

A Historical Review of Changes in Farm Size in Canada

Hongyu Chen
Alfons Weersink
Martin Beaulieu
Yu Na Lee
Katrin Nagelschmitz

January 2019

Working Paper Series – WP 19-03

Institute for the Advanced Study of Food and Agricultural Policy
Department of Food, Agriculture, and Resource Economics
University of Guelph

Hongyu Chen is a graduate research assistant in the Department of Food, Agricultural and Resource Economics (FARE) University of Guelph, Alfons Weersink is a Professor in the Department of FARE University of Guelph, Martin Beaulieu is Chief for Statistics Canada, Ottawa, Yu Na Lee is a Assistant Professor in the Department of FARE University of Guelph, Guelph, Ontario, Canada N1G 2W1, and Katrin Nagelschmitz is a Deputy Director for Agriculture and Agri-Food Canada (AAFC), Ottawa.

A Historical Review of Changes in Farm Size in Canada

1. Introduction

The structure of Canadian agriculture has changed significantly over the last century, and consequently so must the policies targeted toward the sector. The most obvious change is the significant decline in the number of farms and farmers, and a corresponding increase in farm size (Goddard et al. 1993). However, the declines have not occurred evenly through time nor commodity. The result is that Canadian agriculture has moved away from being very homogeneous with farms of a similar size and structure to one with growing numbers of small and large farms but fewer in the middle. The heterogeneity complicates the assessment and design of farm policy (Weersink 2018).

The purpose of this paper is to provide an overview of the changes in farm numbers and size in Canada over time. It begins with a description of the changes in the total number of farms and farmers reported in the Census of Agriculture over time and includes an analysis of these changes at the provincial level and across different farm sectors. The next section describes the corresponding temporal changes in average farm size across sectors and provinces followed by a discussion of the changes in the distribution of farm size. The chapter concludes with the main trends noted in the distribution of farm size over time and the implications for the subsequent analysis on the factors driving these observed changes.

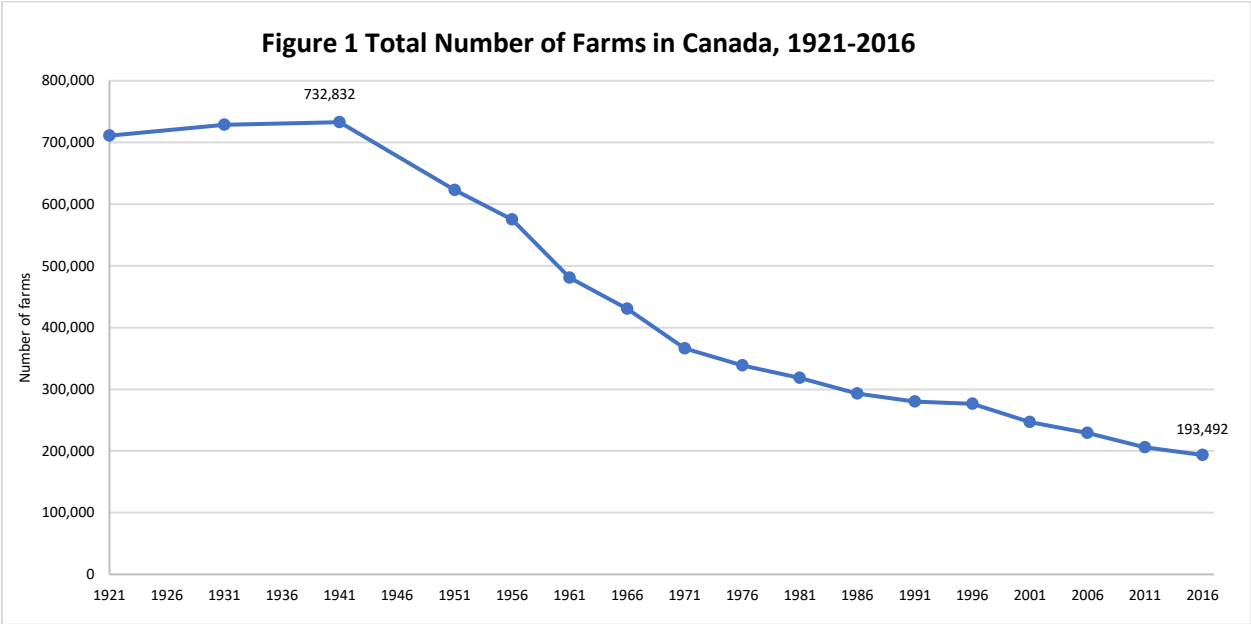
2. Number of Farms and Farm Operators

2.1. Total Number of Farms

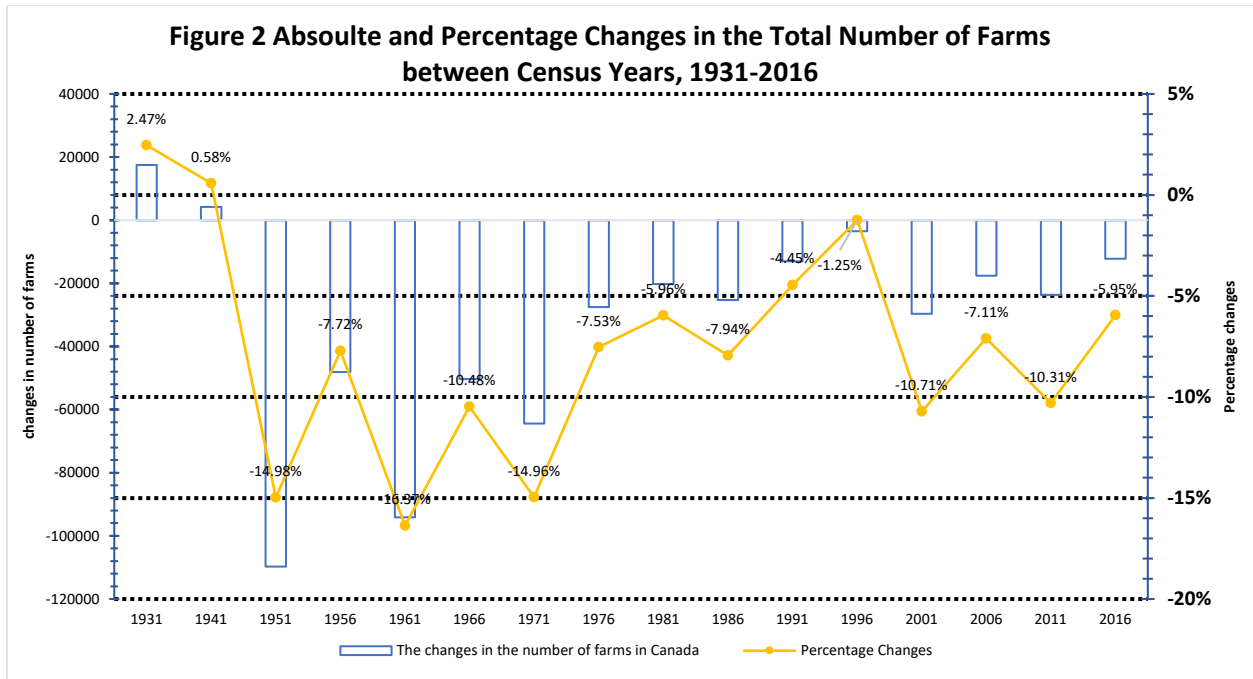
The total number of farms in Canada has declined steadily from its peak in 1941 (aside from a small increase reported in the 1996 census, as illustrated in Figure 1) due largely to technological advances and off-farm economic opportunities (Goddard et al 1993). There were more than 732,000 farms in 1941 but this dropped to less than 194,000 farms in 2016 - a reduction of approximately 75% over the 75-year period.

The absolute and percentage changes in farm numbers between census years are illustrated in Figure 2. The largest reduction in both absolute and percentage terms occurred between 1951 and 1971. The average reduction in the 5 years between censuses was approximately 15% in this 20-year period while the average reduction in farm numbers since 1976 has been less than half this rate. While the rate of decline in farm numbers is slowing, there continue to be differences in the annual rate.

Note that the current definition of a farmer and a census farm used by Statistics Canada is based on the potential ability and desire to sell agricultural products. It does not include a minimum sales criterion; rather Canadian farmers and the farms they operate are self-identified with potentially minimal sales. The all-encompassing definition of a census farm permits a measurement of total agricultural production, which is the purpose of the Census (Poon and Weersink 2014). Determining aggregate measures such as total production or farmland area requires measuring all potential farmers and farms but there are cautions with using such a broad definition of a farm for other purposes.

