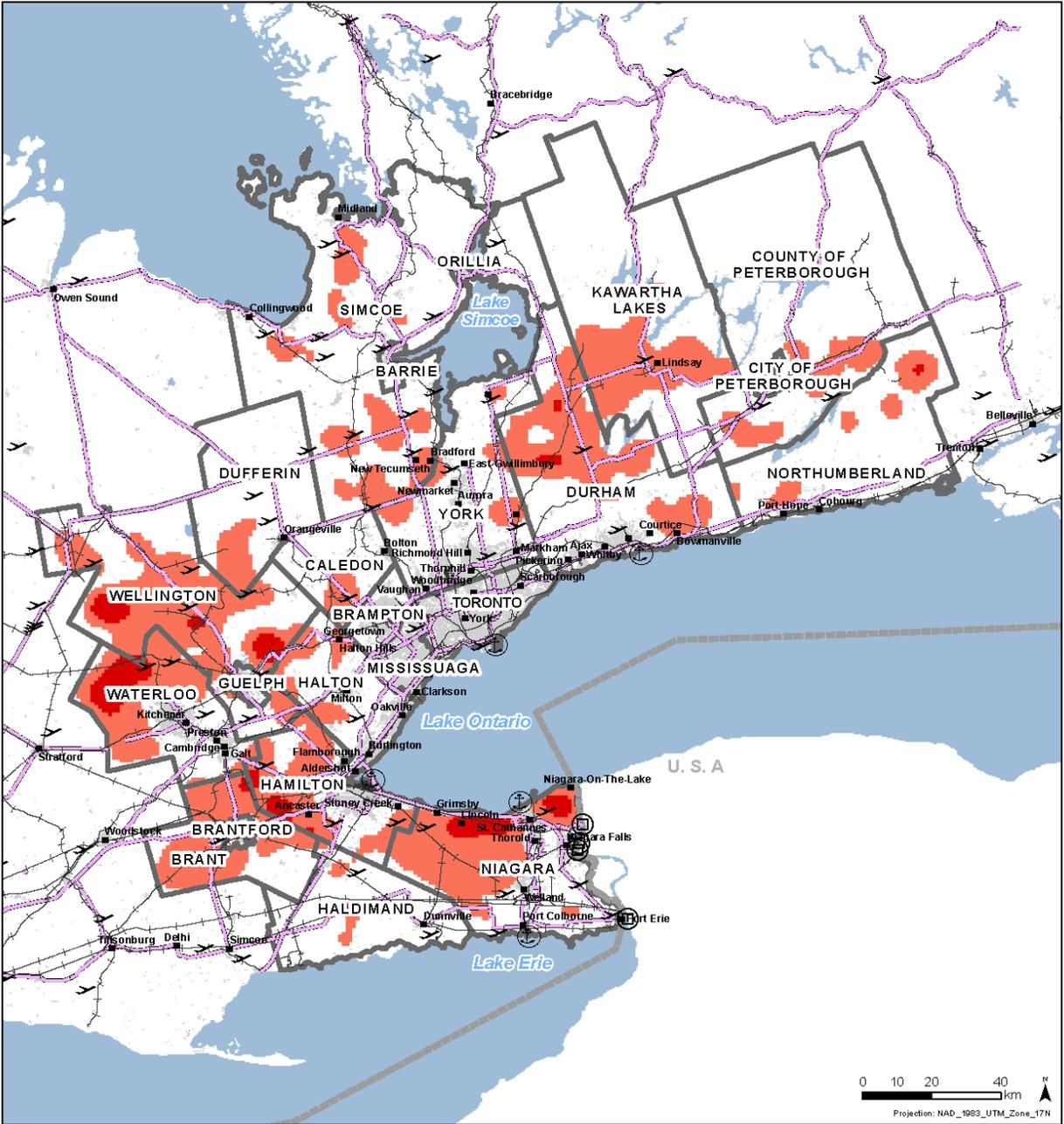


Figure 22



<p><b>4-Digit NAICS Codes</b></p> <ul style="list-style-type: none"> <li>● Oilseed and Grain Farming (1111)</li> <li>● Vegetable and Melon Farming (1112)</li> <li>● Fruit and Tree Nut Farming (1113)</li> <li>● Greenhouse, Nursery, and Floriculture Production (1114)</li> <li>● Other crop farming (1119)</li> </ul>		<ul style="list-style-type: none"> <li>⚓ Port</li> <li>🛣️ Highways</li> <li>✈️ Airport</li> <li>🏠 Built-Up Area</li> <li>🚂 Railway</li> <li>🚧 Border Crossing</li> </ul>		<p><b>Crops Production Assets</b>  <b>Agri-Food Asset Mapping</b>  <i>Golden Horseshoe Farming and Food Alliance</i></p>	
<p>Produced by 4DM under license from Ontario MNR. Copyright Queen's Printer for Ontario, 2016.</p>					

Figure 23



0 10 20 40 km  
 Projection: NAD\_1983\_UTM\_Zone\_17N

<b>Assets per Sq Km</b>		
	< 1	
	1 - 2	
	> 2	

	Port		Built-Up Area
	Highways		Railway
	Airport		Border Crossing

## Farm Production Assets

*Agri-Food Asset Mapping*  
 Golden Horseshoe Farming and Food Alliance

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Figure 24

## Grain/Milling/Bakery Sector

The grain – milling – bakery value chain is arguably the largest and most integrated agri-food sub-sector in the GGH. It is the largest employer and is anchored by a significant number of grain farms as well as a significant number of processing jobs (bakery and tortilla manufacturing). The business structure is very diverse: the sector includes a range of large scale commercial businesses as well as many smaller, niche businesses and includes every step in the value chain from grain and oilseed production, milling and crushing operations right through to bread, frozen bakery products, cookie and cracker manufacturing. Farmers produce a wide range of crops such as several types of spring and winter wheat, a range of oilseed and specialty soybeans as well as corn, oats and barley.

Both grain and oilseed milling and the bakery and tortilla manufacturing sector are in the “thriving” quadrant of the GGH shift share analysis. This is a positive change from the 2015 GH report which placed the bakery and tortilla sector in the “moderating” quadrant. It appears that the sector is slightly stronger when analyzed in the larger GGH context as opposed to just the GH. . This can be viewed as an indicator to watch in the future.

One of the challenges facing this sector is that the bakery market has been relatively flat in recent years. Companies, in particular large operations, are focused on cost reduction and efficiency, as well as new product innovation. The trend toward gluten-free products has impacted the traditional bread category with an estimated 3-5% reduction in sales<sup>37</sup>.

Several of the large players in the market have a significant footprint in the GGH region. Weston Foods, whose brands include Weston Bakeries, Ace Bakeries and Ready Bake Foods, is a leading player in the large scale commercial bakery market and has several locations in the GGH. Canada Bread, formerly owned by Maple Leaf Foods and sold to Grupo Bimbo in 2014, is also a strong market leader. Canada Bread has undergone a large restructuring in the past five years to consolidate and modernize its plants<sup>38</sup>. Three plants were closed: Kitchener, Toronto and Stoney Creek, and a new facility, billed as Canada's largest bakery plant, was constructed in Hamilton<sup>39</sup>.

The grain-to-bakery value chain benefits from a large population base in the GGH region and relies on the transportation networks that exist. Port access for grain export and import and major highways enable close access to ingredient supplies and to the market. The Port of Hamilton was recently selected as a location for a new large scale flour milling operation. The new P&H Milling Group mill is reported to be a \$45 Million investment and will be the first new flour mill constructed in Ontario in the past 75 years<sup>40</sup>. Close proximity to border crossings provides access to the US market as well as an opportunity for imported products.

