



# Economic Impact of Manitoba Corn Production

**informa economics**

Prepared for:

Manitoba Corn Growers Association



# Table of Contents

<b>I. EXECUTIVE SUMMARY .....</b>	<b>1</b>
<b>II. MANITOBA'S CORN SECTOR .....</b>	<b>3</b>
A. PRODUCTION .....	3
B. CONSUMPTION .....	6
1. <i>Livestock</i> .....	6
2. <i>Ethanol Production</i> .....	7
3. <i>Beverage Alcohol</i> .....	7
4. <i>Outshipments</i> .....	7
<b>III. ECONOMIC IMPACT FROM MANITOBA CORN PRODUCTION.....</b>	<b>8</b>
A. OVERVIEW .....	8
B. ECONOMIC IMPACT OF CORN VS. CANOLA .....	10
C. KEY MANITOBA INDUSTRIES IMPACTED BY MANITOBA CORN PRODUCTION .....	11
D. DETAILED INDIRECT AND INDUCED IMPACTS FOR KEY INDUSTRIES IN MANITOBA .....	13
E. DOWNSTREAM IMPACTS .....	17
<b>IV. CONCLUSIONS .....</b>	<b>19</b>

## List of Exhibits

Exhibit 1: Manitoba Corn Production .....	1
Exhibit 2: Economic Impact of the 2012/2013 Manitoba Corn Crop .....	2
Exhibit 3: 2012/2013 Manitoba Corn Economic Multipliers .....	2
Exhibit 4: Manitoba Corn for Grain Yield and Production (1998 – 2012) .....	4
Exhibit 5: Select Elements of the Manitoba Corn Supply .....	5
Exhibit 6: Manitoba Corn Use by Livestock and Poultry .....	6
Exhibit 7: Impact of the 2012/2013 Manitoba Corn Crop (Regional and National) .....	9
Exhibit 8: Boost to Manitoba from Planting Corn in 2012 .....	10
Exhibit 9: Economic Impact of Manitoba Corn Production.....	12
Exhibit 10: Manitoba’s 2012/2013 Corn Crop Indirect and Induced Impact on Output (Detail).....	14
Exhibit 11: Manitoba’s 2012/2013 Corn Crop Indirect and Induced Impact on Gross Regional Product (Detail) .....	15
Exhibit 12: Manitoba’s 2012/2013 Corn Crop Indirect and Induced Impact on Employment (Detail) .....	16
Exhibit 13: Consumers of Manitoba Corn.....	17
Exhibit 14: Direct Economic Impact of Corn Users in Manitoba .....	18
Exhibit 15: Size of Industries Downstream from the Corn Production Industry .....	18
Exhibit 16: 2012/2013 Manitoba Corn Economic Multipliers .....	19

## Disclaimer

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## Acronyms

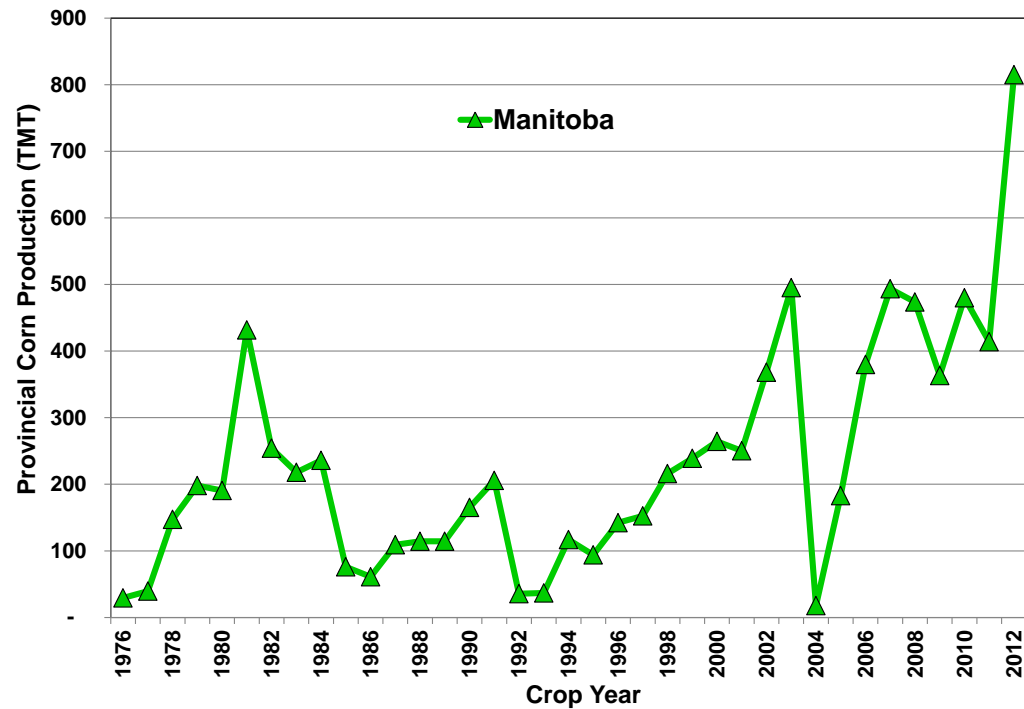
TMT: Thousand Metric Tonnes  
MT: Metric Tonnes  
Ha: Hectare  
FTE: Full Time Equivalent Jobs  
\$: All values in the report are in Canadian Dollars  
GRP: Gross Regional Product

## I. EXECUTIVE SUMMARY

Corn production has consistently increased in Manitoba over the last decade (Exhibit 1). The increase in corn production raises the question of corn's impact on the Manitoba economy, as well as the risk of lost economic activity if the Manitoba corn production trend reversed.

According to Statistics Canada, since 1998 Manitoba corn production has shifted from an emphasis on fodder corn to corn for grain. While 2004 saw a serious crop failure, corn for grain production has since recovered, reaching a high of 815.4 TMT in 2012 (for the 2012/13 crop year).