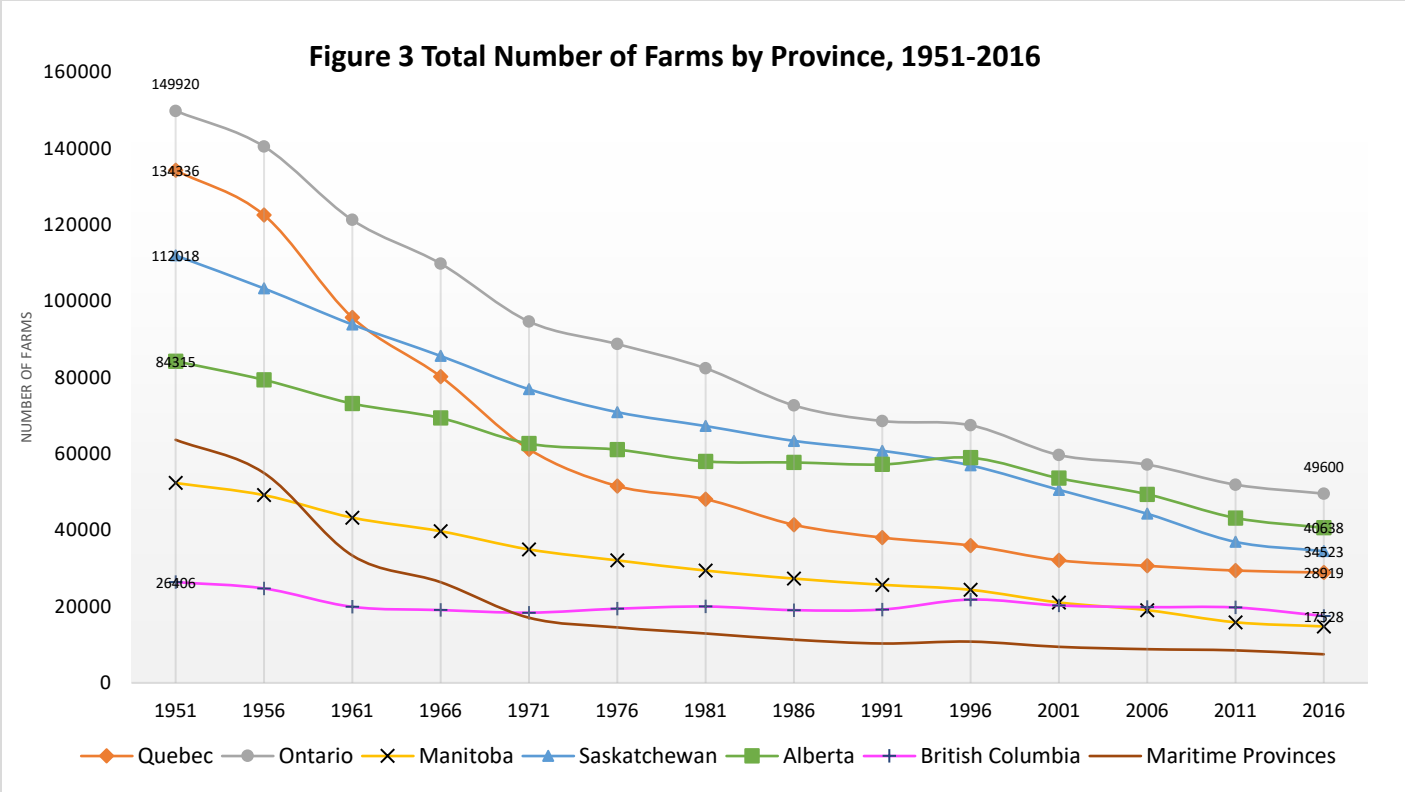


Source: Statistics Canada *CANSIM Tables 004-0001 and Table 004-0237*



Source: Statistics Canada *CANSIM Tables 004-0001 and 004-0237*.

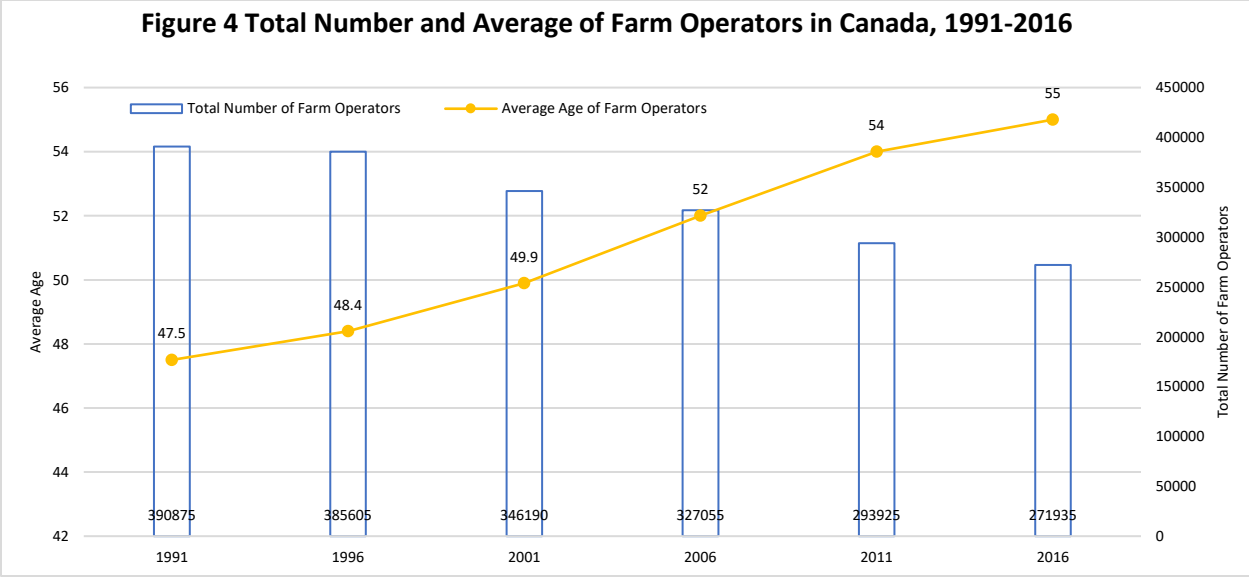
The regional differences in farm numbers over time are illustrated in Figure 3. Ontario continues to be the province with the most farms but the current number of roughly 50,000 is one-third of the number that existed in 1951. Quebec had the second most farms in 1951 (134,336) but now has the fourth highest number of farms in the country (28,919) with most of the decline happening before the turn of the century. Alberta now has the second most farms in the country at 40,638 whereas it had the fourth most in 1951 (84,335); farm numbers declined in Alberta but not at the rate experienced in other provinces. For example, there was an approximate 50% drop in the number of farms in Alberta while the number of farms fell by nearly 70% in neighbouring Saskatchewan. The exception to the steady decline in farm numbers is British Columbia where the number of farms has been relatively constant over time at slightly less than 20,000.



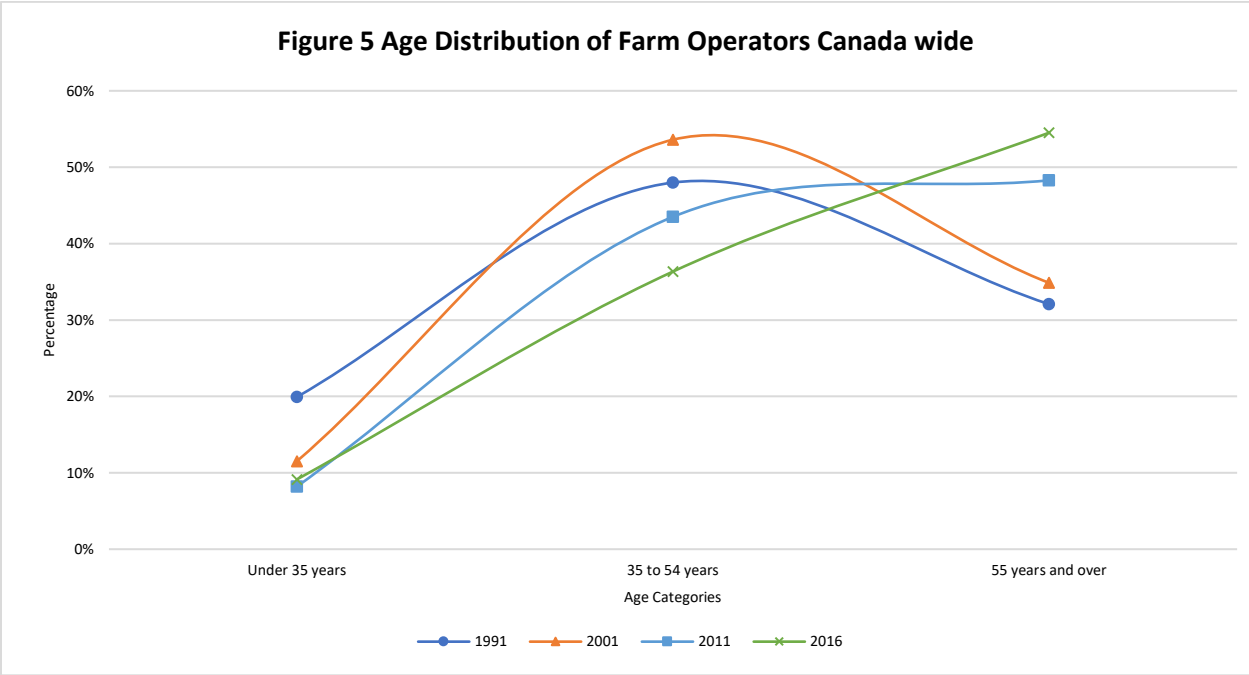
Source: Statistics Canada *CANSIM Tables 004-0001 and 004-0237*.

2.2. Total Number of Farm Operators

A farm can be operated by more than one individual and a single farmer can operate more than one farm. While farm operations are more complex and not necessarily run by a single farmer, the number of farm operators has declined from 390,875 in 1991 to 271,935 in 2016 (Figure 4). The rate of decline in the number of farmers is similar to the trend in the number of farms. The ratio between farmers and farms has remained at approximately 1.4 over the last 25 years.