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<sup>37</sup> Estimate based on phone interviews with industry leaders

<sup>38</sup> <https://www.canadabread.com/grupo-bimbo-completes-acquisition-canada-bread>

<sup>39</sup> <http://www.thespec.com/news-story/4167979-no-fear-of-job-losses-at-canada-bread-s-hamilton-bakery/>

<sup>40</sup> Source: <http://www.cbc.ca/news/canada/hamilton/news/new-45-million-bulk-flour-mill-announced-for-hamilton-port-1.3354008>

Energy costs and regulations have been identified as key challenges for this sector. Bakeries need a high volume of either electricity and/or natural gas to operate and higher energy costs are a barrier to further expansion and attracting new investment. Similarly, municipal regulations related to water use, waste disposal and bylaws related to noise and odour have also been mentioned as challenges for the commercial bakery sector. In addition, many of the current locations are within the built-up area of the GTA. As urban congestion and transportation challenges continue to increase, plant locations in the heart of population-dense urban area could become an increasing operational and logistical challenge.

### Grain and Oilseed Milling

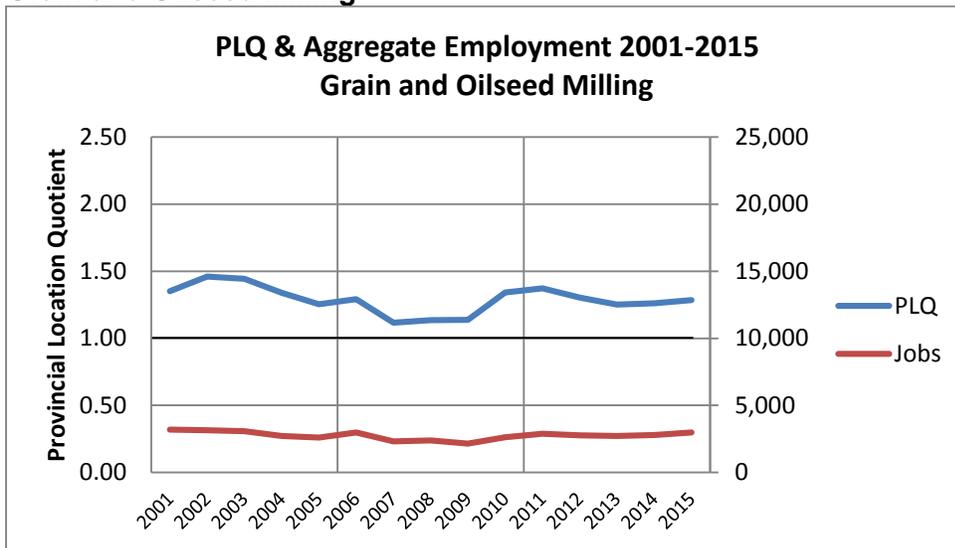


Figure 25: EMSI Analyst – Q3 2015 Data Set

Grains and oilseed milling (NAICS code 3112 – Grains and Oilseed Milling) currently has a PLQ around 1.3 but this has fluctuated significantly over the past 15 years. The sector is currently outperforming the rest of the province and has seen improvement from its position in 2009. Through this 15 year period there have been no significant changes in the number of jobs this area over the time period. It remains a key part of the agri-food value chain that provides a local customer base for Ontario grain farmers as well as a local ingredient supply for bakeries and further processing. In 2015 it was announced that Ardent Mills had purchased a flour mill in Mississauga, Ont. (Peel Region) from current owner Mondelez Canada<sup>41</sup>. This plant has experienced pressure from urban residential expansion in the past.

<sup>41</sup> <http://www.agcanada.com/2015/08/ardent-to-buy-major-ontario-soft-wheat-mill/>

## Bakeries and Tortilla

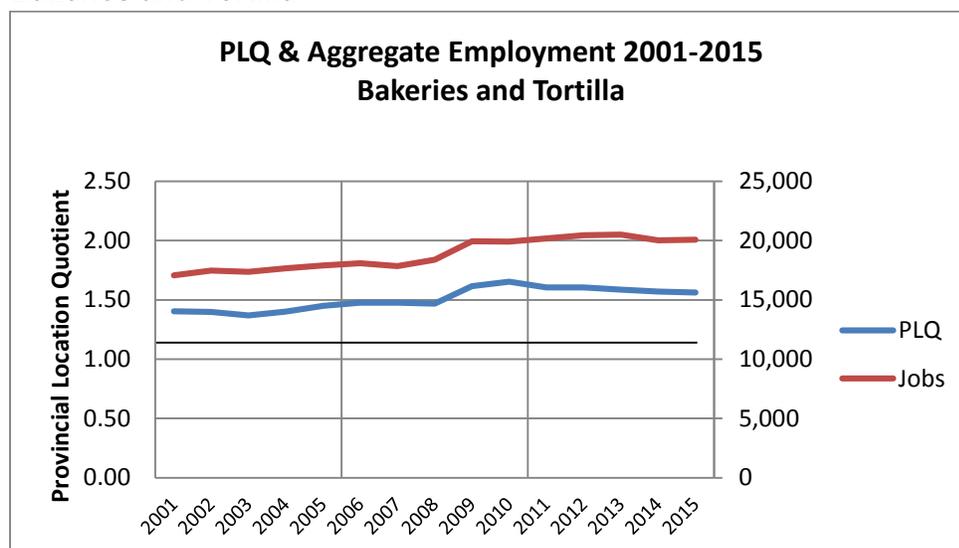
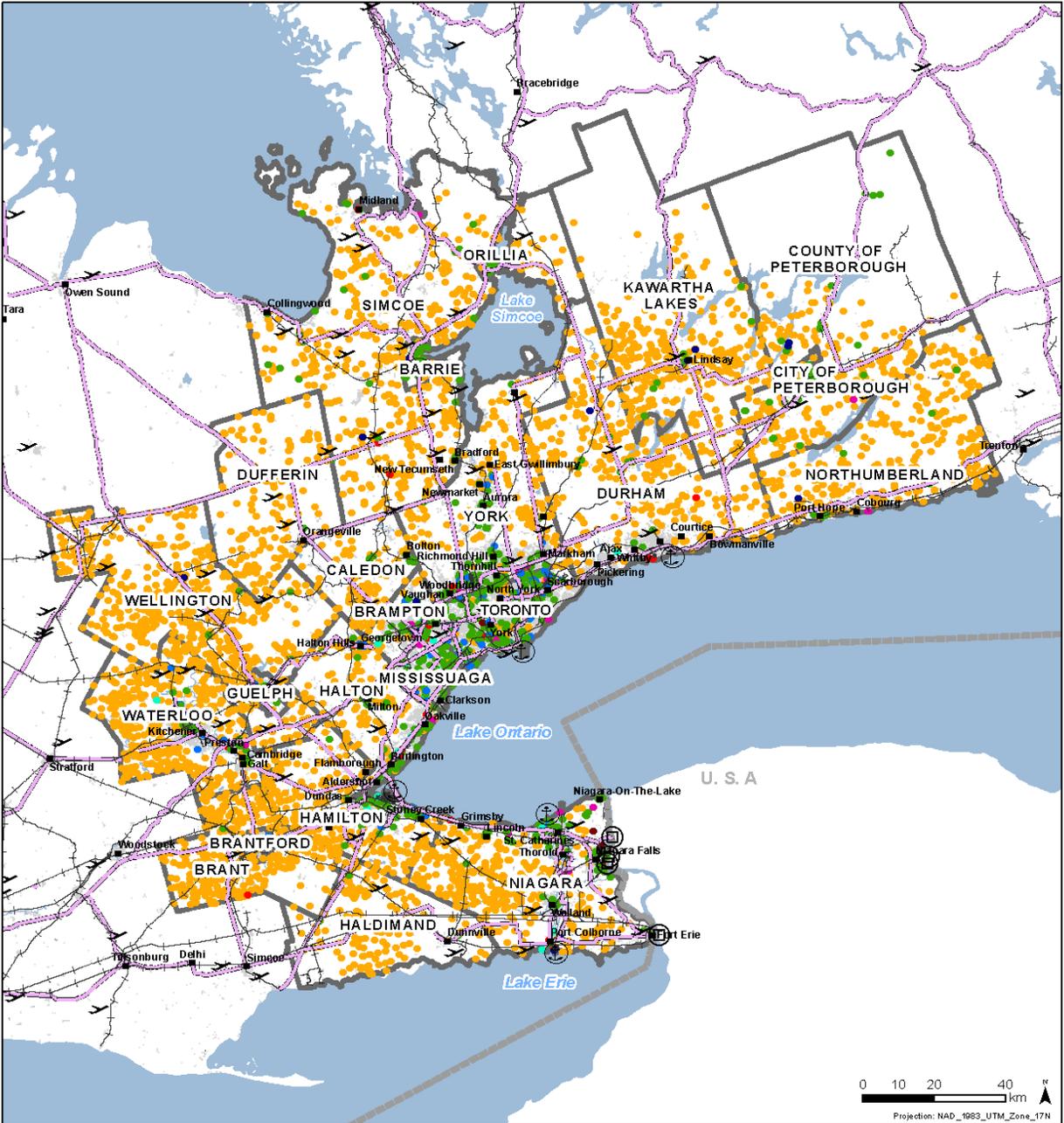