**Exhibit 1: Manitoba Corn Production**



Source: Statistics Canada

Corn production in Manitoba has provided economic benefits to both the province and the country as a whole. These benefits are in the form of the economic activity associated with the corn farming value chain and, due to corn's relatively higher revenue per hectare, corn provides a boost to the economy over other crop choices. The economic support provided to Manitoba and the nation is summarized in Exhibit 2. Output is the sales generated by businesses within the selected area. Gross Regional Product (GRP) is the value added to the economy and that contributes to the Gross Domestic Product (GDP). Employment is measured in full time equivalent (FTE) jobs. The economic multipliers are based on the results in Exhibit 2 and are presented for Manitoba and for all of Canada in Exhibit 3.

**Exhibit 2: Economic Impact of the 2012/2013 Manitoba Corn Crop**

Impact Type	Manitoba	Canadian Total
<b>Output (millions)</b>	\$281.32	\$383.90
<b>Gross Regional Product (millions)</b>	\$116.97	\$168.23
<b>Employment (FTE jobs)</b>	852	1,272

*Note: Of the 852 FTE jobs, 450 FTE represent farmers that are directly employed by the corn industry, as opposed to being created by the corn industry. This is important to note, as the farmers would exist if other crops were grown.*

Source: Informa

**Exhibit 3: 2012/2013 Manitoba Corn Economic Multipliers**

Economic Impact Type	Manitoba	Canada
<b>Output</b>	1.30	1.78
<b>Gross Regional Product</b>	1.44	2.08
<b>Employment</b>	1.90	2.83

Source: Informa

## II. MANITOBA'S CORN SECTOR

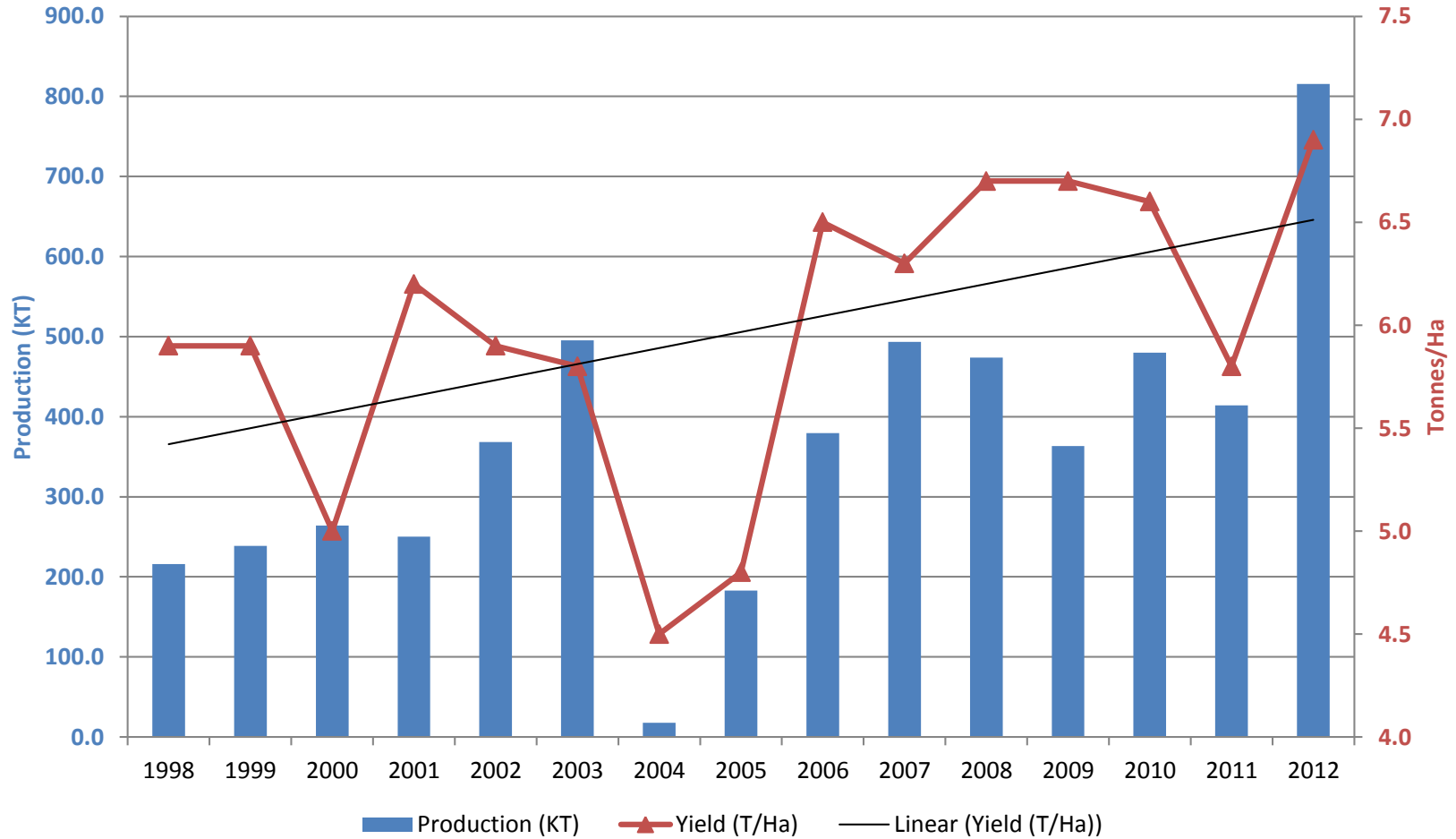
### A. Production

Corn production has increased in Manitoba over the last decade (Exhibit 4) from an average of 309.25 TMT (2001-2002) to an average of 614.5 TMT (2011-2012). The increase in corn production raises the question of corn's impact on the Manitoba economy.

