## Section 3 Economic Impact

This section updates the economic impact of agricultural production in the Region of Niagara for 2006[4]. In 2003, using statistics from 2001, it was concluded that based on $511 million in GFR's, agriculture generated $1.8 billion[5] of activity in the Niagara economy annually. Based on the analysis detailed in this section it is estimated that in 2006, based on $672 million in GFR's, this economic impact increased to $2.8 billion including associated labour income of $454 million.

### 3.1 Production Profile

As noted in the previous section and illustrated in **Figure 43**, Niagara's agricultural cluster which is dominated by greenhouse products, fruit, "poultry and egg", and "nursery products and sod", generated a total $672 million in GFR's in 2006. As documented in **Figure 44**, there were slight changes in the GFR profile between 2001 and 2006 with different commodity groups changing their percentage share of revenue. Over the 2001 to 2006 period, Gross Farm Receipts (GFRs) increased for all of the commodity groups with the exception of Dairy production which experienced a 22% decline in GFR over the period. Total GFR over all commodities increased by 31% over the period. Most notable is the 157% increase in "Miscellaneous Agriculture" GFRs over the period.[6] Following the Miscellaneous categories were "Horse and Pony", "Nursery", "Cash Crop", "Hog" and "Greenhouse" with period increases of 86%, 76%, 51% and 33% respectively. In terms of sheer magnitude, the Niagara agricultural production is dominated by greenhouse, followed by "poultry and egg" and grape and tender fruit production.

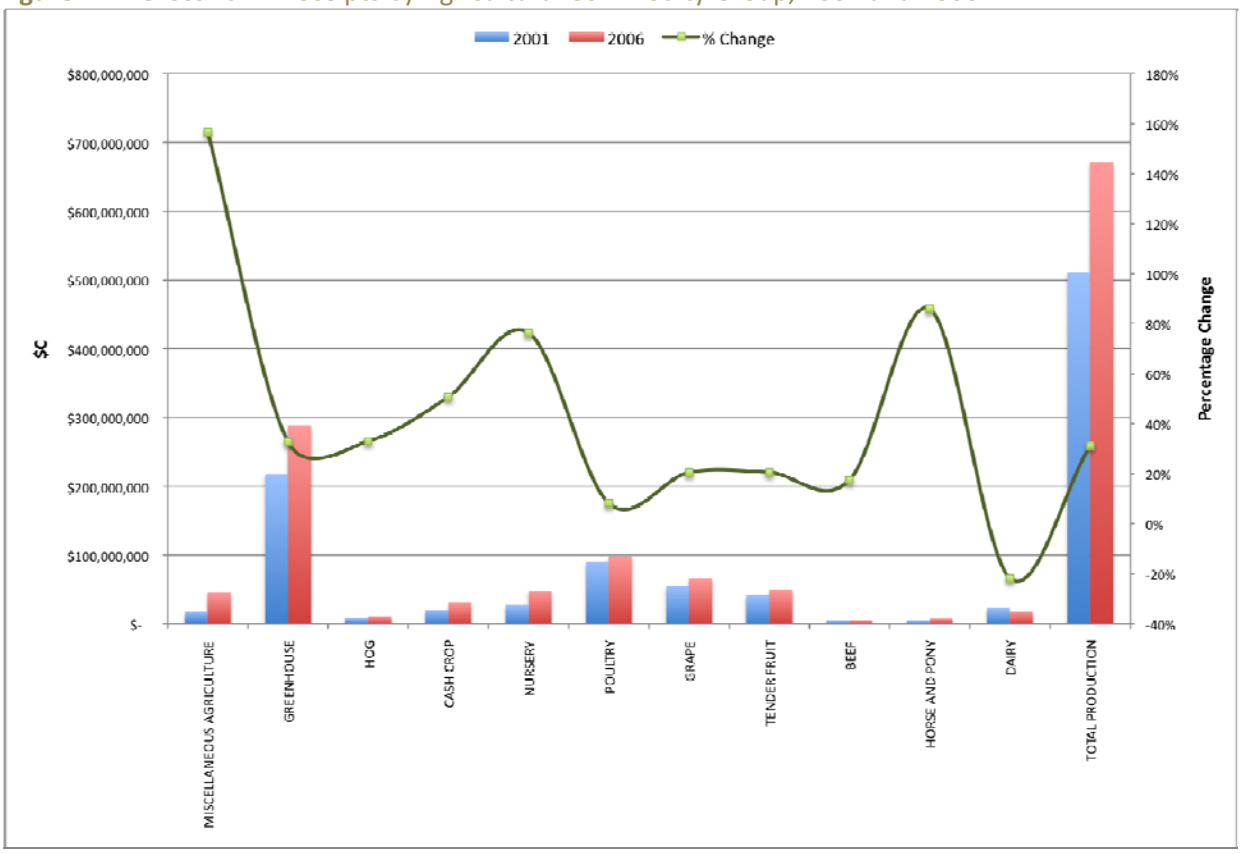
GFR's generated in 2006 increased by $160 million, over the total level of activity reported in 2001.