Figure 26: EMSI Analyst – Q3 2015 Data Set

Further processing of grain in this category includes NAICS code 3118 – Bakeries and Tortilla Manufacturing. Analysis of jobs and performance revealed that from 2001 to 2015 the sector in the GGH outperformed its regional counterparts and employment grew. Employment has moderated in the past three years while the industry has grown outside the GGH, as indicated by the slightly declining PLQ. As mentioned earlier, this is still a sector of strength for the GGH region, but more investigation could be done to understand why this sector is not benefitting from overall population growth.

The asset map on the following page (Figure 27) shows a breakdown of sectors by increasing to a 5-digit NAICS code level. As such, in the map below, some sectors have been added or removed as compared to the data above (such as 31191 - Snack Food Manufacturing which has been added to provide a more complete picture of the value chain).

The asset map has revealed that several key assets are located in heavily populated urban areas. As traffic congestion increases, it is likely that some of these facilities, in particular those closer to the primary production stage such as grain milling, could relocate to areas with reduced traffic congestion but that still have easy rail and port access. To retain these facilities in the GGH region for the long term, maintaining port and rail access as well as reducing traffic congestion will be needed.



<p><b>NAICS Codes</b></p> <ul style="list-style-type: none"> <li>● Grain Elevators (493130)</li> <li>● Flour Milling and Malt Manufacturing (31121)</li> <li>● Starch and Vegetable Fat and Oil Manufacturing (31122)</li> <li>● Breakfast Cereal Manufacturing (31123)</li> <li>● Bread and Bakery Product Manufacturing (31181)</li> <li>● Cookie, Cracker, and Pasta Manufacturing (31182)</li> <li>● Tortilla Manufacturing (31183)</li> <li>● Snack Food Manufacturing (31191)</li> <li>● Oilseed and Grain Farming (1111)</li> </ul>	<ul style="list-style-type: none"> <li>⊠ Border Crossing</li> <li>✈ Airport</li> <li>⚓ Port</li> <li>— Railway</li> <li>— Highways</li> <li>■ Built-Up Area</li> </ul>	<h2 style="margin: 0;">Grain, Milling, &amp; Bakery Assets</h2> <p style="margin: 0;"><i>Agri-Food Asset Mapping</i></p> <p style="margin: 0;"><i>Golden Horseshoe Farming and Food Alliance</i></p> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div> <p style="font-size: small; margin-top: 10px;">Produced by 4DM under license from Ontario MNR. Copyright Queen's Printer for Ontario, 2016.</p>
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Figure 27

## The Meat Processing Value Chain

While livestock and poultry farming is being pushed away from the GTA, meat processing remains close to large population centers, thus supplying its work force. However, its location is moving from the downtown core and waterfront areas of the GTA to the “407 Perimeter”. Pressure from residential growth (houses and condominiums) as well as heavy traffic congestion are major challenges for meat processing operations, especially in Federally Inspected primary processing plants, which are usually larger than Provincially Inspected plants. The combination of dwindling livestock numbers and increasing urbanization make it unlikely that new investment will be made in federally inspected primary processing plants within the core urban areas of the GH.

Meat product manufacturing is still a significant employer, second only to bakery and tortilla in the processing sector. While the employment level has been relatively stable over the last fifteen years, the recent trend shows downward pressure on overall jobs. Some of the downward pressure could be attributed to increased imports that are in some cases private label products for major grocery retailers. In addition, there are continued challenges with finding a workforce willing to work in cold conditions required for a meat plant which leads to reportedly high turnover at some facilities.