According to Statistics Canada, since 1998 Manitoba corn production has shifted from an emphasis on fodder corn to corn for grain. While 2004 saw a serious crop failure, corn for grain production has since recovered, reaching a high of 815.4 TMT in 2012 (for the 2012/13 crop year). The variability of Manitoba production of corn for grain over the last five years is far less than that seen since 1998. Since 1998, corn yields have trended up; and have ranged from 4.5 MT per hectare to 6.9 MT per hectare. The average yield was 6.0 MT/Ha. In addition to higher yields, corn production is also growing due to the expansion of planted area. Average planted area from 2001-2002 was 53,600 hectares, whereas the average planted area for 2011 and 2012 was 96,950 hectares.

An increase in Canadian corn production has also made Manitoba less dependent on U.S. corn imports. U.S. corn imports in Manitoba have fallen from 510 TMT during the 2008/2009 crop year to less than 300 TMT in 2011/2012. Imports of U.S. corn destined for Manitoba are again expected to be less than 300 thousand metric tonnes (296 TMT) for the 2012/2013 crop year. Exhibit 5 shows the comparison of Canadian corn production and corn imports from the U.S.

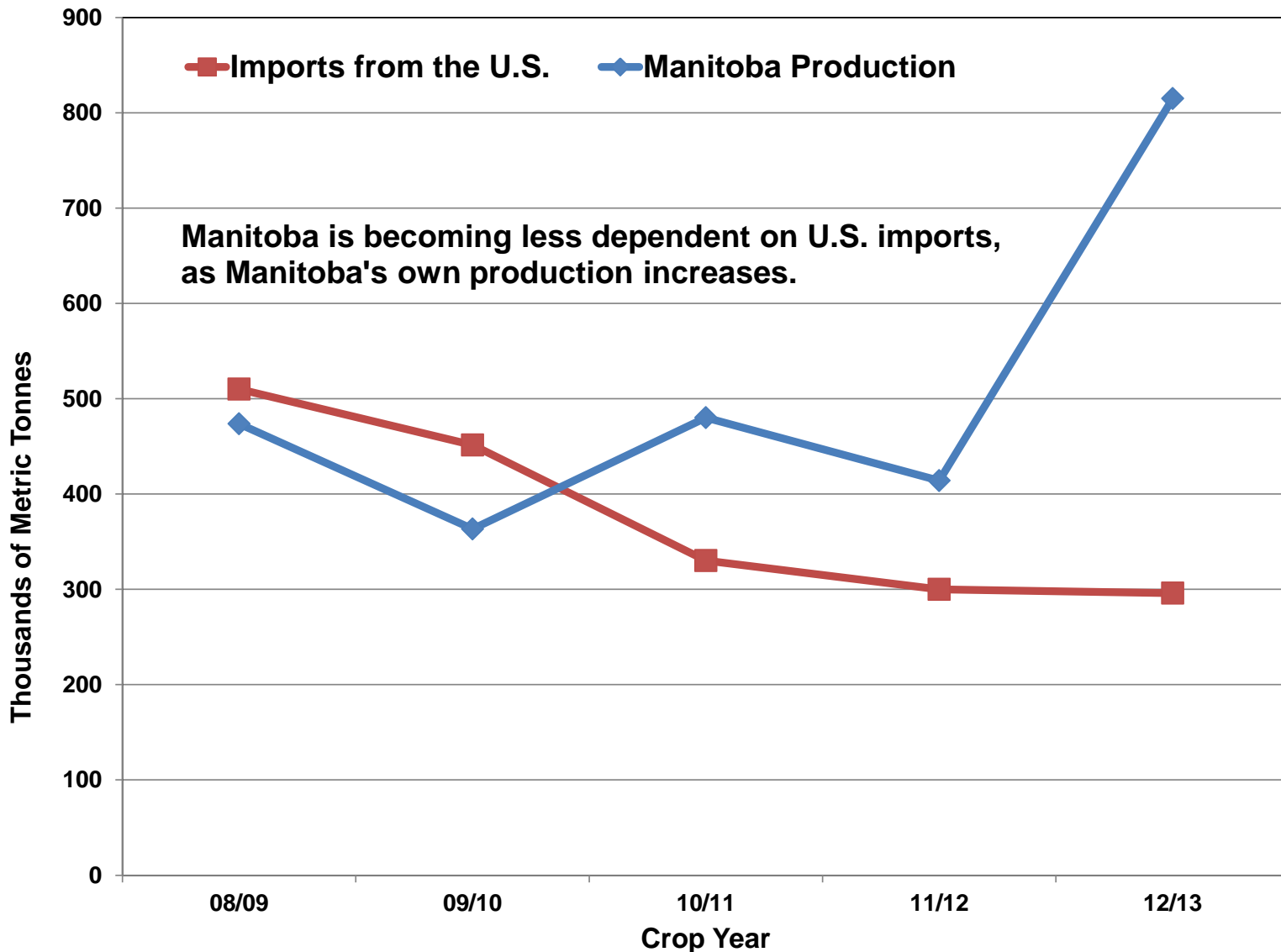
**Exhibit 4: Manitoba Corn for Grain Yield and Production (1998 – 2012)**



Source: Statistics Canada



Exhibit 5: Select Elements of the Manitoba Corn Supply



Source: Statistics Canada, Global Trade Atlas (GTIS), Forecast for 2012/2013 imports from the U.S. by Informa

## B. Consumption

In Manitoba, corn is used for animal feed (68%), ethanol (21%), distilled for spirits (5%), and sent to nearby provinces (5%). Growth of corn production in the province should, overtime, provide incentives that further the growth of animal production and corn based ethanol. Hog production is the largest single user of corn, representing 53% of corn demand in Manitoba. Demand tends to be the driver of supply, which is why economic impact analysis typically focuses on the upstream linkages in the supply chain. However, in the case of agricultural production, it is common for users of corn to locate near the supply source. As a result, a stable or growing corn farming sector promotes growth and stability for downstream users of corn, such as ethanol. The ethanol plant in Minnedosa was expanded and retooled to allow for corn as feedstock in 2005 and increased corn production allows the plant the opportunity to use more corn in its process.