**Figure 43 –** Gross Farm Receipts by Agricultural Commodity Group, Niagara, 2001 and 2006

| | 2001 | 2006 | Percentage Change |
|---|---|---|---|
| Miscellaneous Agriculture | $17,665,134 | $45,341,427 | 157% |
| Greenhouse | $217,609,442 | $289,099,652 | 33% |
| Hog | $8,084,580 | $10,760,297 | 33% |
| Cash Crop | $20,799,197 | $31,363,866 | 51% |
| Nursery | $27,717,140 | $48,902,783 | 76% |
| Poultry | $90,835,580 | $98,308,509 | 8% |
| Grape | $55,123,030 | $66,458,705 | 21% |
| Tender Fruit | $41,584,040 | $50,135,515 | 21% |
| Beef | $4,459,614 | $5,241,407 | 18% |
| Horse & Pony | $4,220,708 | $7,849,642 | 86% |
| Dairy | $23,296,554 | $18,218,970 | -22% |
| **TOTAL PRODUCTION** | $511,395,019 | $671,680,773 | 31% |

[4] See **Appendix 1** for the complete report.
[5] This figure includes $344 million in labour income.
[6] The Miscellaneous Agriculture commodity group is composed of all those commodities not included in the specific groups shown in Table 1. The Miscellaneous Agriculture commodity group accounted for just over 3 percent of total GFRs in 2001 and nearly 7 percent in 2006. Clearly, the 10 commodity groups chosen for this analysis account for the majority of all GFRs in each of the two census years.

**Figure 44** – Gross Farm Receipts by Agricultural Commodity Group, 2001 and 2006




## 3.2 Measuring the Economic Impact of Agricultural Production in Niagara

Agricultural operations in Niagara that generated nearly $672 million in GFRs in 2006, had a significant local, provincial and national economic impact. The purpose of what follows is to estimate the magnitude and nature of this impact on Niagara's economy.

An economic impact analysis focuses on the contributions to the economy stemming from agricultural production in an area. Assessing economic impact is similar to analyzing the effect of dropping a stone in a pond and then tracking the ripples. It considers the linkages flowing from "Crop and Animal Production" to all of that sector's input providers, then in turn to all of the providers dealing with the primary input providers and so on. **Figure 45** presents a graphic representation of the relationship between agricultural production in Niagara and the overarching regional economy. It attempts to articulate the intricate nature of the agriculture production complex including the effects associated with production and processing. **Figure 45** provides a sense of how agricultural activities are intertwined with the overarching regional economy. In essence, the interconnections shown in **Figure 45** are what give agricultural production in Niagara its multiplier effect.

The results of undertaking this analysis for Niagara are summarized in **Figure 45**.

The linkages pattern depicted in **Figure 45** is partially captured in the regional economic impact model used to translate the production figures from **Figure 43** above into Niagara-specific economic impacts. It works across many different industries and includes direct, indirect and induced impacts.

The total economic impact of any industry is defined as the sum of its direct, indirect and induced economic impacts in the host economy. *Direct impacts* are those that stem from the direct input requirements of the industry in question. *Indirect impacts* are the additional rounds of spending stimulated by the direct input providers' purchases of other inputs. *Induced impacts* refer to those additional rounds of spending that stem from income earned by workers in the various industries in the economy that are impacted directly and indirectly by the initial rounds of spending.

To calculate the economic impact of a particular sector, in this case agriculture, "Total Output Multipliers" which measure the stimulatory impact of various types of expenditures, are applied to the economic numbers to generate the direct, indirect and induced effects of various types of economic activity.

### 3.3 The Economic Impact of Agricultural Production in Niagara

**Figure 46** presents Total Output Multipliers (TOMs) for all industries (i.e., Small Level NAICS industry groups) in Niagara including the various components of the Region's Crop and Animal Production cluster. Total Output Multipliers (TOMs) measure the stimulatory effect of each component of the cluster in the Region on all industries producing goods and services in Niagara inclusive of direct, indirect and induced effects. Generally speaking, the larger the multiplier for a given industry, the more connected that industry is to other industries in the economy, and hence the greater is its stimulatory effect on these linked industries if shocked. **Figure 46** shows that all industries in Niagara, with three exceptions, possess TOMs which are in excess of 2.0. This means that for most industries in Niagara (including all components of the agricultural cluster), a one dollar increase in the demand for their output will translate into more than two dollars in output response across all linked industries in the economy (i.e., the total economic impact of a $1.00 increase in demand for the output of one industry is in excess of $2.00).[7] Every dollar of output from Niagara's agricultural cluster therefore stimulates a total impact in excess of $2.00 in the Niagara economy.