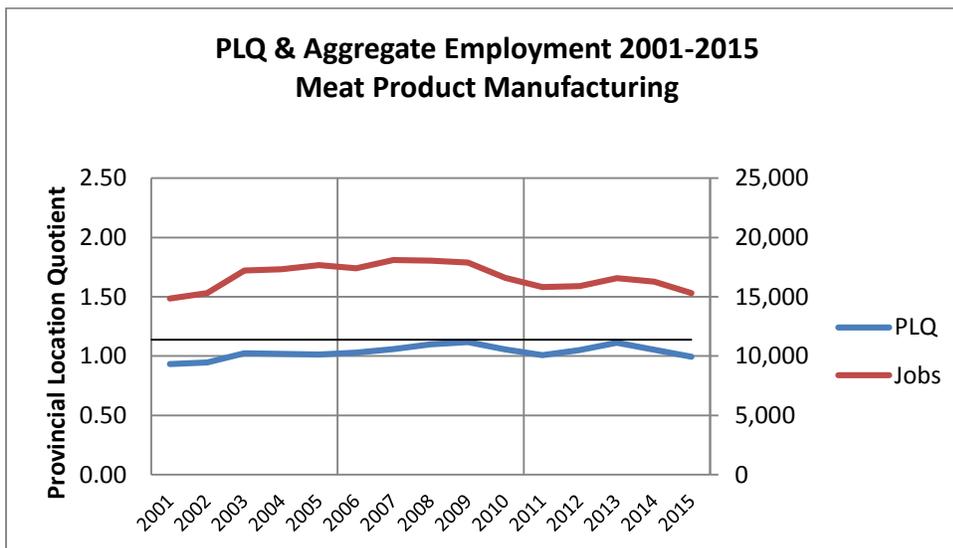


Figure 28: EMSI Analyst – Q3 2015 Data Set

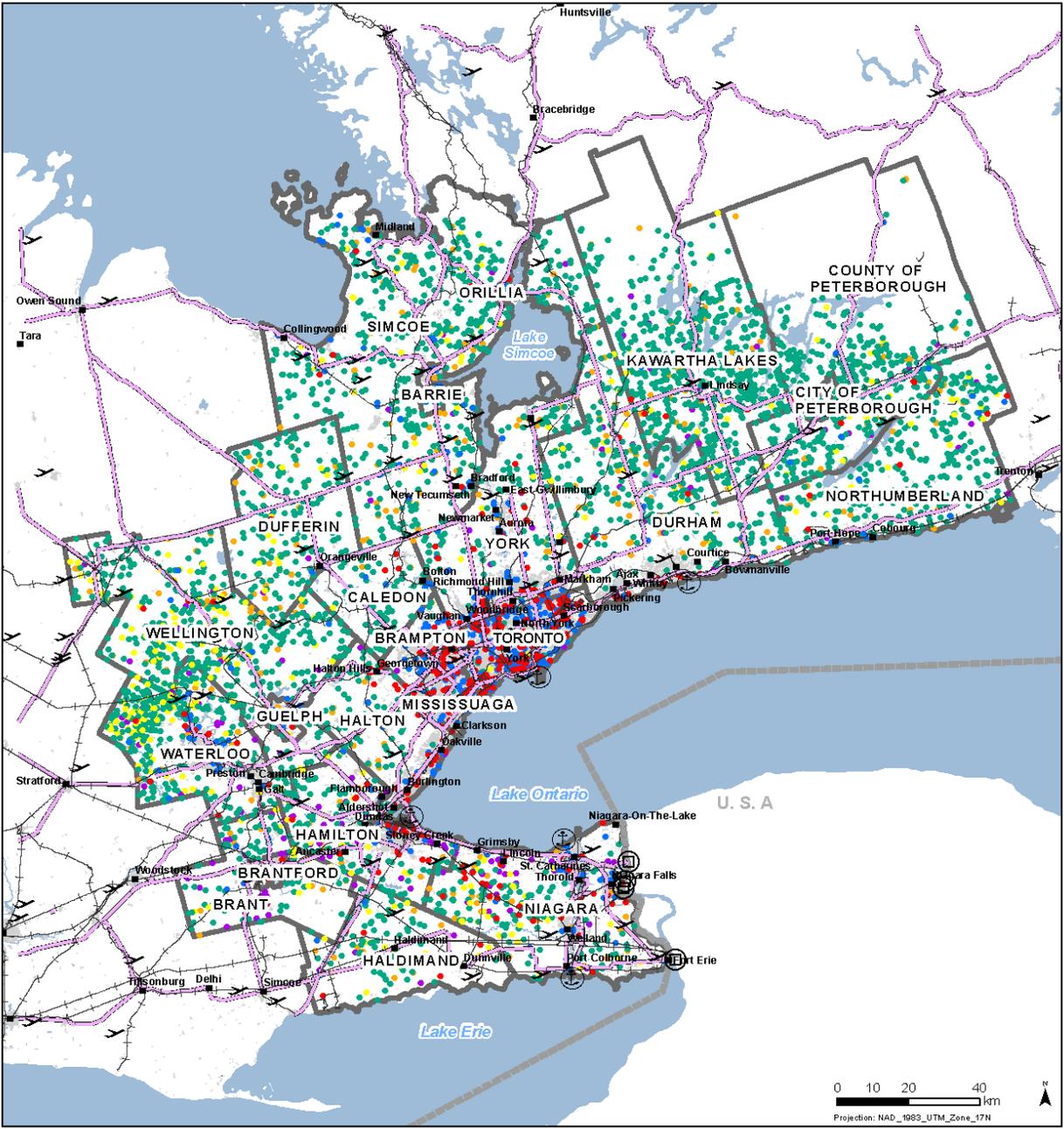
The analysis of Figure 28 shows that PLQ has fluctuated up and down slightly between 0.9 and 1.1 from 2001 to 2015. In the past three years it has been on a downward trend in PLQ to where it currently sits almost exactly representative of the rest of the province. This downward trend is also seen in the number of jobs in the region, with meat manufacturing jobs steadily declining since the recession in 2008.

Figure 28 and the shift-share competitiveness figures in the previous section only display data for NAICS codes to 4 digits (3116 – Meat Product Manufacturing). The map on the following page (Figure 29) illustrates these sectors with increased detail to the 5 digit NAICS level. As such, in Figure 29, the following sectors have been used in addition to the data used in Figure 28 above:

- 11211 - Beef cattle ranching and farming, including feedlots
- 11221 - Hog and pig farming
- 11232 - Broiler and other meat-type chicken production
- 11233 - Turkey production
- 11234 - Poultry hatcheries
- 11239 – Other poultry production
- 11241 - Sheep farming
- 11242 - Goat farming
- 31171 - Seafood product preparation and packaging
- 41111 - Live animal merchant wholesalers
- 41313 – Poultry and egg merchant wholesalers
- 41314 - Fish and seafood product merchant wholesalers
- 41316 - Red meat and meat product merchant wholesalers
- 44521 - Meat markets
- 44522 - Fish and seafood market

Processing assets, a key component required for the value chain to exist, appear mainly in the Peel, York, Toronto and Hamilton area, with a few assets in Niagara.

Distribution assets, as expected, are mainly located in the highly populated urban areas.



**5-Digit NAICS Codes**

- Processing (31161, 31171)
- Distribution (41111, 41313, 41314, 41316, 44521, 44522)
- Beef (11211)
- Swine (11221)
- Poultry (11232, 11233, 11234, 11239)
- Sheep and Goats (11241, 11242)

Port  
 Highways  
 Airport  
 Built-Up Area  
 Railway  
 Border Crossing

**Meat Sector Assets**  
**Agri-Food Asset Mapping**  
 Golden Horseshoe Farming and Food Alliance

SYNTHESIS  
 4DM  
Providing solutions through mapping technology...

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Figure 29

## Fruit and Vegetable

The Ontario fruit and vegetable sector has been under pressure for the last decade and the GGH region has not been immune. In the following figure, the declining PLQ indicates that fruit and vegetable processing is retreating faster than in the rest of Ontario. The GGH region is faced with the challenge of preserving its agricultural land-base in the midst of urban sprawl and rural residential developments. Taking this into consideration, increasing economic output in the agri-food sector will need to occur on a shrinking land-base. Growth at the primary production level requires a shift to higher value crops, such as fruit and vegetables.

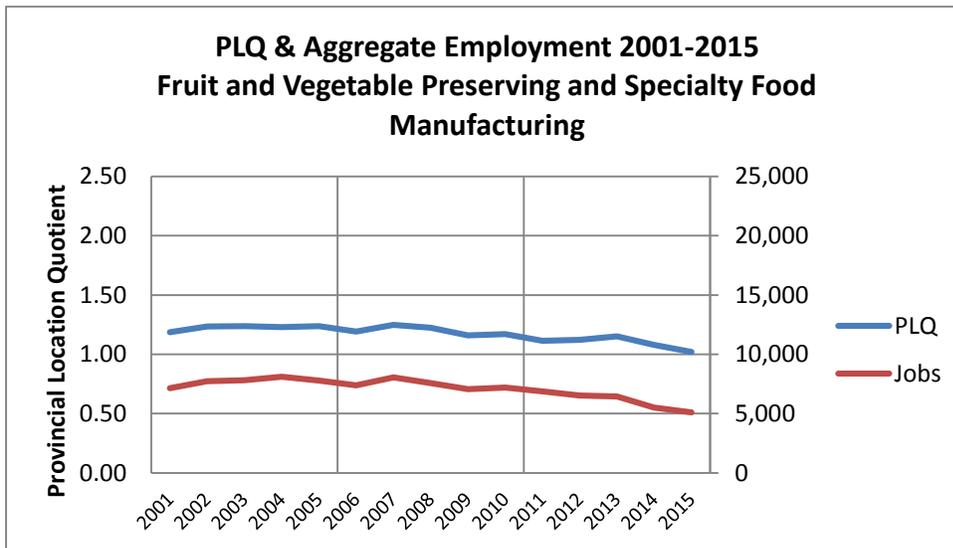


Figure 30: EMSI Analyst – Q3 2015 Data Set

The analysis of Figure 30 shows that the long-term downward trend is accelerating. PLQ has hovered slightly above 1.0 between 2001 and 2015 but is now on a downward slope showing that the GGH region has lost proportionately more jobs than the rest of the province. Similarly, number of jobs is following the same downward trend with an increasing drop since 2013. These trends are disconcerting, however there are opportunities to stabilize and grow this sub-sector.

Historically, the GGH region, and the smaller GH region in particular, has been home to a significant portion of Ontario's fruit and vegetable production. The Niagara Peninsula, Holland Marsh and various parts of Durham Region still have significant production. Producers in the GGH are well positioned to not only meet demand in Ontario but also the Eastern Seaboard of the United States. The fastest way to achieve significant growth for this sector is to increase the demand for fresh and processing vegetables grown in Ontario.