### 1. Livestock

Livestock in Manitoba are primarily in the form of cattle, hogs, and poultry; with hogs consuming a largest share of corn production. Manitoba's cattle inventory includes beef cattle and its dairy herd. Manitoba also has some poultry and egg production as well as smaller livestock industries, such as sheep. In Manitoba, the number of fed cattle and dairy cattle has been steady since 2000. Poultry production has been fairly steady in Manitoba as well. The inventory of hogs is down from pre-2009 highs, but has been trending upward in recent years. Manitoba is expected to supply 512 TMT of Manitoba's 758 TMT of animal feed demand during the crop year 2012/2013. If corn supplies continue to increase, it is expected that Manitoba corn producers would gain market share within the province. It is estimated that during the 2012/2013 marketing year, livestock users will supplement their corn supply with 246 TMT of corn imports from the U.S. Exhibit 6 shows the demand by species in Manitoba.

**Exhibit 6: Manitoba Corn Use by Livestock and Poultry**

Livestock Type	Thousand Head	Corn Use (TMT)
<b>Sows Inventory</b>	319	99
<b>Hogs Slaughtered</b>	2,309	487
<b>Cattle on Feed Inventory</b>	119	16.5
<b>Dairy Cattle Inventory</b>	63	1
<b>All Poultry<sup>1</sup></b>	N/A	155

<sup>1</sup>Poultry utilized egg production and production weight to determine corn demand needs.

Source: Informa & Statistics Canada

## 2. Ethanol Production

Manitoba has a corn ethanol facility, Husky, which is in Minnedosa. The plant has an annual capacity of 130 million liters and as such utilizes approximately 312 TMT of grain each year. The plant can use a mix of both wheat and corn, but it is estimated that the plant will use corn for 75% of its ethanol production. Manitoba remains a corn deficit province, but is estimated to supply 24% of its corn crop to the Manitoba ethanol industry. If the plant were to use 100% corn and source it all from Manitoba, this would represent 38% of the 2012/2013 corn crop. This would be an increase to Manitoba of 114 TMT, which using 2012 yields would support 16,403 additional hectares of corn production.

## 3. Beverage Alcohol

Manitoba has a distillery in Gimli. The distillery, owned by Diageo, uses corn in the production of alcohol for human consumption. This plant primarily uses corn for the production of bourbon style flavoring whisky. The plant produces five spirits that include:

- Continuous base corn whiskies;
- Batch base corn whiskies;
- Typical corn based bourbon known as corn-based-whisky or CBW
- Rye flavoring; and
- A high rye batch whisky

Information about the exact corn use in Diageo's facility in Gimli was not available, thus Informa estimated use to 60 TMT per year. There is an emphasis made to source the corn from Canada, since it is creating "Canadian Whiskey" products, but corn is also sourced from the U.S.

## 4. Outshipments

In addition to providing corn to Manitoba corn users, a portion of Manitoba corn is also shipped west to supply other provinces. The outshipments are typically by truck and can vary as a result of production levels and overall supply levels. Informa estimates that approximately 60 TMT from the 2012/2013 Manitoba corn crop will be sent to nearby provinces, primarily Saskatchewan.

### III. ECONOMIC IMPACT FROM MANITOBA CORN PRODUCTION

#### A. Overview

Economic impact analysis utilizes spending patterns within a supply chain to determine how increased revenues in a specific industry will impact the local, regional, or national economy. This report primarily focuses on the economic activity that is supported in Manitoba from Manitoba corn production. However, the total impact that Manitoba corn production has on Canada is also presented to demonstrate that Manitoba corn offers support to the broader Canadian economy. In addition to the economic activity supported by corn production, the report also provides the net impact from producing corn as opposed to other alternatives. Corn typically has higher revenue per hectare and as a result offers greater economic impacts on a per hectare basis. By planting corn in 2012 over canola, for example, the Manitoba economy was boosted by additional Gross Regional Product of \$16.06 million.

Economic impacts are categorized based on their relation to the subject industry, which in this case is corn farming. These categories are as follow:

- Direct economic impacts are defined as those directly associated with corn production. This includes the impact from corn farming spending patterns.
- Indirect economic impacts are the additional economic impacts that affect other industries and can be linked to the industry that was directly impacted. This would represent how a local pesticide company spends the revenue it receives from corn farmers.
- Induced economic impacts are the economic activity associated with the spending of labor income generated by direct and indirect economic activities. This represents the economic activity from farm workers and workers of the pesticide company spending their income that was derived from corn farming.

The economic activity is also presented by the impact type:

- Output (Industry Sales)
- Employment (Jobs)
- Gross Regional Product (Value Added)

Exhibit 7 shows the economic impact the 2012/2013 corn crop in Manitoba is estimated to provide to Manitoba and all of Canada.