[7] It is important to note that the structure of the Niagara economy used to compute these multipliers was based on a regionalized provincial Input-Output model pertaining to the year 1998.

Figure 46 – Total Output Multipliers by Industry in Niagara

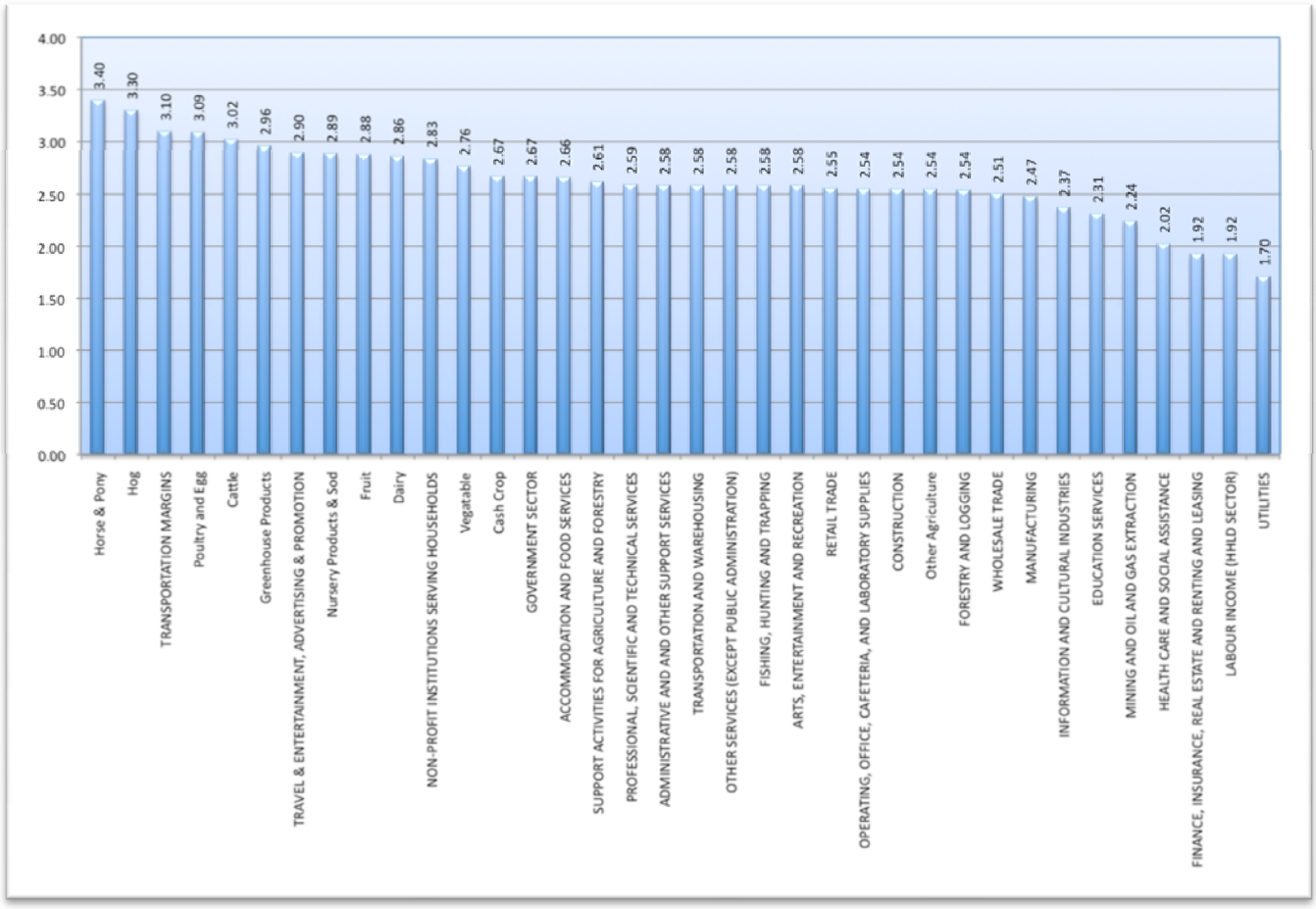


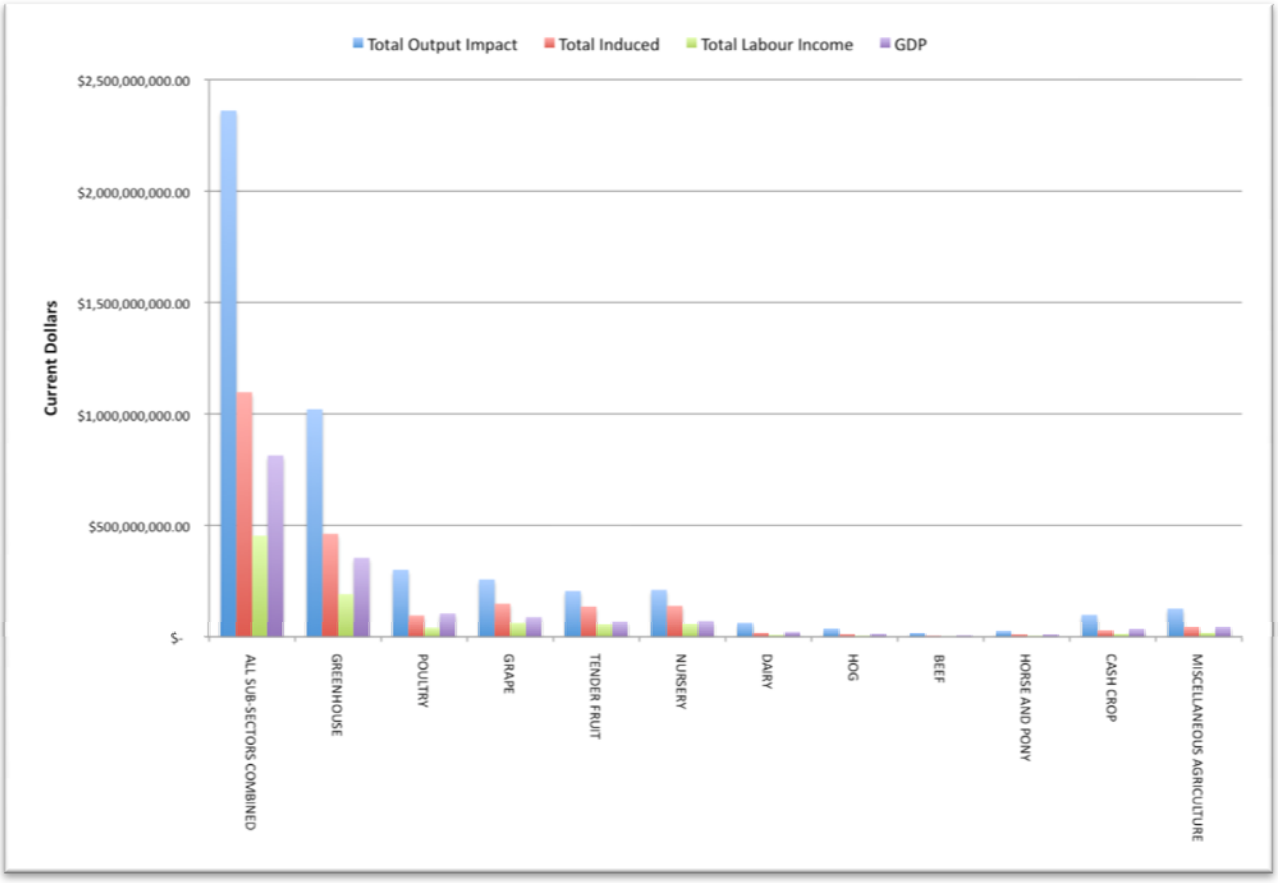

**Figure 47** presents a summary of the economic impacts associated with agricultural production in Niagara for 2001 and 2006. Over this period, GFRs increased to nearly $672 Million. **Figure 47** shows that agricultural production in 2006 resulted in:

- a total industry output impact (over all industries in the regional economy) of nearly $2.40 Billion;
- a regional GDP impact of nearly $814 Million; and,
- regional labour income of nearly $454 Million.

**Figure 48** decomposes the total, induced, labour income and GDP impacts by agricultural commodity group in Niagara and confirms that:

- nearly half of the total economic impact of all agricultural production in the Region is due to the re-spending of wages earned through the direct and indirect impacts of this production (i.e., the induced impact);
- greenhouse production dominates in terms of the total economic impact, followed by poultry, grape and tender fruit.

Figure 48 – Economic Impacts by Commodity Groups in Niagara, 2006




These findings underscore our conceptualization of the cluster shown earlier; clearly agricultural production is linked in myriad ways to all sectors of the economy and a great many jobs are dependent upon it, through direct, indirect and induced connections. Comparisons of 2006 impacts to those obtained using 2001 data reveal that this sector is growing in Niagara, and so is its overall economic impact on the region.

## 3.4 Summary

Based on this analysis, it can be concluded that sales by the agricultural cluster in the Region of Niagara in 2006 of nearly $225 million are having a substantial annual economic impact in the Regional economy. This impact includes:

- More than $2.4 billion in gross industry output across all industries in the Region;
- More than $814 Million in GDP or value-added; and,
- More than $454 Million in labour income.

This in an increase of approximately $10 million over the impact calculated from 2001.