Frozen food is one of the largest grocery and food service categories. It is an alternative to fresh, canned or cooked food and includes vegetables & fruits, potatoes, frozen ready meals, meat and seafood. The major factor driving the growth of the frozen food market is convenience

(mentioned previously in this report). These products often are peeled, shredded, pre-cut and ready to cook or eat. They are viewed as more convenient by many consumers because no washing or cutting is needed. In the fruit and vegetable segment, stand-up pouches are quickly becoming the preferred package type by many consumers.

The frozen format has in many respects replaced the canned segment of the past. Ontario, and the GGH region in particular, has lost many canning facilities in the past decade, however this processing capacity has not been replaced. There are only a few individual quick freeze (IQF) facilities in Ontario, despite the growth potential of this category and format. IQF capacity is an area for potential investment that warrants further investigation.

As indicated previously in the 2015 GH report, the overriding trend in fruit and vegetable production for the last several decades is a general move in production to California. The combination of a favourable climate year-round, abundant water and an available workforce have given California a major competitive advantage. However, there are three forces that have opened a window of opportunity for returning some of that production to Ontario:

1. **Drought:** The long term drought and water shortages in California.
2. **Canadian Dollar:** The decline in the exchange rate between the Canadian dollar and the United States dollar.
3. **Local Food:** The growing local food trend.

### **Drought**

As of 2014, California was in the grips of the worst drought in over a millennium<sup>42</sup>. 2015 saw no improvement in conditions. A 2015 US Drought Monitor map for California presented in Figure 31 on the following page shows that 40% of California is currently classed as D4: Exceptional Drought. The map in Figure 32 shows the prime agricultural areas in California. Almost all of the agricultural land in California is either classed in the Extreme Drought or Exceptional Drought areas. 2015 was the fourth consecutive year that these conditions have persisted. The drought conditions are increasing prices for fruits and vegetables across North America as California is the largest grower of both by a wide margin. Ontario imported \$3.6 billion of fruit and vegetables from the United States in 2014, the majority of which originated in California.

Companies looking to mitigate their exposure to the risk of continued drought in California will be looking for alternative sources. The Great Lakes Basin could be an attractive alternative because of its proximity to major US markets in the Northeast and the Eastern Seaboard, as well as the population of the GGH itself. Ontario will likely be competing with the Great Lakes States to meet this demand.

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<sup>42</sup> Griffin, D., and K. J. Anchukaitis (2014), How unusual is the 2012–2014 California drought?, *Geophys. Res. Lett.*, 41,9017–9023, doi:[10.1002/2014GL062433](https://doi.org/10.1002/2014GL062433).

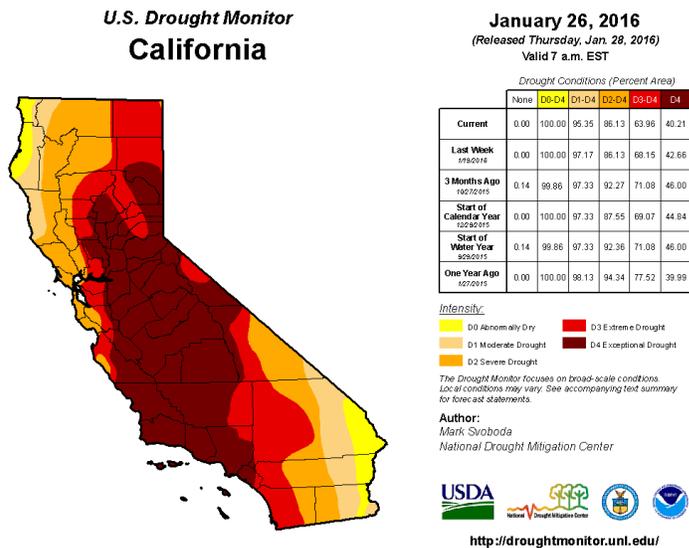


Figure 31

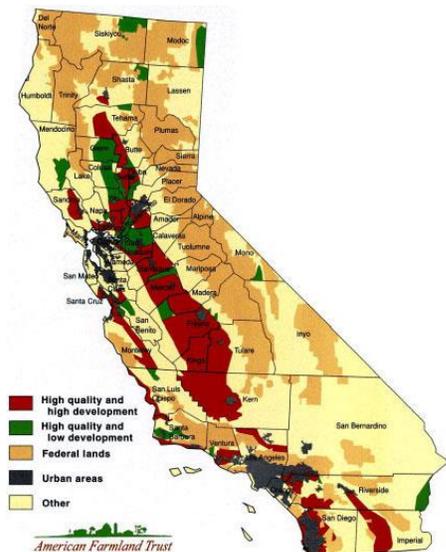


Figure 32

### Canadian Dollar

Another factor that improves Ontario’s competitive position is the relatively low Canadian dollar. The lower dollar has two major impacts on the Ontario fruit and vegetable sector. First, it increases the cost of imported product. Second, it lowers the cost of Ontario product in US markets. Ontario can be a cost competitive supplier to the US Eastern Seaboard given its geographic advantage.

### Local Food

The final factor increasing demand for Ontario produce within the province is the local food movement. Foodland Ontario is a well-recognized brand for Ontario produce in the retail space, and several organizations have worked to connect Ontario producers with buyers in the Hotels, Restaurants and Institutions (HRI) trade. The Local Food Act is also supporting local food by requesting that broader public sector (BPS) food service suppliers to track and increase local food purchases. In 2016, the Golden Horseshoe Food and Farming Alliance (GHFFA) are undertaking a project to increase local food procurement in long term care facilities in the City of Hamilton and the Regions of Halton, Durham and York.

The following table shows a snapshot of several fruit and vegetable development opportunities:

<b>Economic Development Opportunities</b>	<b>Explanation</b>
Generate Consumer Demand for Local Food	<ul style="list-style-type: none"> <li>• Grocery retailers will be more apt to change sourcing practices to buy Ontario fruit and vegetables if the consumer demands local produce.</li> </ul>
Attract Processing Infrastructure	<ul style="list-style-type: none"> <li>• Processing plants source incoming product from as close as possible to minimize transportation and time from harvest to processing.</li> <li>• Processing capacity in the GGH region, such as fruit canning, has decreased dramatically over the past 10-15 years.</li> <li>• Cold storage and sorting/grading facilities are also needed infrastructure to help support this sector</li> <li>• Opportunities to investigate for growth include Individual Quick Frozen (IQF), peeling, slicing, etc.</li> <li>• Challenges in this area are energy costs and regulations</li> <li>• Success story example: Lakeview Vegetables, Durham Region – Grows, processes, and distributes fresh and IQF vegetable products in Canada and along the Eastern Seaboard of the US.</li> </ul>
Encourage Higher Value Crops ( <i>in areas with sufficient heat accumulation</i> )	<ul style="list-style-type: none"> <li>• Many opportunities exist to diversify high value crops which will benefit the entire agri-food value chain.</li> <li>• Replacing imports of frozen vegetables is a key opportunity</li> <li>• There is some reluctance with growers to make long term commitments given the high value of land in the GGH region. For example a new fruit orchard will require 4-5 years just to get established and start to produce income, this is viewed by many as too long of a timeframe for high value land.</li> <li>• Several research programs are underway to adapt new crops and varieties to the GGH region, such as the Vineland Research and Innovation Centre.</li> <li>• Market development activities and educating growers about production and the market opportunities for these crops could help increase adoption.</li> <li>• Longer term examples include: Gala apples, pears and other tender fruit, hazelnuts, etc. These orchard project require 4-5 years of growing before any harvest / income.</li> </ul>
Increase Greenhouse Vegetable Production	<ul style="list-style-type: none"> <li>• Current greenhouse vegetable production is mainly in the South West areas of Essex and Chatham-Kent.</li> </ul>

	<ul style="list-style-type: none"><li>• Niagara Region offers similar growing conditions with closer proximity to the GTA and North Eastern US market.</li><li>• In addition, non-traditional urban and vertical vegetable production that use new LED technology is also possible</li></ul>
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**Table 3**

### **Access to Water for Irrigation**

The impact of the drought in California highlights the importance of water to higher value crops. The Great Lakes basin generally, and the GGH in particular, are blessed with abundant water supplies. However, water is needed by municipalities, construction, and other industries as well as agriculture. The question then becomes, is there enough water available to support a significant increase in higher value crops in the GGH?