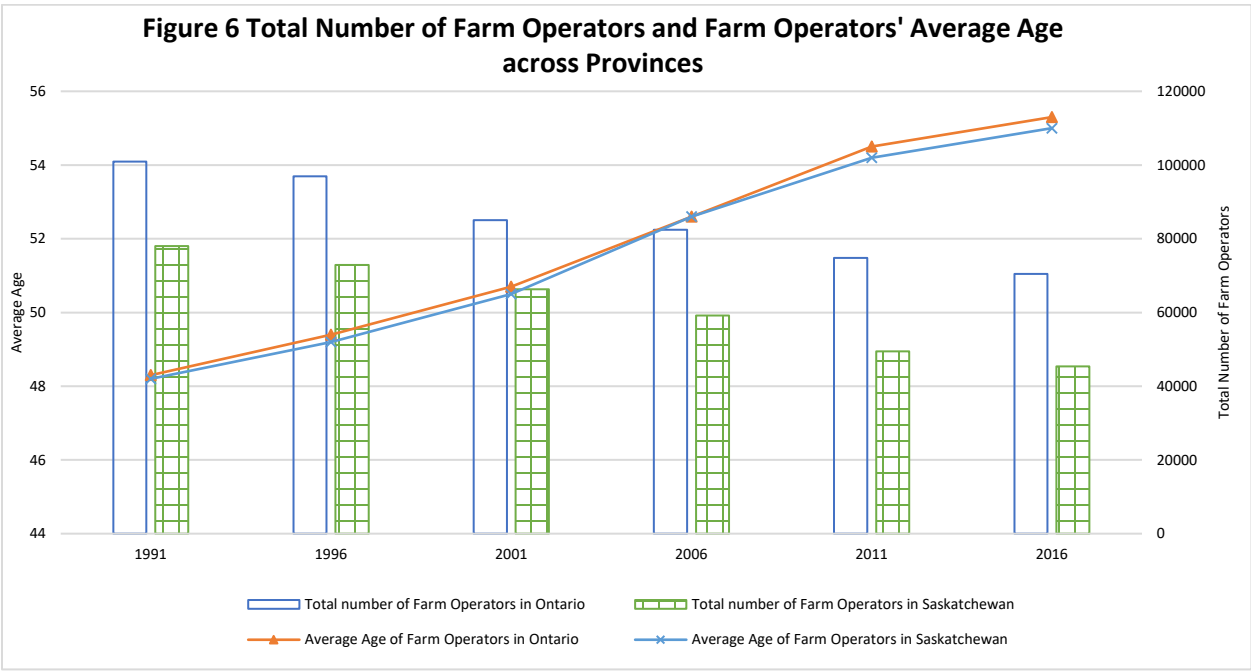
Source: Statistics Canada *CANSIM Tables 004-0017, 004-0238 and 004-0239.*



Source: Statistics Canada *CANSIM Tables 004-0017, 004-0238 and 004-0239.*

The average age of farm operators in Canada has increased steadily from 47.5 years in 1991 to 55 years in 2016 (see Figure 4) and these averages are similar to that observed in both Ontario and Saskatchewan (see Figure 5). The aging of farm operators is due larger to the greater share of farmers in the

older age cohort as illustrated in Figure 5. The portion of young farm operators (under 35 years) fell significantly from 20% in 1991 to around 10% in the next census but the share has remained relatively constant since that time. The most noticeable change is the share of middle-aged farmers. The percentage of farm operators between 35 to 54 years was 48% in 1991 and peaks at 54% in 2001 but has since dropped to 36% in 2016. In contrast, the percentage of farmers 55 years and above has grown from 32% in 1991 to 55% in 2016. As a result, the age distribution of farmers in Canada has changed from a bell-shaped curve in 1991 to upward, linear distribution in 2016. The shift in the age distribution observed nationally is mirrored at the provincial level.

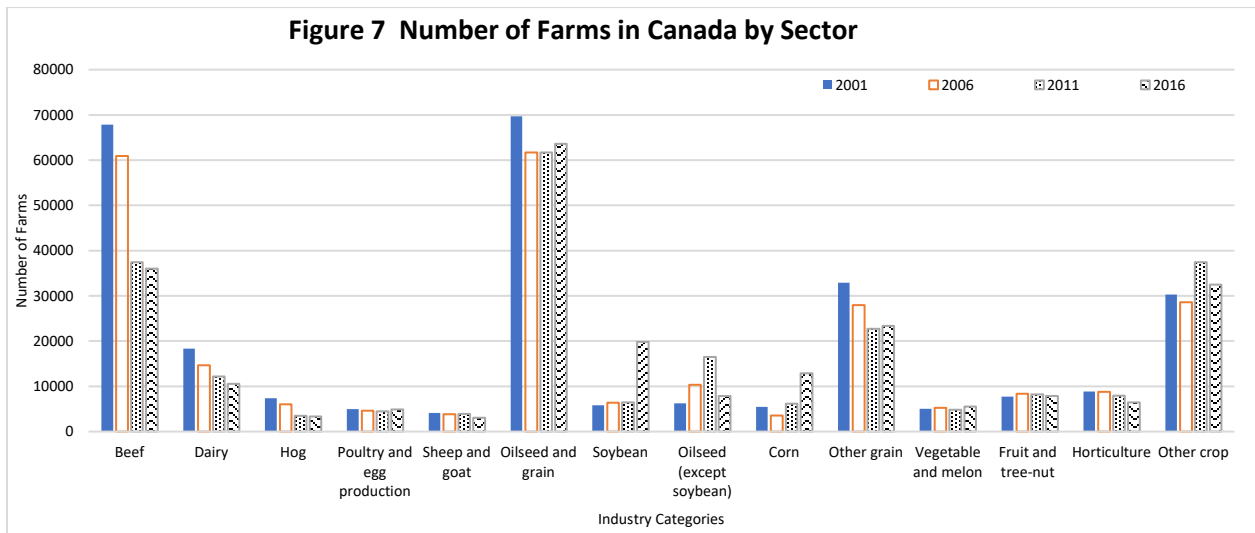


Source: Statistics Canada *CANSIM Tables 004-0017, 004-0238 and 004-0239.*

2.3. Total Number of Farms by Sector

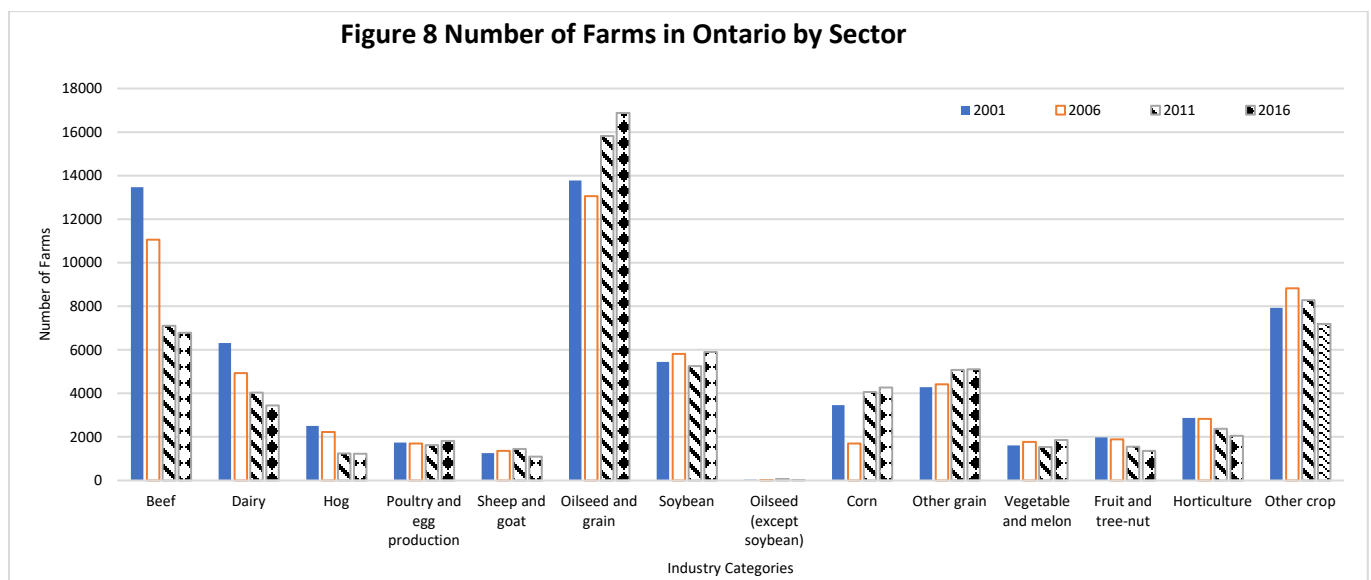
The approximate 20% reduction in total farm numbers observed nationally since 2001 (see Figure 1) did not occur evenly across alternative sectors. The number of farms by type in Canada for the last four census periods are illustrated in Figure 7. Approximately 70,000 farms in Canada in 2001 were either

raising beef or growing grain/oilseeds. However, there are less than half the number of beef farms 15 years later. There was a 40% reduction in the number of beef farms between 2006 and 2011 due largely to the BSE (Bovine spongiform encephalopathy) outbreak in Alberta in 2003. Forty countries, including the United States and China, banned imports of Canadian beef thereby decreasing its demand and subsequently the price for Canadian beef. Many beef farms were forced to exit the industry due to the extended period of low prices. The number of hog farms have also been cut in half from 7,388 in 2001 to 3,305 farms in 2016. As with the beef sector, the hog industry faces a volatile, competitive market, and the largest relative reduction in hog farm numbers occurred during periods of low hog prices. Although the Canadian dairy sector is insulated from the price volatility observed in the red meat sector due to its supply management marketing system, there was still a significant decline in the number of dairy farms; 18,321 farms in 2001 to 10,525 farms in 2016. Yet, the number of poultry farms, which also operate within a supply management system, and the number of sheep farms, which are not supply managed, remained relatively constant over the last 15 years suggesting factors other than marketing system, such as technologies, also have an impact on farm numbers.