**Exhibit 7: Impact of the 2012/2013 Manitoba Corn Crop (Regional and National)**

	Support to Manitoba's Economy from Manitoba Corn Production <i>(In Millions Except Employment)</i>	Support to Other Canadian Provinces from Manitoba Corn Production <i>(In Millions Except Employment)</i>	Total Support to Canada from Manitoba Corn Production <i>(In Millions Except Employment)</i>
<b>Output</b>			
Direct	\$216.00	\$0.00	\$216.00
Indirect	\$40.30	\$55.58	\$95.88
Induced	\$25.02	\$47.00	\$72.02
<b>Total</b>	<b>\$281.32</b>	<b>\$102.58</b>	<b>\$383.90</b>
<b>Gross Regional Product</b>			
Direct	\$80.98	\$0.00	\$80.98
Indirect	\$20.01	\$24.85	\$44.86
Induced	\$15.98	\$26.41	\$42.39
<b>Total</b>	<b>\$116.97</b>	<b>\$51.27</b>	<b>\$168.23</b>
<b>Employment (FTE Jobs)</b>			
Direct	450	0	450
Indirect	227	164	391
Induced	176	256	431
<b>Total</b>	<b>852</b>	<b>420</b>	<b>1,272</b>

*Note: The 450 FTE represent farmers that are directly employed by the corn industry, as opposed to being created by the corn industry. This is important to note, as the farmers would exist if other crops were grown.*

Source: Informa & Statistics Canada

The table in Exhibit 7 shows that the 2012/2013 Manitoba corn crop supported \$281.32 million in sales in Manitoba and a total of \$383.90 in sales for all of Canada. These sales include the corn revenue (\$216 million) as well as the sales generated by the businesses that supply the corn farming sector. The value to the economy is measured by Gross Regional Product and the table shows that \$168.23 million was added to Canada's economy with \$116.97 million being added to Manitoba. Jobs supported by Manitoba corn were 852 in the province and 1,272 nationwide.

Higher prices for corn in the 2012/2013 crop year result in higher farmer margins. Farm margins influence induced economic impacts, because farmers spend a portion of their income. As a result, the induced impacts of corn from the 2012/2013 crop year are expected to be higher than what should be expected in other crop years. It was assumed in the

analysis that Manitoba farmers would keep same proportion of their income in the Manitoba economy as they had in the past. Higher margins also meant that a smaller percentage of total revenue was needed to pay input suppliers. Although the revenue to input suppliers may be similar in future years, the multiplier will change slightly with varying future margins.

## B. Economic Impact of Corn vs. Canola

The boost to the Manitoba economy from growing corn as opposed to another crop was explored by comparing the net impact from a hectare of corn to a hectare of canola for the 2012/2013 crop year. This analysis resulted in a net benefit to Manitoba from the production of corn. Canola was used for the comparison because it was among the next highest operating costs of the major crop choices in Manitoba. The table in Exhibit 8 shows that corn planting provided a boost to Manitoba's economy of \$16.06 million through additional sales of \$121.13 and an additional 168 jobs.

### Exhibit 8: Boost to Manitoba from Planting Corn in 2012

	from Manitoba Corn Production (In Millions Except Employment)	In Millions Except Employment Canola on the same area	In Millions Except Employment Additional impact of corn over canola
<b>Output</b>			
Direct	\$216.00	\$120.07	\$95.93
Indirect	\$40.30	\$34.32	\$5.98
Induced	\$25.02	\$5.79	\$19.23
<b>Total</b>	<b>\$281.32</b>	<b>\$160.19</b>	<b>\$121.13</b>
<b>Gross Regional Product</b>			
Direct	\$80.98	\$80.17	\$0.81
Indirect	\$20.01	\$17.04	\$2.97
Induced	\$15.98	\$3.70	\$12.28
<b>Total</b>	<b>\$116.97</b>	<b>\$100.91</b>	<b>\$16.06</b>
<b>Employment (FTE Jobs)</b>			
Direct	450	450	0
Indirect	227	193	34
Induced	176	41	135
<b>Total</b>	<b>852</b>	<b>684</b>	<b>168</b>

Source: Informa & Statistics Canada

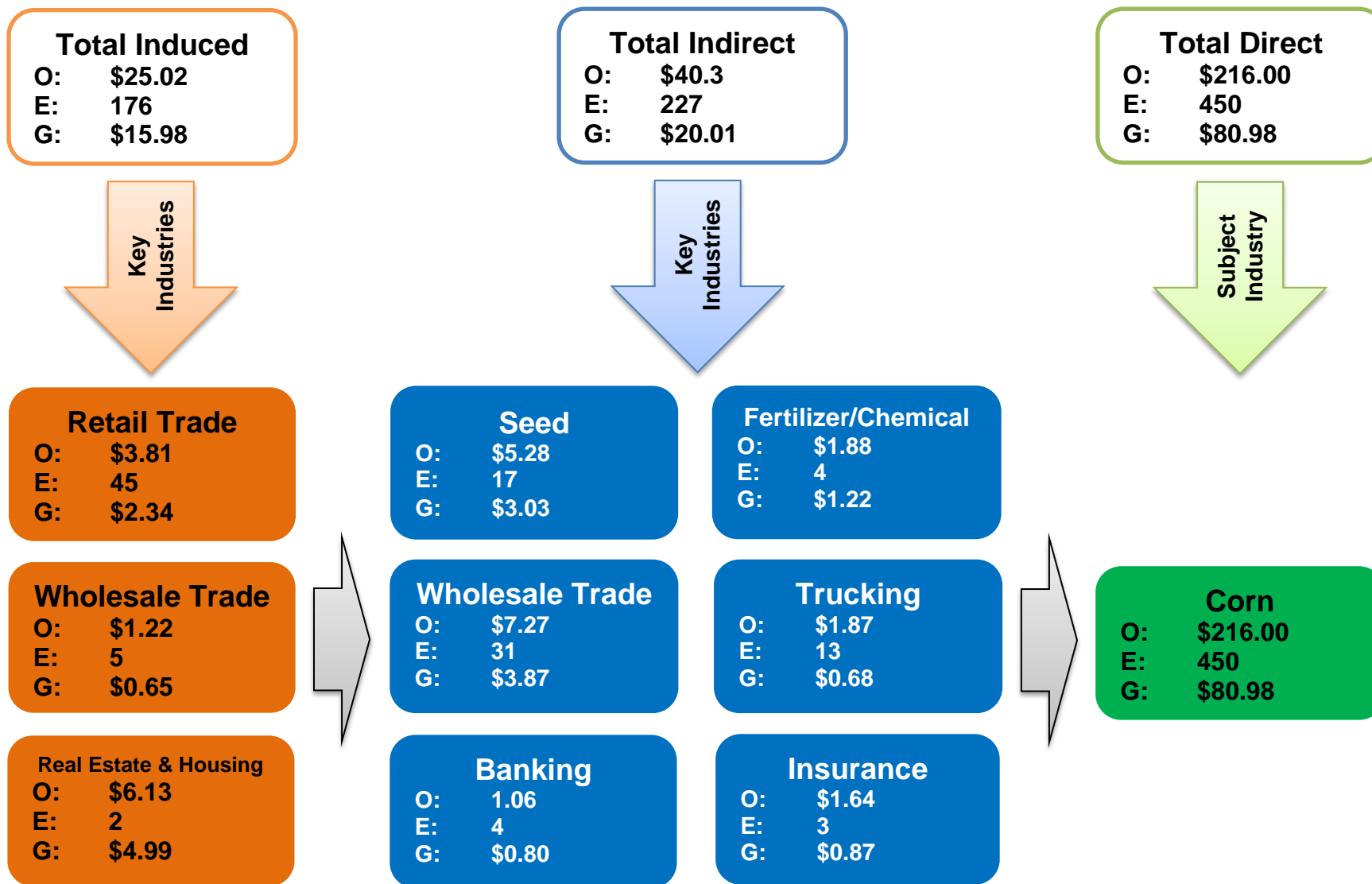
## C. Key Manitoba Industries Impacted by Manitoba Corn Production