Figure 33 on the following page puts agricultural water use in the context of all water use in the GGH. The map plots all registered active water taking permits in the Ministry of the Environment database. Most water takings for agriculture are barely visible on the map compared to other uses. It appears that increasing water takings for agriculture could happen without materially impacting the overall water taking in the GGH. However, project size and specific location would govern whether any specific project will be approved.

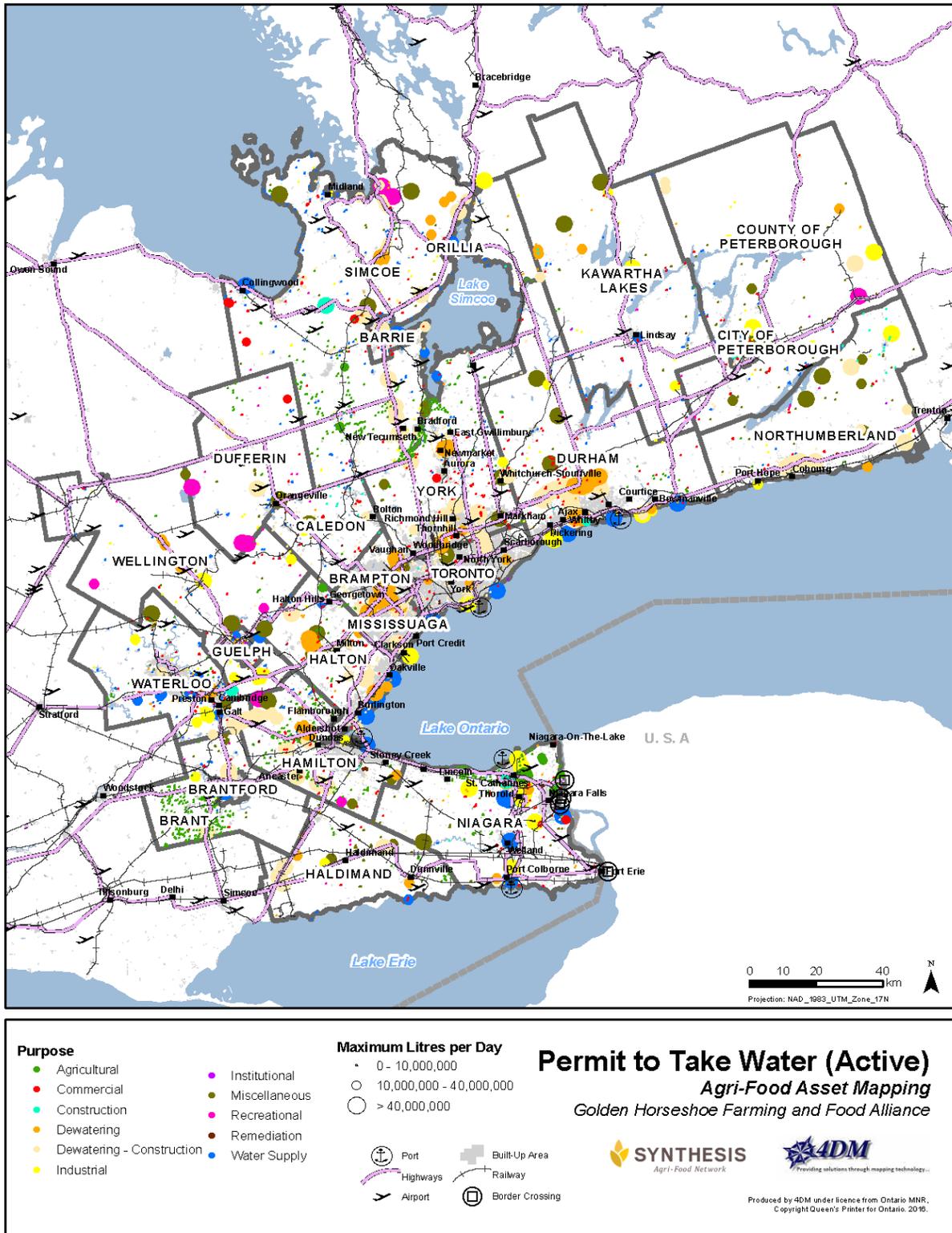


Figure 33



## Observations and Conclusions

The GGH agri-food asset map database provides a very valuable tool to analyze and visualize the sector. When combined with other datasets, as in this report, additional patterns can be observed that will inspire new insights to fuel sector growth. Our analysis has revealed many opportunities for economic development of the agri-food sector in the GGH Region. Each of these opportunities to grow the cluster is based on an overarching theme of trying to increase employment, investment and production value on a shrinking land base, but doing so in a sustainable manner. In many instances, these observations are consistent with previous analysis for the GH region. There are however a few key differences for the GGH region, such as the increased presence of livestock production assets.

On average, the GH Region already produces higher value crops than most Ontario farms due to quality soils, great climate and proximity to market<sup>43</sup>. Similar to the previous GH analysis, our conclusion is that further increasing the average production value per acre should be a key economic development focus for the GGH Region. Higher value crops may not be a fit for every acre of the GGH region, however there are significant areas with micro-climates, sufficient heat accumulation and soil profiles that are well suited for this production. Access to water for irrigation will be a key success factor for some high value crops.

From a GGH perspective, the presence of livestock and poultry production offers an additional opportunity that is not as prevalent closer to urban areas of the GTA. Livestock production creates a higher economic value compared to producing field crops on the same land base and also lends itself well to local food and farm-direct sales opportunities. Retaining the current livestock production base will be a key factor in achieving agri-food growth in the GGH. The main challenges facing this sector are urban growth pressure, which has reduced livestock production around the GTA, and issues related to consumer influence on agricultural production (also known as social license or citizen influence). Promotion and education about livestock production (answering consumer questions) as well as proactively adapting production methods to meet future customer needs are recommended for business retention and expansion in this area.

Further increasing the average production value per acre, including livestock, should be a key focus.

Food, beverage and bio-product processing operations also add additional value to the agricultural products produced on farms and create significant economic impact through domestic sales of food ingredients and finished products, as well as bio-products and export sales. While the sector has enjoyed a strong presence in this area, some key sectors like fruit and vegetable processing have a significantly reduced footprint due to competitive pressures. As the North American industry goes through a major re-structuring, there is a need to retain existing large

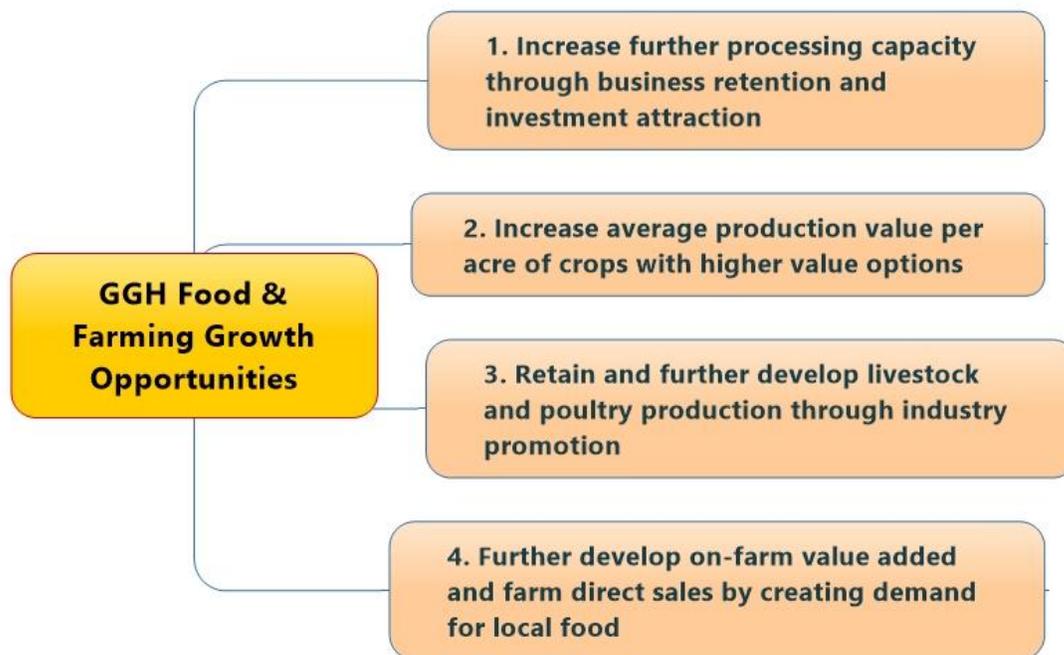
Processing business retention and expansion is a risk