Source: Statistics Canada *CANSIM Tables 004-0014 and 004-0200.*

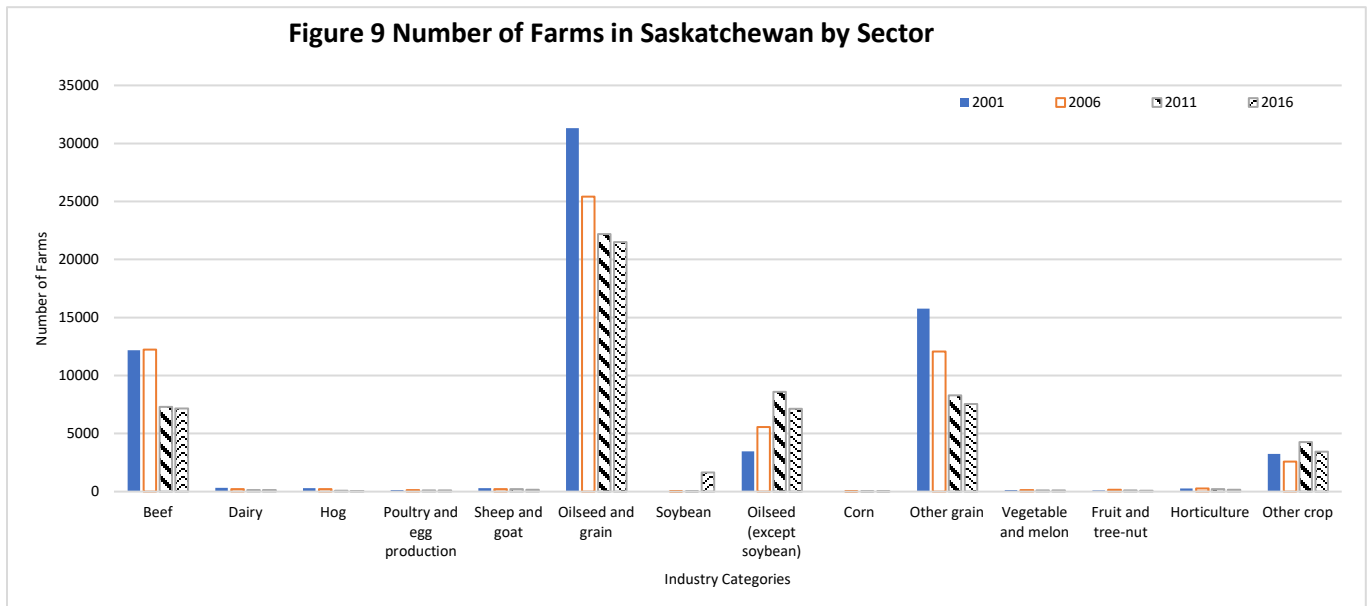
In contrast to the livestock sector in general, the number of crop farms remained relatively constant between 2001 and 2016. Although oilseed and grain farms declined between 2001 and 2006, the industry has grown slowly since that time. The breakdown by crop shows some fluctuations due likely to changes in prices as prices between 2007 and 2014 were significantly higher than the years between 2001 and 2006 and after 2015. The improvements in shorter-season varieties have also allowed soybeans and grain corn to be grown by more farmers across the country. The number of vegetable and melon, fruit and free nut, horticulture and other crop farms in Canada have not changed significantly over the last 15 years.



Source: Statistics Canada *CANSIM Tables 004-0014 and 004-0200*.

The differences in the number of farms by sector are illustrated for Ontario in Figure 8 and Saskatchewan in Figure 9. The changes in farm numbers for the livestock sector in Ontario mirror the trends observed at the national level; a decline in red meat and dairy farm numbers and constant for other livestock farms. However, unlike the trend across Canada in the number of farms growing oilseeds and grains, there has been an increase in the number of crop farms in Ontario. Soybean and corn farm numbers have grown with some fluctuation due to prices. For example, the number of operations in Ontario growing corn rose from 1,694 in 2006 to 4,265 in 2016 due to the dramatic increase in corn prices. Shorter season varieties also

allowed corn to be grown in non-traditional areas in the province. The number of other crop farms in Ontario has remained relatively stable since 2001.

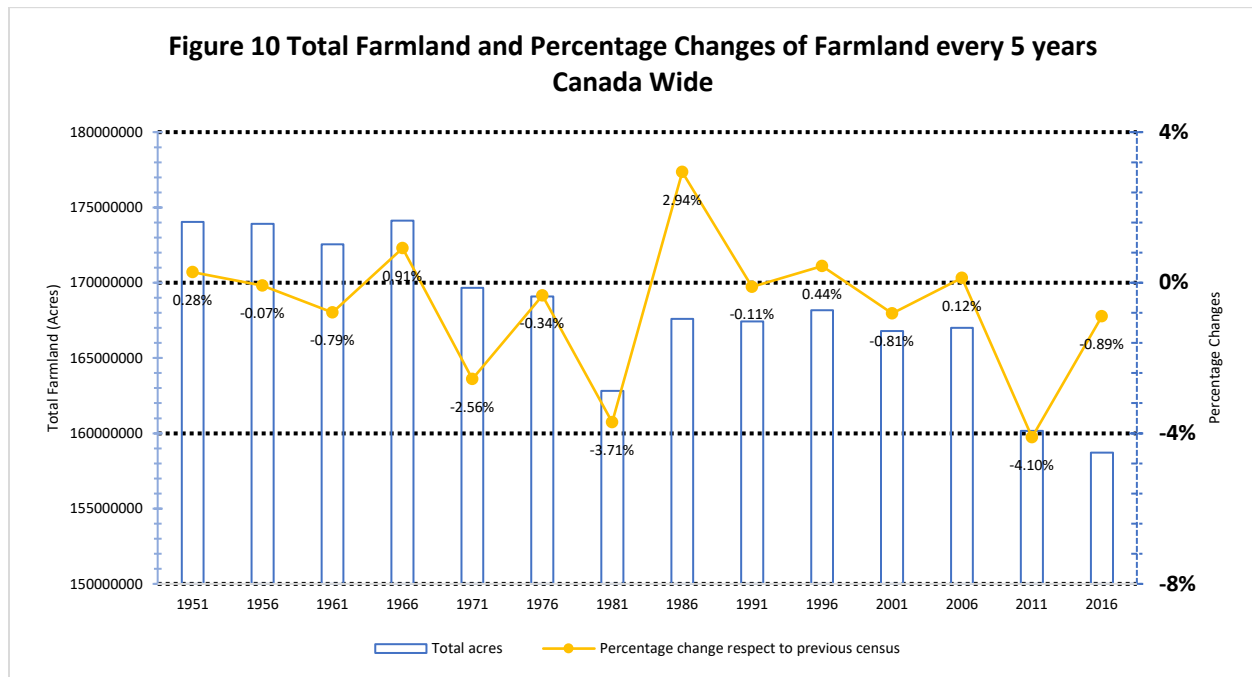


Source: Statistics Canada *CANSIM Tables and 004-0200*.

The difference in the agricultural sector between Ontario and Saskatchewan is highlighted by comparing Figures 8 and 9. The agricultural sector is of significant economic importance to Saskatchewan but the sector is concentrated primarily within the beef, oilseeds, and grain industries. In contrast, the agricultural sector is significantly more diversified in Ontario. For example, there are less than 350 farms in Saskatchewan that are not raising beef, oilseeds, grains, and other crops. The trend in beef farm numbers in Saskatchewan is similar to the declining trend in the beef sector across Canada. There has been a significant increase in the number of oilseed farms and a corresponding decrease in the number of grain farmers in Saskatchewan through the 15-year period. The change is due to the difference in relative returns for canola (an oilseed crop) versus durum wheat (the primary grain crop grown in Saskatchewan).