A summary of the key industries that benefit from Manitoba's 2012/2013 corn crop are reported in this section. This section presents the benefits that accrue due to indirect and induced relationships with corn production to select industries. The industries are presented for both Manitoba and for all of Canadian (Manitoba plus all other provinces), as benefits accrue to industry participants located outside of Manitoba. The industries discussed are:

- Seed Purchase of corn seed
- Fertilizer & Chemicals Includes fertilizer, insecticide, herbicide, etc.
- Wholesale Trade This sector includes a variety of industries, but can be thought of, for indirect effects, as other farm supplies that are not covered by a specific category.
- Trucking This includes shipment of inputs to the farm, farm product to the buyer, and the indirect freight activity within the supply chain.
- Banking Unlike some inputs, farms are usually serviced by nearby banks
- Insurance Unlike some inputs, farms are usually serviced by nearby insurance vendors
- Retail Trade The induced impact of spending labor income and farm income generally have an impact on retail trade.
- Real Estate and Housing A large portion of labor income and, to some extent, farm income is directed toward real estate or housing. This category includes rental property in terms of farmland and also for housing.

Exhibit 9 presents the economic impact of Manitoba corn throughout the Manitoba corn supply chain. The following page contains notes that assist in explaining the diagram.

Exhibit 9: Economic Impact of Manitoba Corn Production



(See notes on the next page)



**Notes Related to Exhibit 9:**

*Region:* The diagram in Exhibit 9 only presents the impacts from Manitoba corn production as they affect Manitoba's economy. When looking at the impacts from a national level, the impacts are larger because there are suppliers to Manitoba that are located in other provinces.

*O:* Output, which is a measure of the total sales in the economy

*E:* Employment is a measure of the jobs added and, in the report, jobs are presented in full time equivalents (FTE) or 1 worker working for 40 hours each week.

*G:* Gross regional production is a value added measure considered to be the contribution to the national Gross Domestic Product.

*Model:* The results presented in the table were calculated using Informa's estimate of market size. The model is based on the Canadian Input-Output tables constructed by Statistics Canada. Corn multipliers and spending patterns are not currently included in the statistics Canada model, which led Informa to create a customized spending pattern for Manitoba corn that is derived from the estimated production costs for the 2012/2013 crop year.

**Key**

*Industries:* The total impacts are listed at the top of the diagram. In order to provide a brief view of the key supporting industries, select industries were listed in the flow chart. A more detailed list of the industries impacted is presented later in the report.

**D. Detailed Indirect and Induced Impacts for Key Industries in Manitoba**

Exhibit 10, Exhibit 11, and Exhibit 12 present impacts using the same industries as shown in Exhibit 9 but provide greater detail. The tables also present the impacts on a national scale, as the corn supply chain is not limited to Manitoba's borders.

Exhibit 10 presents the indirect and induced impact for key industries at the provincial level and for all of Canada. Inputs to corn production are the indirect benefactors from corn production, whereas retail trade, wholesale trade and real estate sectors benefit the most from the spending of income (induced impact). The induced impact from labor income and farm income provided \$6.13 million of support to the real estate sector in Canada and, when combined with the impact felt in

other provinces, supported all of Canada by \$12.57 million. The total multiplier for Manitoba output is equal to the direct, indirect and induced impacts divided by the direct impact and was 1.3  $[(216+65.32)/216]$ . The total multiplier on a national basis was 1.78  $[(216+167.90)/216]$ .

**Exhibit 10: Manitoba's 2012/2013 Corn Crop Indirect and Induced Impact on Output (Detail)**

Industry	Manitoba Output		Canada Output	
	Indirect	Induced	Indirect	Induced
Seed	\$5.28	\$0.01	\$5.85	\$0.04
Fertilizer and Chemicals	\$1.88	\$0.01	\$13.76	\$0.08
Wholesale Trade	\$7.27	\$1.22	\$11.77	\$3.66
Trucking	\$1.87	\$0.19	\$3.35	\$0.83
Banking	\$1.06	\$0.64	\$2.65	\$2.77
Insurance	\$1.64	\$0.72	\$2.31	\$1.84
Retail Trade	\$0.28	\$3.81	\$1.81	\$7.95
Real Estate and Housing	\$0.21	\$6.13	\$0.77	\$12.57
All Other	\$20.82	\$12.29	\$53.62	\$42.27
Subtotal	\$40.30	\$25.02	\$95.88	\$72.02
Total	\$65.32		\$167.90	