<sup>43</sup> Agriculture By The Numbers, GHFFA information sheet 2014

processing operations (business retention and expansion) while creating new investment opportunities in various sectors. In addition, economic development efforts to support smaller, niche operations (small to medium enterprises and on-farm processing) will bring significant benefits to the GGH.

While primary agricultural production and processing (manufacturing) are only the initial steps in the agri-food sector, they are key economic drivers that can spur additional benefits, growth, and resiliency further down the value chain. Economic development efforts are likely better focused at the primary farm production and processing levels of the value chain which can grow the local economy by serving regional, provincial, national and export markets. This increases the resiliency of the local economy by diversifying the sources of wealth.

In conclusion, the following four strategies offer significant growth opportunities for the food and farming sector in the GGH Region:



### **Grow The Cluster - Increase agri-food production, investment and employment on a shrinking land base in a sustainable manner.**

The following is a brief description of the four strategies for the food and farming growth opportunities in the GGH:

## 1. Increase further processing capacity through business retention and investment attraction

Further processing capacity is a key success factor for the entire agri-food value chain. Without nearby processing capacity, the agri-food value chain will not be maximized. Some considerations related to processing capacity are as follows:

- Processing capacity expansion and modernization is needed at the large commercial scale in order to maintain high agri-food employment levels.
- Smaller scale, on-farm processing can also be of benefit and will take advantage of the population base and food trends (but may not significantly increase employment).
- Regulations (bylaws) that support urban agriculture could help support this growth
- Competitive energy costs are also needed to bolster existing businesses and attract new investment.
- Investment in efficient transportation access (port, rail and road) is integral for processing capacity growth.
- Reducing the regulatory burden (both in costs and delays) would also greatly improve prospects for business expansion.
- Gentrification of downtown core areas results in the displacement of key food processing assets in the GTA.
- Opportunities for business retention and expansion to grow and/or modernize processing capacity exists across each of the sub-sectors investigated:
  - Grain/Milling/Bakery
  - Meat
  - Sugar/Confectionary
  - Fruit and Vegetable (linked to more higher value crops strategy)
  - Beverage
- Opportunities for investment attraction efforts appear to be most needed in the fruit and vegetable sector. IQF processing capacity for example, appears to be a key area to investigate for both export and local food opportunities. The factors of drought in California, food trends (local food, health and wellness) and the US dollar exchange rate have created a window of opportunity in this area.
- Scaling up small to medium enterprises, both farms and food processors, is also a key need. The grocery retail and food service sector in Ontario is very concentrated among a few large companies. Accessing or getting listed with large retailers can be a challenge for farmers and small to medium sized food companies. Supporting farms and food companies to scale up and access the major grocery and food-service channels will help SMEs move to the next level and more effectively enter the mainstream food distribution and access channels.

**IQF is an investment attraction window of opportunity.**

## 2. Increase average production value per acre with high value crops

Many GGH farms already grow higher-value crops than most other Ontario farms because of the climate, soil and proximity to processing capacity and consumers. Additional high value production opportunities for further consideration include:

- Fruit and vegetable production for fresh markets
  - This opportunity takes advantage of the consumer-driven local food trend and access to a growing population.
  - This opportunity could also include urban agriculture strategies using new technologies (small scale LED greenhouse)
- Fruit and vegetable production for processing markets
  - This opportunity requires investment in processing capacity such as IQF, slicing, and/or packaging.
- Greenhouse vegetables (*where heat accumulation supports this or where industrial heat reclaiming is possible*)
  - This opportunity could augment existing greenhouse production which is currently mainly floriculture.
- New Crops / World vegetables (*where climate heat accumulation supports this or where industrial heat reclaiming is possible*)
  - New crops, like sweet potato, okra and eggplant, for the growing ethnic markets in the GTA is an opportunity for certain parts of the GGH region (field and/or greenhouse production).
- Nursery, tree and ornamentals for landscaping
  - Nursery production is already a high ranking commodity for several of the regions within the GGH. Growth with these crops is highly correlated with building start-ups so this will continue to be a key growth opportunity as the GTA expands.

Enablers needed to achieve these high value opportunities include effective transportation, increased processing capacity and access to labour (both full time and part time seasonal). Increased awareness and understanding of modern farming practices by consumers and rural residents is also needed so that farm operations have “freedom to operate” in an efficient, sustainable manner.

**Access to labour,  
access to water  
for irrigation and  
consumer  
education are key  
ingredients.**

### **3. Retain and further develop livestock and poultry production through industry promotion.**

As highlighted in the report, livestock production creates a higher economic value compared to producing field crops on the same land base. It is a significant economic driver in the GGH and retaining the current production base will be a key factor in achieving agri-food growth. An additional dynamic is the changing demographics of the GGH region which is driving increased demand for ethnic foods and livestock such as sheep and goats.

Urban growth puts particular pressure on livestock production, as shown in previous reports on the GH region, which has a much smaller livestock footprint and economic impact. Population growth and urban expansion will have this same effect on the GGH, where decreases in livestock production would have a much more severe effect. Helping the industry to overcome these challenges, such as urban growth pressure and issues related to consumer influence on agricultural production, is an opportunity for the GGH region. Furthermore, promotion and education about livestock production (answering consumer questions) as well as proactively adapting production methods to future customer needs are recommended for business retention and expansion in this area.

- Increase outreach and communications to all stakeholders on livestock production in the GGH to help retain and support livestock production.
  - Educate GGH residents about livestock production (such as benefits, production systems, food safety, and animal welfare).
  - Co-ordinate any of these efforts with existing organizations working in the area such as producer commodity associations, Farm and Food Care Ontario and/or Ontario Agri-Food Education (OAFE).
  - Communicate the importance of livestock and poultry production to GGH stakeholders.
- Encourage and support livestock producers and commodity groups to proactively adopt production practices and standards that will meet the future needs and desires of consumers.
- Investigate and encourage municipal land use policies, development fees and approval processes to align with and support continued livestock production.
- Investigate how funding programs (such as Growing Forward 2 and the Rural Economic Development (RED) program) could help support livestock and poultry production.

#### 4. Further develop on-farm value added and farm direct sales by creating demand for local food

The population in the GGH Region is forecasted to continue to increase which creates both opportunities and challenges for the agri-food sector. The large urban population nearby continues to be a strong growth opportunity for farmers to capture additional profit margin by selling value added products directly to consumers. Value added is changing the form of a raw commodity to produce a higher quality end product.

Farm direct sales and value added products is certainly not a new concept. This is already an area of strength for many GGH area businesses, in particular around the heavily populated GTA. The increasing population and the food trends toward specialty, gourmet and local food create several opportunities for agri-food economic development.

Products and service options include:

- fresh fruit and vegetables (traditional and new, ethnic markets)
- bakery items
- meat products
- fruit wines, hard cider
- maple syrup
- nursery, trees and ornamental plants
- agri-tourism (farm and food related activities)

Support activities to further drive these businesses should be focused on additional demand creation for local food and increasing awareness of these farm direct outlets utilizing existing channels and websites.