3. Average Farm Size

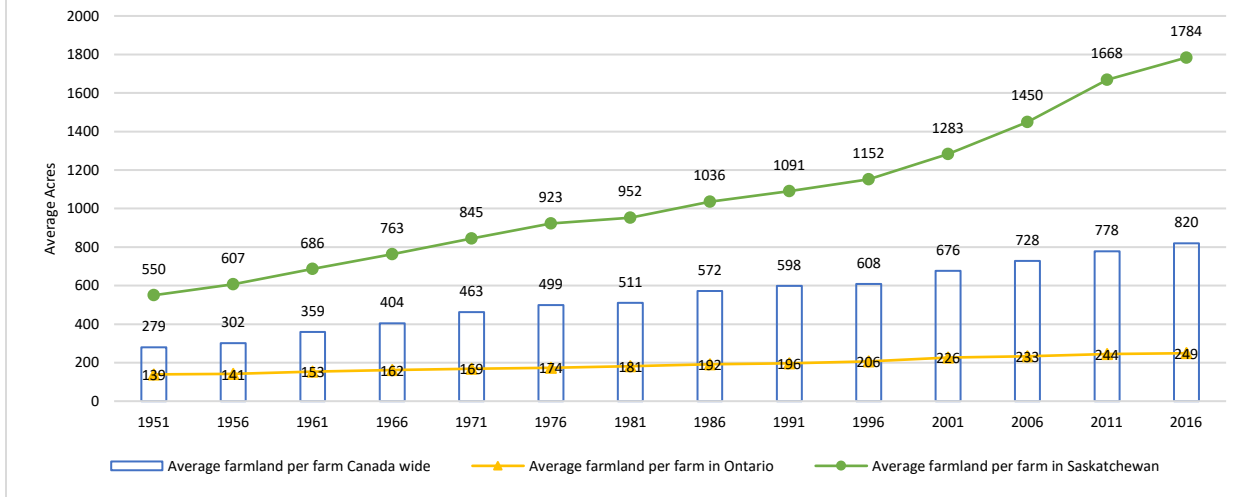
3.1. Average Farm Size by Land Area



Source: Statistics Canada *CANSIM Tables 004-0002 and 004-0204*

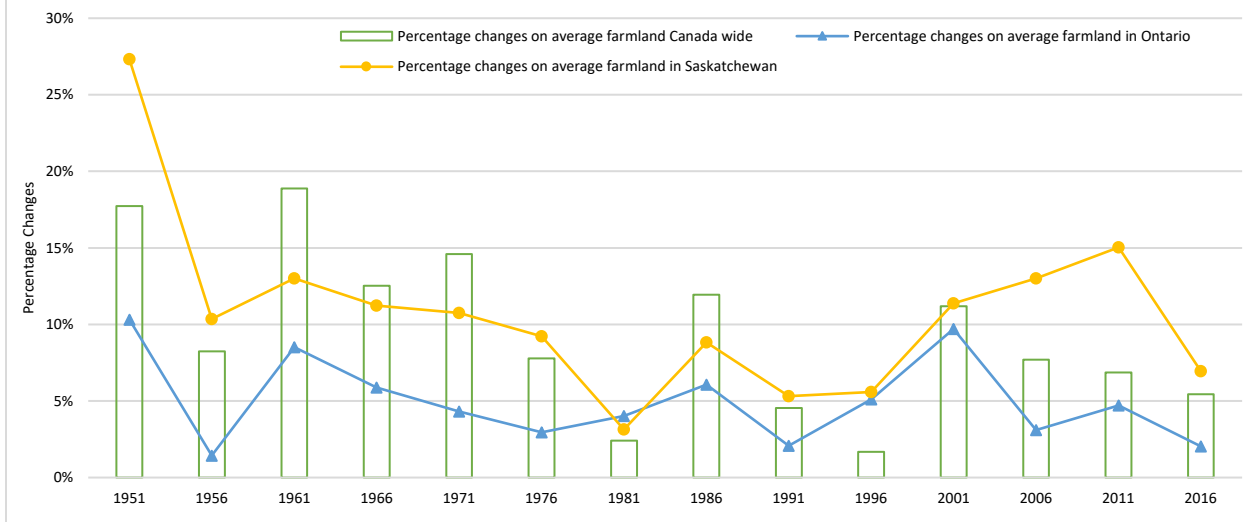
Although there has been a significant drop in the number of farms since 1951, the amount of agricultural land has not changed significantly. There were approximately 170 million acres in production in 1951 and almost 160 million acres of farmland in 2016 (see Figure 10). Given the decline in the number of farms and the relatively constant area farmed, average farm size has subsequently increased from 279 acres in 1951 to 820 acres in 2016 (see Figure 11). The percentage changes in the average farm size between census years are illustrated in Figure 12. The approximate 15% increase in average farm size that occurred every 5 years between 1951 and 1971 coincided with the large relative decline in farm numbers during this period (see Figure 2).

Figure 11 Average Farm Size in Canada, Ontario and Saskatchewan (Acres of Farmland per Farm)

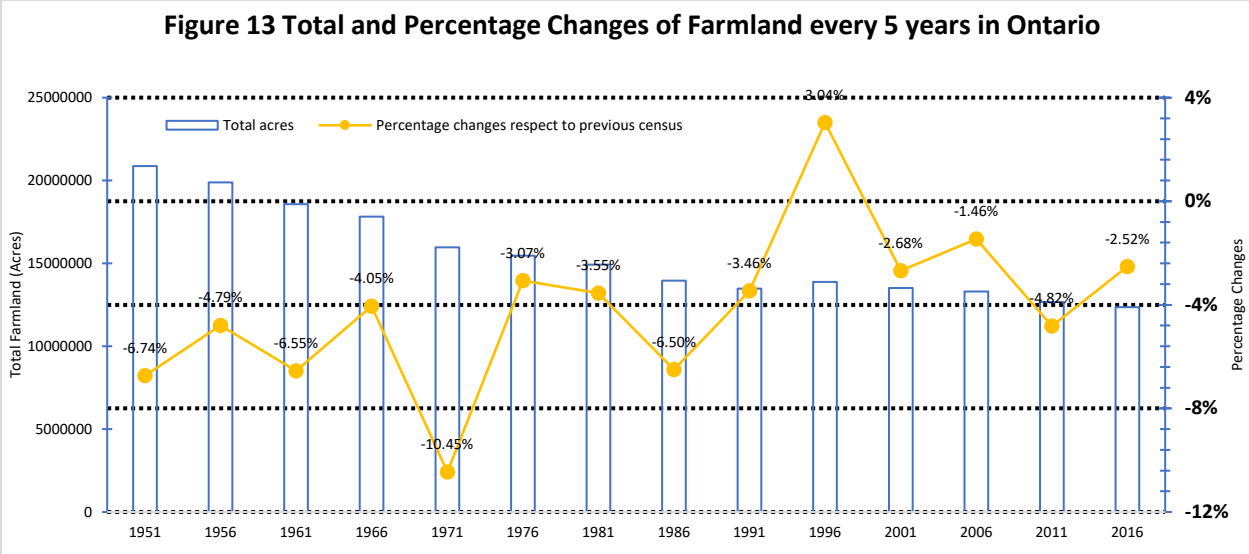


Source: Statistics Canada *CANSIM Tables 004-0002 and 004-0204*

Figure 12 Percentage Changes in Average Farm Size in Canada, Ontario and Saskatchewan

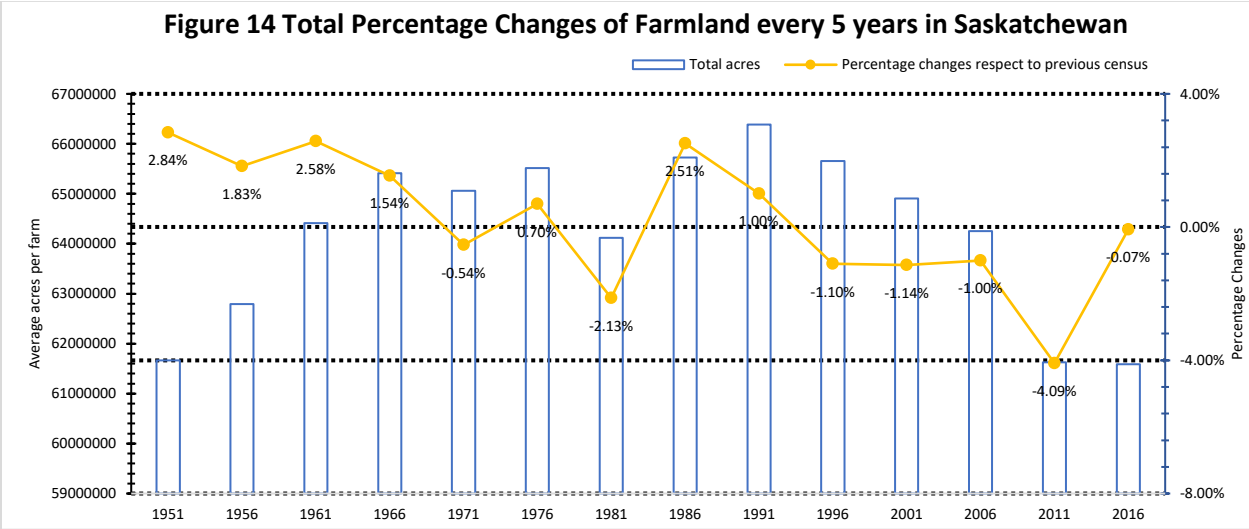


Source: Statistics Canada *CANSIM Tables 004-0002 and 004-0204*



Source: Statistics Canada *CANSIM Table 004-0002 & Table 004-0204*

Unlike the trend in total agriculture land across Canada, the total acres of farmland in Ontario has dropped significantly. Most of the approximate 41% decrease in total farmland in Ontario observed between 1951 and 2016, occurred prior to 1991. There were approximately 21 million acres in agricultural production in 1951 and around 12 million acres of farmland in 2016 (see Figure 13). Although farmland area fell, the rate of decline was less than the decrease in farm numbers resulting in an increase in farm size over time from 139 acres in 1951 to 249 acres in 2016 (see Figure 11). Average farm size in acres per farm has increased by approximately 5% between census years in Ontario (see Figure 12).



Source: Statistics Canada *CANSIM Tables 004-0002 and 004-0204*

The trend in Saskatchewan farmland represents a further contrast to the declining trend in Ontario and the constant value nationally. Farmland rose from 1951 to 1991 but has fallen since that time with a significant fall between 2006 and 2011 (see Figure 14). Combining the general increase in farmland with the decline in farm numbers, average farm size in Saskatchewan has increased more than three-fold from 550 acres in 1951 to 1,784 acres in 2016. The rate of increase in average farm size in Saskatchewan is more than double the increase noted in Ontario (see Figure 12).

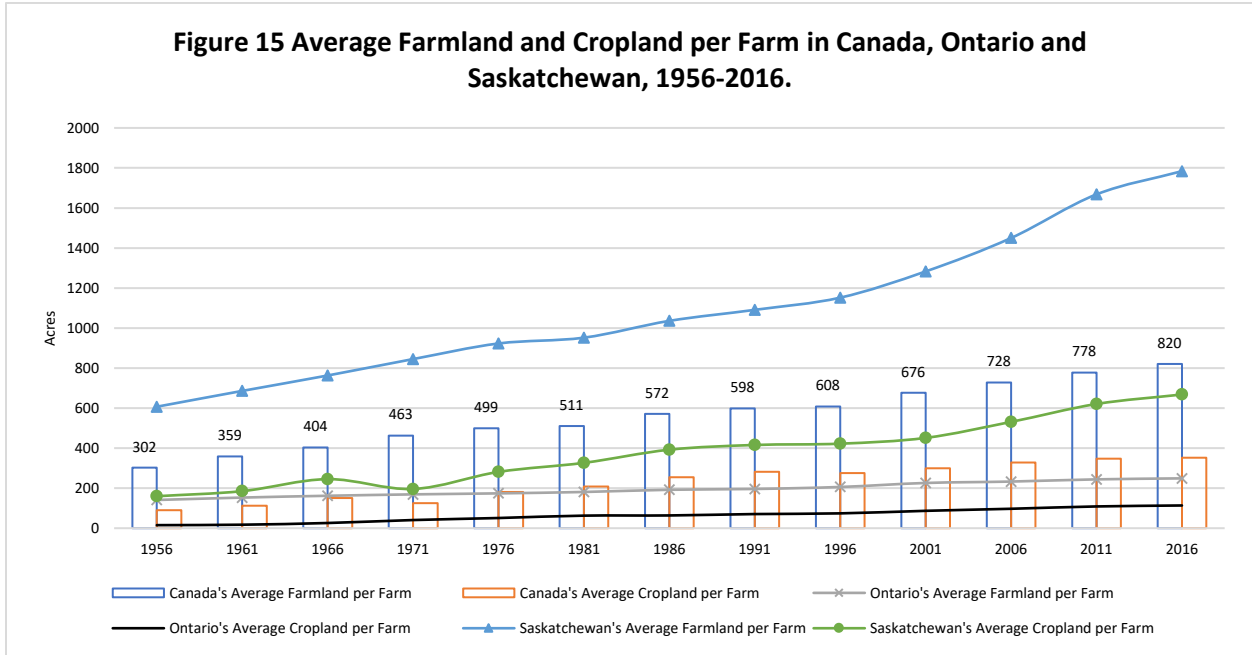
3.2. Average Farm Size- Farmland Versus Cropland