Source: Informa & Statistics Canada

Exhibit 11 presents the detailed indirect and induced impacts in terms of Gross Regional Product for Manitoba and all of Canada. The results in the table can be interpreted as the income and tax revenue generated in each industry as a result of the economic activity created by the Manitoba corn crop. The Gross Regional Product is higher for the 2012/2013 crop year than what would typically be expected because strong corn prices led to higher margins. Higher margins, resulting in higher farm income, have higher proportionate impacts to Gross Regional Product than to output and employment. Although \$35.99 million was added to the Manitoba economy, \$51.26 million was added to other provinces and provided for a total increase in the Canadian economy of \$87.25 million. The Gross Regional Product Multiplier for Manitoba was 1.44  $[(80.98+35.99)/80.98]$ . The multiplier on a national basis was 2.08  $[(80.98+87.25)/80.98]$ .

**Exhibit 11: Manitoba's 2012/2013 Corn Crop Indirect and Induced Impact on Gross Regional Product (Detail)**

Industry	Manitoba Gross Regional Product		Canada Gross Regional Product	
	Indirect	Induced	Indirect	Induced
Seed	\$3.03	\$0.00	\$3.41	\$0.02
Fertilizer and Chemicals	\$1.22	\$0.00	\$3.89	\$0.02
Wholesale Trade	\$3.87	\$0.65	\$6.45	\$2.06
Trucking	\$0.68	\$0.07	\$1.31	\$0.34
Banking	\$0.80	\$0.49	\$1.99	\$2.08
Insurance	\$0.87	\$0.38	\$1.20	\$0.93
Retail Trade	\$0.80	\$2.34	\$1.12	\$4.96
Real Estate and Housing	\$0.23	\$4.99	\$0.47	\$10.16
All Other	\$8.51	\$7.05	\$25.02	\$21.82
Subtotal	\$20.01	\$15.98	\$44.86	\$42.39
Total	\$35.99		\$87.25	

Source: Informa & Statistics Canada

Employment is presented in Exhibit 12 in the form of full time equivalent (FTE) jobs. Each full time equivalent job is defined as one person working for one year using a standard work week. Although farming is a relatively capital intense enterprise, the indirect activity that supports agriculture is relatively more reliant on labor. The direct impact on jobs presented in Exhibit 9 was 450 jobs, but the total employment supported through indirect and induced impacts in Canada was 822. This provides total jobs of 1,272. Employment was also impacted by higher farmer margins. The additional farm income was assumed to stay in Manitoba at the same rate as past spending suggests. As a result, the additional farm income provided more spending (induced impacts) and increased the jobs supported by the Manitoba corn crop. The employment multiplier for Manitoba was 1.90  $[(450+403)/450]$ . On a national basis the multiplier was 2.83  $[(450+822)/450]$ .

**Exhibit 12: Manitoba's 2012/2013 Corn Crop Indirect and Induced Impact on Employment (Detail)**

Industry	Manitoba Employment (FTE)		Canada Employment (FTE)	
	Indirect	Induced	Indirect	Induced
Seed	17	0	18	0
Fertilizer and Chemicals	4	0	14	0
Wholesale Trade	31	5	57	20
Trucking	13	0	23	6
Banking	4	0	11	11
Insurance	3	0	4	3
Retail Trade	15	45	21	92
Real Estate and Housing	0	2	1	5
All Other	139	124	241	294
<b>Subtotal</b>	<b>227</b>	<b>176</b>	<b>391</b>	<b>431</b>
<b>Total</b>	<b>403</b>		<b>822</b>	

Source: Informa &amp; Statistics Canada

## E. Downstream Impacts

In an economic impact analysis, each industry is credited with their impact upstream through the supply chain. Corn is credited with the impact it has on its industry as well as suppliers such as the seed and the fertilizer industry. Downstream economic activity is typically credited with the impact to corn. However, industries that use a high level of corn likely would not expand in Manitoba if the corn production there began to shrink. This report provides the downstream uses of corn, because at a minimum corn production in Manitoba provides stability in the supply chain and, in some cases, encourage downstream businesses to expand production. Exhibit 13 provides corn use and the total revenue for key downstream industries in Manitoba.

**Exhibit 13: Consumers of Manitoba Corn**

Description	Manitoba Corn Used (Thousand Metric Tonnes)	U.S. Imports (Thousand Metric Tonnes)	Size of the Industry in Manitoba (millions)
<b>Ethanol</b>	<b>198</b>	<b>35</b>	<b>\$ 104</b>
<b>Livestock</b>	<b>512</b>	<b>246</b>	<b>\$1,879</b>
<b>Cattle</b>	11.8	5.7	\$ 515
<b>Hogs</b>	396	190	\$ 925
<b>Poultry</b>	105	50	\$ 439
<b>Distillery</b>	<b>45</b>	<b>15</b>	<b>NA</b>
<b>Outshipments</b>	<b>60</b>	<b>NA</b>	<b>NA</b>
<b>Total</b>	<b>815</b>	<b>296</b>	<b>\$1,984</b>

Notes:

*Ethanol industry size uses ethanol revenue and revenue from DDGs. Only DDGs from corn production were used in the calculation.*

*Industry sizes for livestock were taken from Statistics Canada estimates for 2011, the most recent year that complete data was available at the timing of this report.*

*Interviews (with third parties not directly working for the distillery) indicated that the distillery at Gimli uses 60,000 metric tonnes of corn on an annual basis. The plant is not listed in the census of manufacturing due to confidentiality, which is why their revenue is listed as "Not Available" (NA) & outshipments impact industries outside of Manitoba, hence the NA designation under industry size.*

Source: Informa, Statistics Canada, Global Trade Atlas (GTIS)

The direct economic impacts from the ethanol and livestock operations listed in Exhibit 13 are attributable to their own industry. However, each industry is assisted by having a local supply of corn. Growing local supplies of corn, in some cases, assist the industries in maintaining or growing their size. The table in Exhibit 14 and diagram in Exhibit 15 show the direct impact of the listed industries in terms of output, employment, and Gross Regional Product. Combined, the

industries that use corn contribute \$485 million to the Manitoba economy from sales of \$1,984 million and direct employment of 15,196.