As local food demand increases one of the key challenges we face is a very concentrated retail grocery sector. Accessing, or getting listed, with large retailers can be a challenge for farmers and small to medium sized food companies. The retail grocery sector is highly concentrated and relies to a large extent on imported products in certain categories which can be supplied all year from the US but only seasonally from Ontario. There have been several recent positive examples of regional grocery retailers expanding locations and supporting local food to a greater extent (e.g. Farm Boy<sup>44</sup> and Longos<sup>45</sup>). Promoting and supporting retailer diversification as has happened with these two examples is a positive and will support a greater impact of Ontario-produced local food as well as enable farmers and SMEs to more easily enter the mainstream grocery channel.

**Retailer  
Diversification  
creates choice  
and opportunities**

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<sup>44</sup> <http://www.obj.ca/Local/Retail/2015-06-03/article-4169393/Farm-Boys-Ontario-expansion-to-hit-Kitchener/1>

<sup>45</sup> <http://www.canadiangrocer.com/top-stories/longos-beefs-up-local-meat-selection-42297>

## Conclusion

In conclusion, the Greater Golden Horseshoe region accounts for over 65% of the agri-food jobs in the province of Ontario. The region has several advantages in terms of climate, soil type, access to customers and consumers, access to labour force, and access to transportation networks. The area also faces significant challenges with urban growth, traffic congestion, as well as several business inhibitors such as high energy prices compared to other nearby jurisdictions. The asset map database combined with additional data sets can be an effective tool for identifying and mapping trends within the agri-food sector. For example, the analysis of the GH region did not indicate a concentration of livestock production, however when expanded to the GGH region, livestock and poultry production shows a significant footprint, especially in the Waterloo, Wellington, and Durham regions. Retaining and further developing this livestock component will be a key for the GGH region to continue to grow.

The recommendations in this report were based on the guiding strategy to increase agri-food production, investment and employment on a shrinking land base, but do it in a sustainable manner. The recommendations build on the strengths that already exist in the sector, such as processing capacity, production of high value crops, and opportunities for value added production and local food. The sector, however, does face significant risks, for example pressure on processing. Business retention and expansion is a key risk identified in this report. While the later stages of the agri-food value chain (distribution and access) have grown significantly in the past years, the initial stages of the value chain have been relatively flat (no growth). Focusing economic development efforts on the initial stages of the value chain are crucial, and will drive significant economic impact along the value chain. Further production value per acre, with higher-value crop options and livestock, should be a focus. In addition, increasing processing capacity through both business retention and investment attraction will enable further growth and resilience.

## Appendix

### NOC-S Code Descriptions

A full description of job names and occupations used in this analysis are listed below:

#### NOC-S

A221 Restaurant and food service managers  
C023 Agricultural representatives, consultants and specialists  
C122 Agricultural and fish products inspectors  
C125 Landscape and horticultural technicians and specialists  
D014 Veterinarians  
G012 Food service supervisors  
G134 Grain elevator operators  
G411 Chefs  
G513 Food and beverage servers  
G941 Butchers, meat cutters and fishmongers, retail and wholesale  
G942 Bakers  
G961 Food counter attendants, kitchen helpers and related occupations  
I011 Farmers and farm managers  
I012 Agricultural and related service contractors and managers  
I013 Farm supervisors and specialized livestock workers  
I014 Nursery and greenhouse operators and managers  
I015 Landscaping and grounds maintenance contractors and managers  
I016 Supervisors, landscape and horticulture  
I017 Aquaculture operators and managers  
I021 General farm workers  
I022 Nursery and greenhouse workers  
I162 Silviculture and forestry workers  
I211 Harvesting labourers  
I212 Landscaping and grounds maintenance labourers  
I213 Aquaculture and marine harvest labourers  
J013 Supervisors, food, beverage and tobacco processing  
J025 Supervisors, fabric, fur and leather products manufacturing  
J171 Process control and machine operators, food and beverage processing  
J172 Industrial butchers and meat cutters, poultry preparers and related workers  
J173 Fish plant workers  
J174 Tobacco processing machine operators  
J175 Testers and graders, food and beverage processing  
J317 Labourers in food, beverage and tobacco processing  
J318 Labourers in fish processing

## 1. Primary Production

- C122 Agricultural and fish products inspectors
- C125 Landscape and horticultural technicians and specialists
- I011 Farmers and farm managers
- I013 Farm supervisors and specialized livestock workers
- I014 Nursery and greenhouse operators and managers
- I016 Supervisors, landscape and horticulture
- I017 Aquaculture operators and managers
- I021 General farm workers
- I022 Nursery and greenhouse workers
- I162 Silviculture and forestry workers
- I211 Harvesting labourers
- I213 Aquaculture and marine harvest labourers

## 2. Food and Beverage Processing

- J013 Supervisors, food, beverage and tobacco processing
- J025 Supervisors, fabric, fur and leather products manufacturing
- J171 Process control and machine operators, food and beverage processing
- J172 Industrial butchers and meat cutters, poultry preparers and related workers
- J173 Fish plant workers
- J174 Tobacco processing machine operators
- J175 Testers and graders, food and beverage processing
- J317 Labourers in food, beverage and tobacco processing
- J318 Labourers in fish processing
- G941 Butchers, meat cutters and fishmongers, retail and wholesale

## 3. Hotels, Restaurants, and Institutions

- A221 Restaurant and food service managers
- G012 Food service supervisors
- G411 Chefs
- G513 Food and beverage servers
- G942 Bakers
- G961 Food counter attendants, kitchen helpers and related occupations

## 5. Services to Agriculture

- C023 Agricultural representatives, consultants and specialists
- D014 Veterinarians
- G134 Grain elevator operators
- I012 Agricultural and related service contractors and managers

## 6. Misc. (e.g. Landscaping)

- I015 Landscaping and grounds maintenance contractors and managers
- I212 Landscaping and grounds maintenance labourers

## NAICS Code Descriptions

A description of NAICS codes included in the GGH agri-food asset map database are listed below:

- 1110 Farms
- 1150 Support activities for farms
- 3111 Animal food manufacturing
- 3112 Grain and oilseed milling
- 3113 Sugar and confectionery product manufacturing
- 3114 Fruit and vegetable preserving and specialty food manufacturing
- 3115 Dairy product manufacturing
- 3116 Meat product manufacturing
- 3117 Seafood product preparation and packaging
- 3118 Bakeries and tortilla manufacturing
- 3119 Other food manufacturing
- 3121 Beverage manufacturing
- 3122 Tobacco manufacturing
- 3253 Pesticide, fertilizer and other agricultural chemical manufacturing
- 3254 Pharmaceutical and medicine manufacturing
- 3331 Agricultural, construction and mining machinery manufacturing
- 4111 Farm product merchant wholesalers
- 4131 Food merchant wholesalers
- 4132 Beverage merchant wholesalers
- 4133 Cigarette and tobacco product merchant wholesalers
- 4171 Farm, lawn and garden machinery and equipment merchant wholesalers
- 4183 Agricultural supplies merchant wholesalers
- 4189 Other miscellaneous merchant wholesalers
- 4442 Lawn and garden equipment and supplies stores
- 4451 Grocery stores
- 4452 Specialty food stores
- 4453 Beer, wine and liquor stores
- 4931 Warehousing and storage
- 5413 Architectural, engineering and related services
- 5417 Scientific research and development services
- 5419 Other professional, scientific and technical services
- 6112 Community colleges and C.E.G.E.P.s
- 6113 Universities
- 6116 Other schools and instruction
- 7112 Spectator sports
- 7139 Other amusement and recreation industries
- 7211 Traveller accommodation
- 7212 Recreational vehicle (RV) parks and recreational camps
- 7223 Special food services
- 7225 Full-service restaurants and limited-service eating places