The values for the average farm size in terms of land area vary with the measure of land area. The above discussion used the typical measure - farmland. Farmland is defined by Statistics Canada to include “cropland, summerfallow, improved and unimproved pasture, woodlands and wetlands, all other land (including idle land, and land on which farm buildings are located)” (Statistics Canada 2017a). An alternative base measure is cropland, which is defined as the total area of all census crops used for producing crops including hay field crops, tree fruits or nuts, berries or grapes, vegetables, seed...” (Statistics Canada 2017b).

The total farmland in Canada has remained relatively constant at around 160 million acres. However, cropland area has fluctuated from a low of nearly 20 million acres in 1971 to a high of nearly 40 million acres in 1991. In contrast, the area of cropland has risen steadily in Ontario while the area of farmland has fallen over time resulting in the share of cropland of total farmland rising from around 5% in 1961 to over 27% in 2016. The opposite has occurred in Saskatchewan - cropland represented nearly a third of total farmland in 1986 but it was less than 20% in 2016.

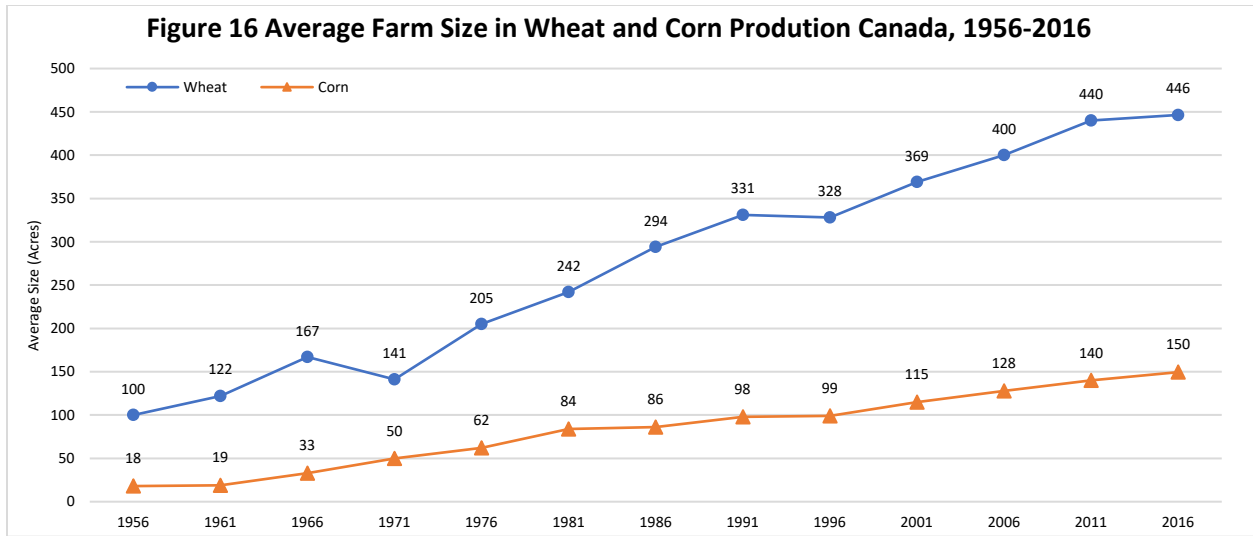
The effect of using farmland versus cropland on average farm size is illustrated in Figure 15.

Average farm size is smaller using cropland rather than farmland given the definition of cropland is more restrictive and the resulting total less than farmland. While the rate of increase in average farm size using cropland rather than farmland is similar across Canada, the rate of increase is faster in Saskatchewan and slower in Ontario due to the differences in growth of cropland area.



Source: Statistics Canada *CANSIM Table 004-0002, 004-0003, 004-0204 & 004-0213*

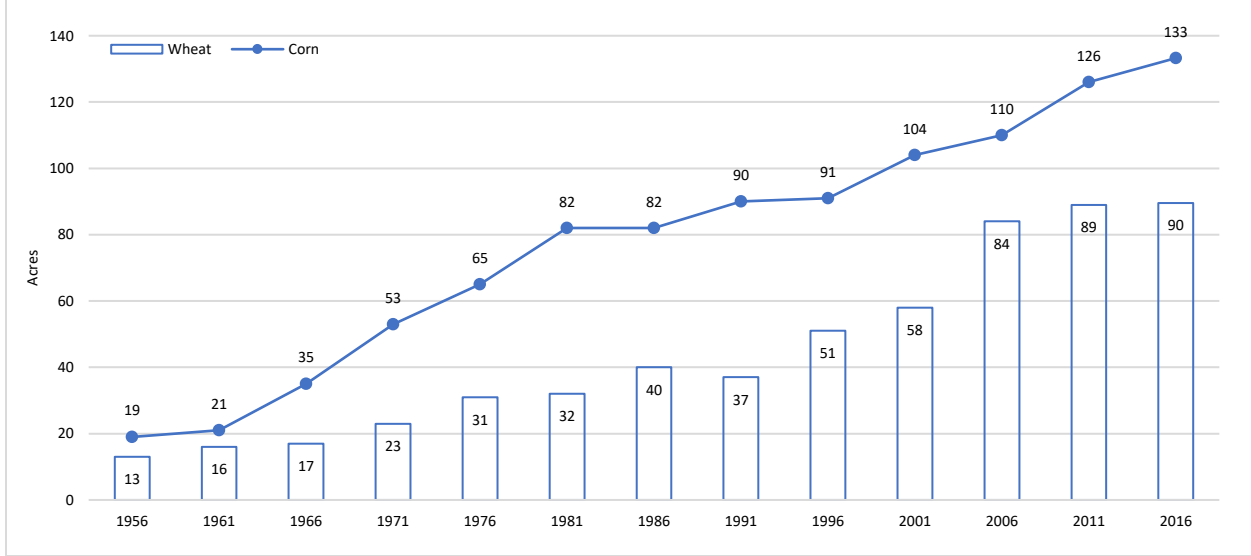
3.3. Average Farm Size by Crop



Source: Statistics Canada *CANSIM Tables 004-0003 and 004-0213*

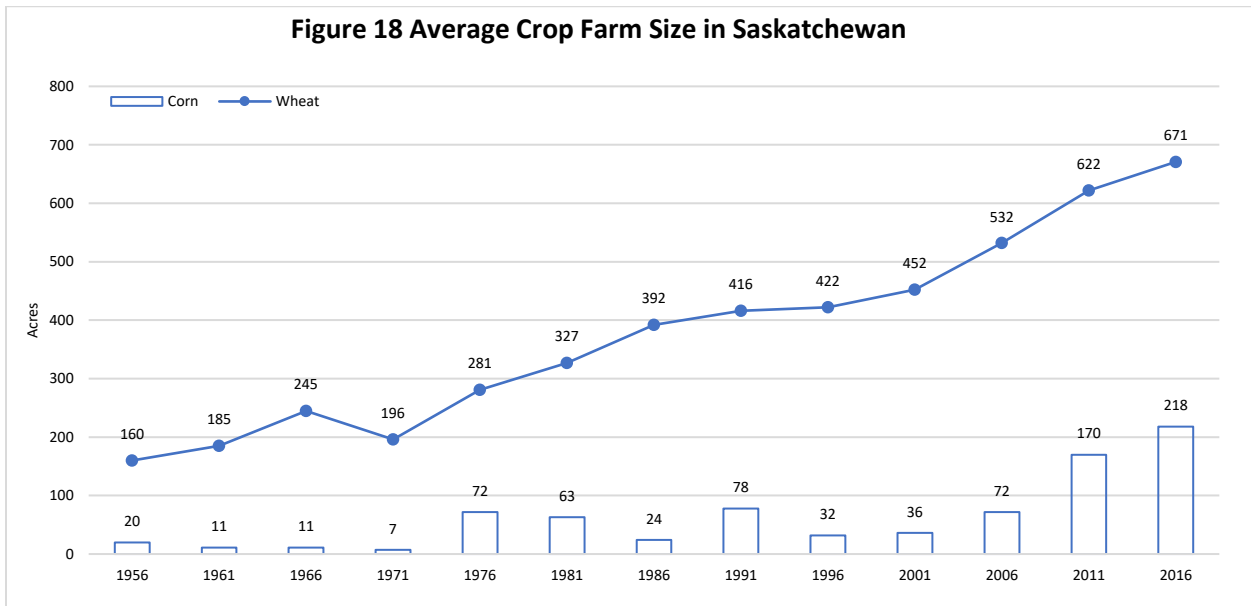
Average farm size differs depending on the crop grown, which is related to the regional differences discussed above. The average area of wheat planted per farm in Canada was 100 acres in 1956 and grew more than fourfold to 446 acres in 2016 (Figure 16). The average farm size based on farmland (820 acres) is almost twice the size of average amount of wheat grown; highlighting the dominance of wheat as the major crop grown in terms of planted area. The average amount of wheat grown by wheat farms is nearly 2.5 times the average size of corn area planted by farms growing corn. However, the average size of corn farms has increased more than eight times from 18 acres in 1956 to 150 acres in 2016 (Figure 16). The average amount of corn grown per farm in Ontario (133 acres) is near the national average and is higher than the average amount of wheat grown (90 acres) reflecting the relative profitability of corn compared to wheat (Figure 17). In contrast, the average amount of wheat grown per farm in Saskatchewan (671 acres) is over three times the average amount of corn grown (218 acres) although this amount has grown significantly over the last decade due to the development of earlier maturing corn varieties (Figure 18).