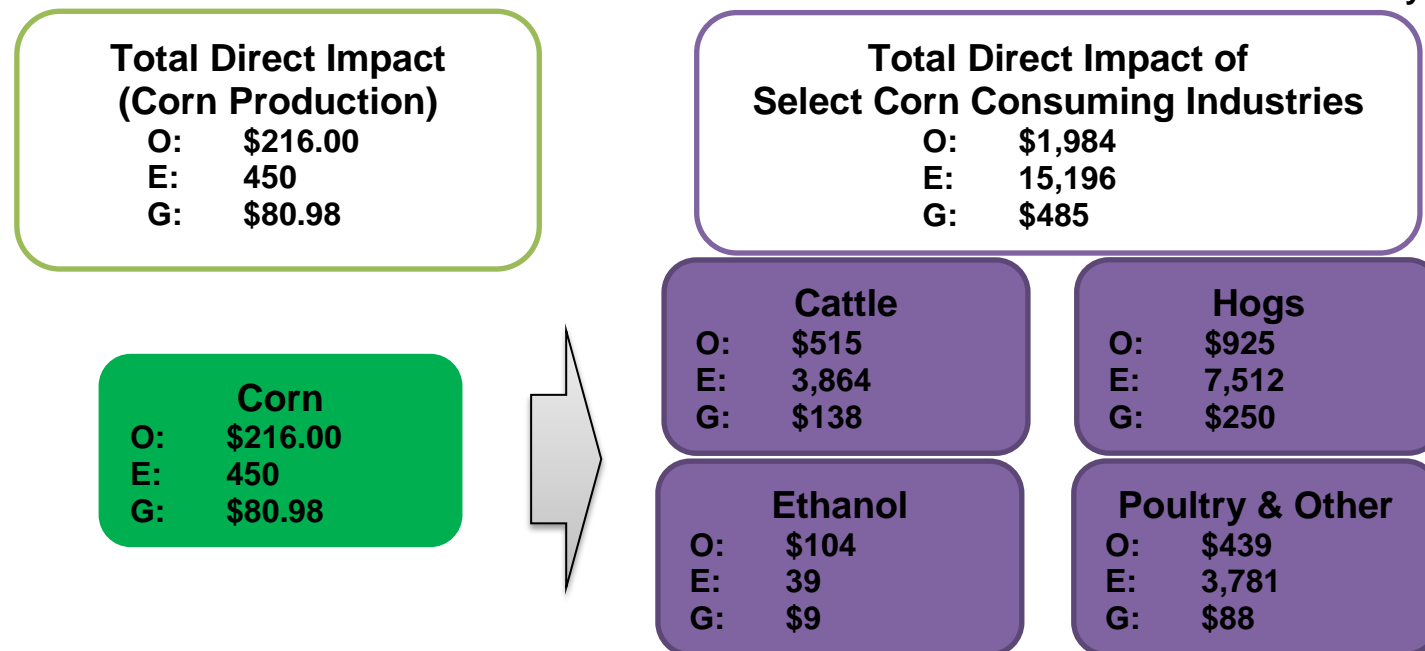
**Exhibit 14: Direct Economic Impact of Corn Users in Manitoba**

Industry	Output (Millions)	Employment (FTE Jobs)	Gross Regional Product (Millions)
Ethanol	\$104	39	\$ 9
Beef Cattle	\$272	1,868	\$60
Dairy Cattle	\$243	1,996	\$78
Hogs	\$925	7,512	\$250
Poultry and Other	\$439	3,781	\$88
<b>Total</b>	<b>\$1,984</b>	<b>15,196</b>	<b>\$485</b>

Note: Estimate does not include the distillery at Gimli or outshipments used for industries in other provinces.

Source: Informa, Statistics Canada

**Exhibit 15: Size of Industries Downstream from the Corn Production Industry**



## IV. CONCLUSIONS

Manitoba corn production supports Manitoba and other provinces in Canada. As a result of higher revenue per acre than alternative crops, Manitoba corn production provides a boost to the regional economy. For the 2012/2013 crop year corn production in Manitoba provided the regional economy with Gross Regional Product of \$116.97 million in support through business sales of \$281.32 million and employment of 852 jobs. The boost to the Manitoba economy from choosing corn over an alternative, such as canola, was an additional Gross Regional Product of \$16.06 million from increased sales of \$121.13 million and employment of 168 jobs.

The economic impact multiplier is defined as direct, indirect, and induced impacts divided by the direct impacts. The economic impact multipliers for Manitoba and for all of Canada are presented in Exhibit 16 below.

**Exhibit 16: 2012/2013 Manitoba Corn Economic Multipliers**

<b>Economic Impact Type</b>	<b>Manitoba</b>	<b>Canada</b>
<b>Output</b>	1.30	1.78
<b>Gross Regional Product</b>	1.44	2.08
<b>Employment</b>	1.90	2.83

Source: Informa

The multipliers were impacted for the 2012/2013 crop year due to higher corn margins. Higher prices equated to additional farm income, which increased both the gross regional product and employment multipliers. The output multiplier was also slightly increased as the result of the induced impact in the economy.

Although downstream economic activities are assumed to drive the upstream activities, it is notable to mention the downstream industries that rely on corn as an input. These industries benefit from a local corn supply in terms of supply stability and in some cases, from the realized prices paid. Manitoba corn primarily goes to ethanol production and livestock feeding which, were \$104 million (2012) and \$1.879 billion (2011) industries respectively within Manitoba.