Figure 17 Average Crop Farm Size in Ontario



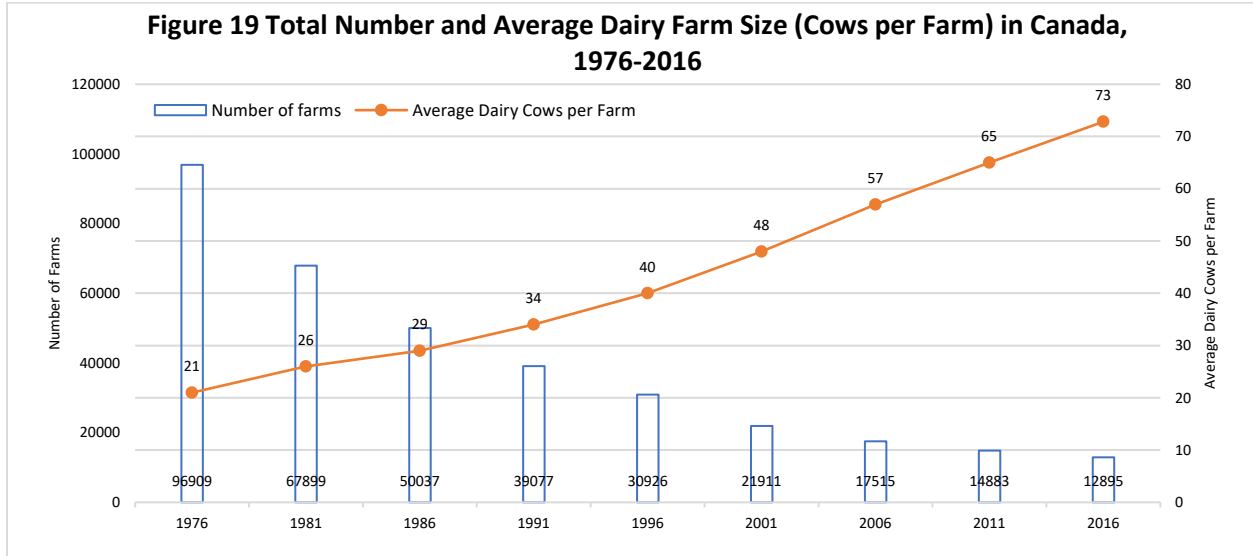
Source: Statistics Canada *CANSIM Tables 004-0003 and 004-0213*

Figure 18 Average Crop Farm Size in Saskatchewan



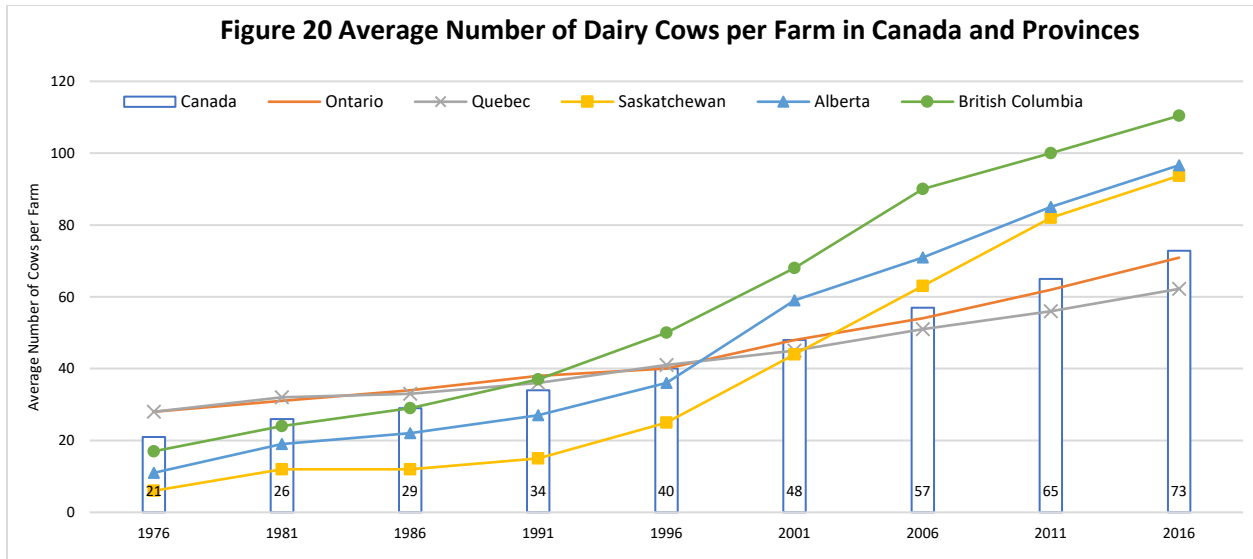
Source: Statistics Canada *CANSIM Tables 004-0003 and 004-0213*

3.4. Average Farm Size by Livestock Sector

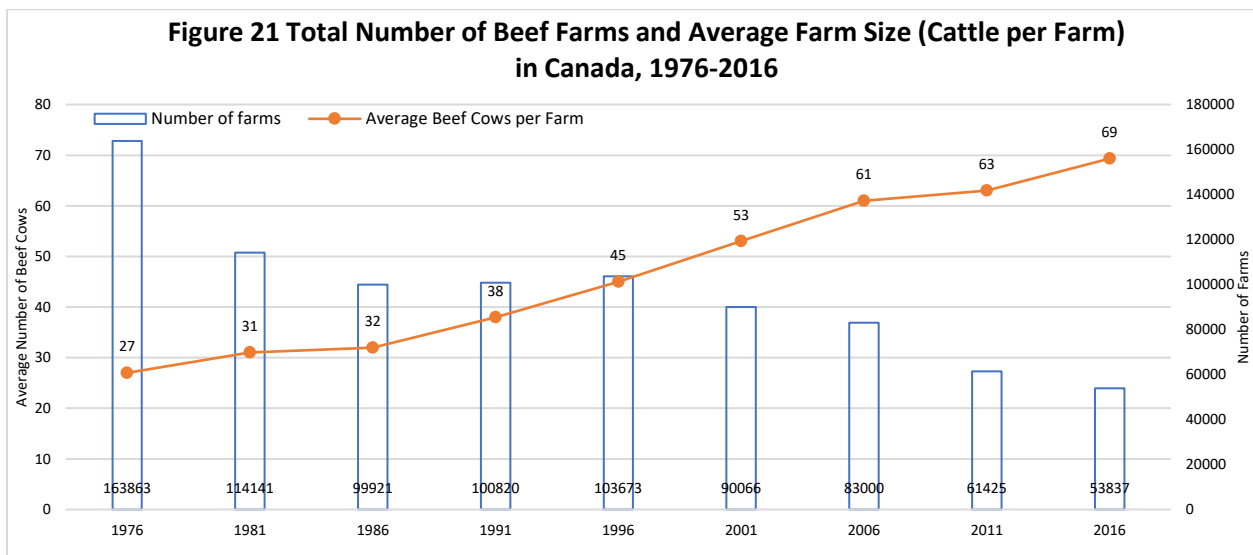


Source: Statistics Canada *CANSIM Tables 004-0004 and 004-0221*.

As discussed earlier, the number of dairy farms in Canada has declined at a rate similar to that witnessed in the red meat sector. The number of farms with dairy cows in the country fell 87% from nearly 100,000 in 1976 to 12,895 in 2016. Given the relatively constant production over the last forty years, the average herd size has increased approximately 2.5 times from 21 cows in 1976 to 73 cows in 2016 (Figure 19). Average dairy farm size has increased most significantly in the western provinces (Figure 20). British Columbia has the largest average herd size at 110 cows per farm, followed by Alberta (97 cows per farm), and then Saskatchewan (94 cows per farm). Herd size is smaller in the eastern provinces; average dairy farm size in Ontario is 71 cows and Quebec has the smallest dairy farms on average at 62 cows per farm (Figure 20).



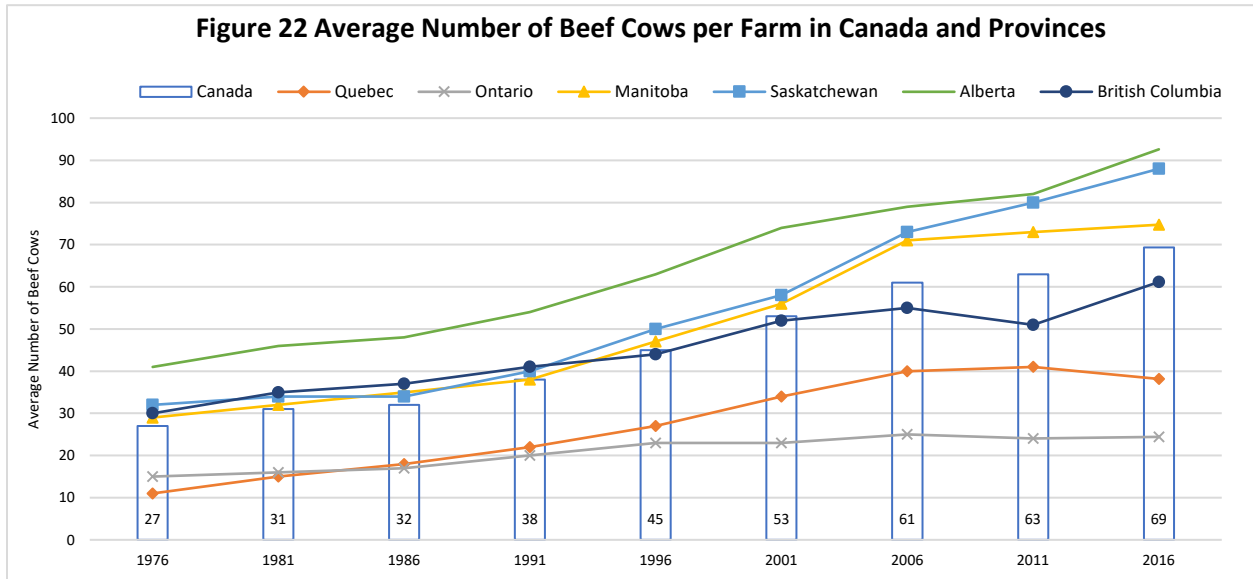
Source: Statistics Canada *CANSIM Tables 004-0004 and 004-0221*.



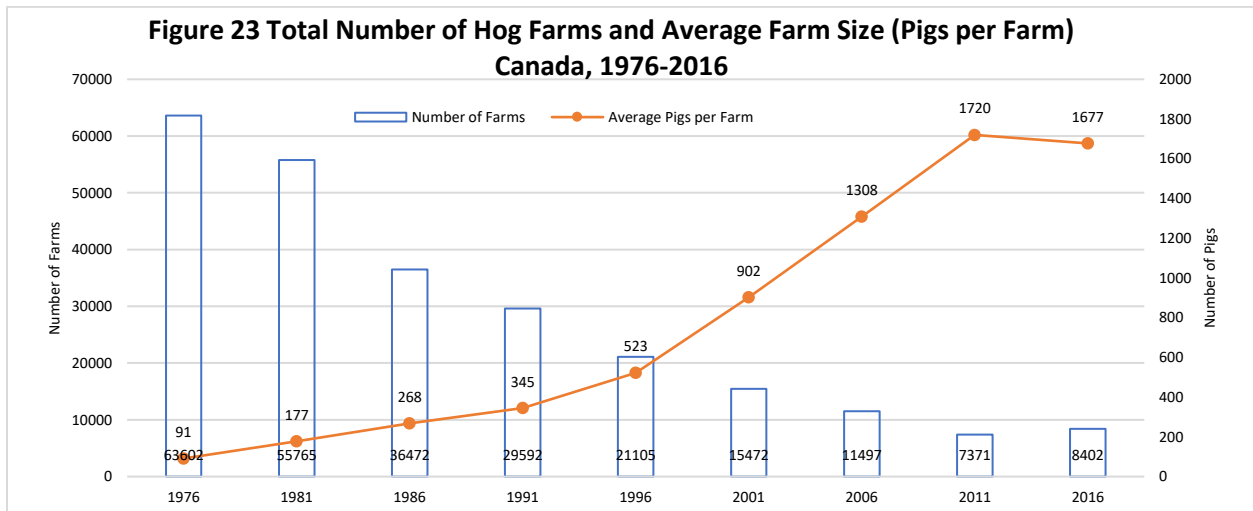
Source: Statistics Canada *CANSIM Tables 004-0004 and 004-0221*.

The number of beef farms has fallen from its peak (160,000 farms) in 1976 to just more than 50,000 farms in 2016 (Figure 21). Meanwhile, the national average number of beef cows per farm has risen dramatically from 27 cows in 1976 to 69 cows in 2016 (Figure 21). As with dairy, the largest beef farms are in the Prairie provinces; Alberta has 93 beef cows per farm, Saskatchewan has 88 beef cows per farm, and

Manitoba has 75 beef cows per farm (Figure 22). Average beef farm size has increased slightly in Ontario but remains the smallest in the country at 24 cows per farm.



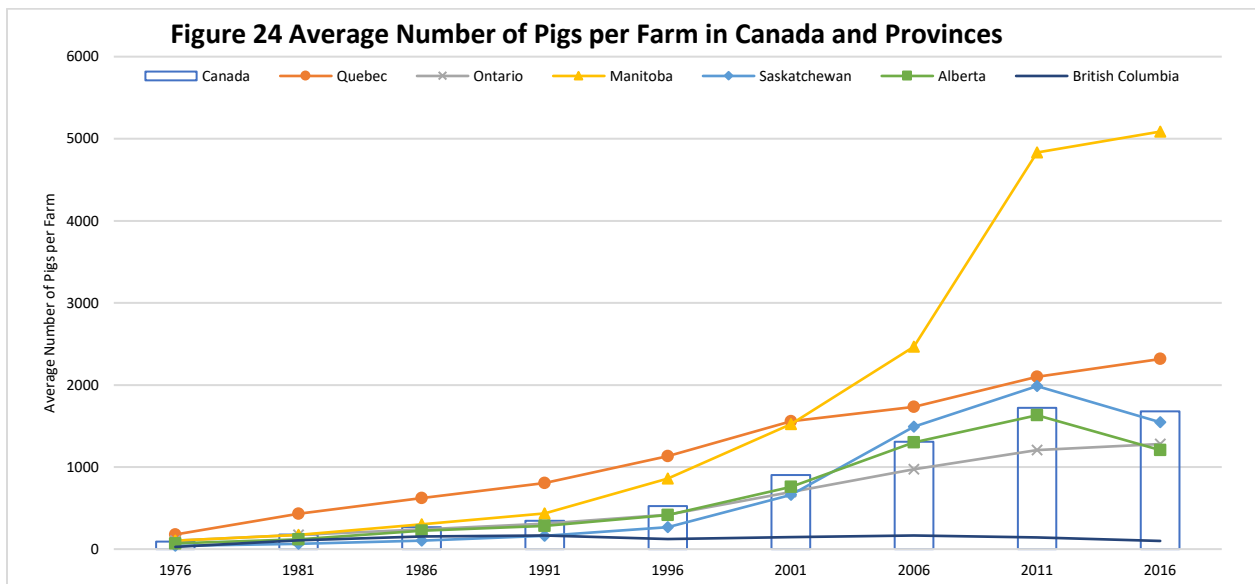
Source: Statistics Canada *CANSIM Tables 004-0004 and 004-0221*.



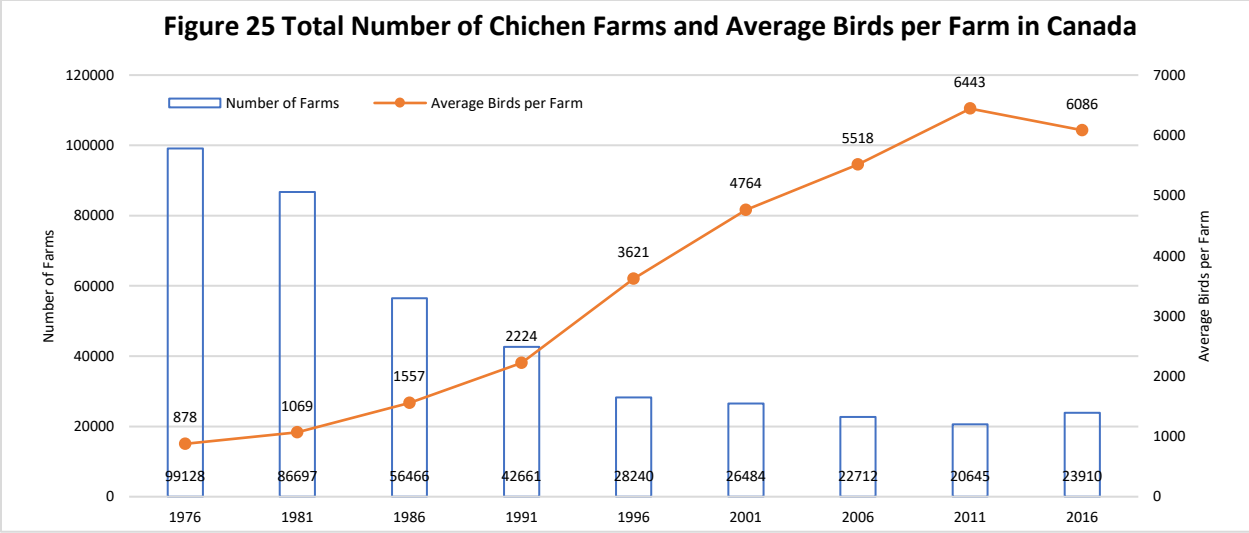
Source: Statistics Canada *CANSIM Table 004-0004 and 004-0223*.

The number of hog farms in Canada has dropped significantly as discussed earlier but so has the inventory of hogs. The number of farms has dropped dramatically from more than 60,000 in 1976 to around 8,000 in 2016, an 87% decrease (Figure 23). However, the average number of pigs per farm has

increased 18 times from 1976 (91 pigs per farm) to 2016 (1,677 pigs per farm) suggesting significant efficiency improvements. Quebec had the largest average sized hog farms in 1976 (178 pigs per farm) in 1976 but Manitoba surpassed Quebec in the 2006 census- average number of pigs per farm in Manitoba in 2006 was 2,468 pigs (Figure 24). The average size of hog farms in Manitoba has doubled in the last decade and was 5,087 pigs in 2016. Quebec has the next largest average hog farm size among provinces but its average of 2,316 pigs is around half of the average farm size of hog farms in Manitoba. Average hog farm size in Saskatchewan (1,548), Ontario (1,280) and Alberta (1,207) are similar but average hog farms size in British Columbia is significantly smaller than any other region at 98 pigs per farm in 2016.

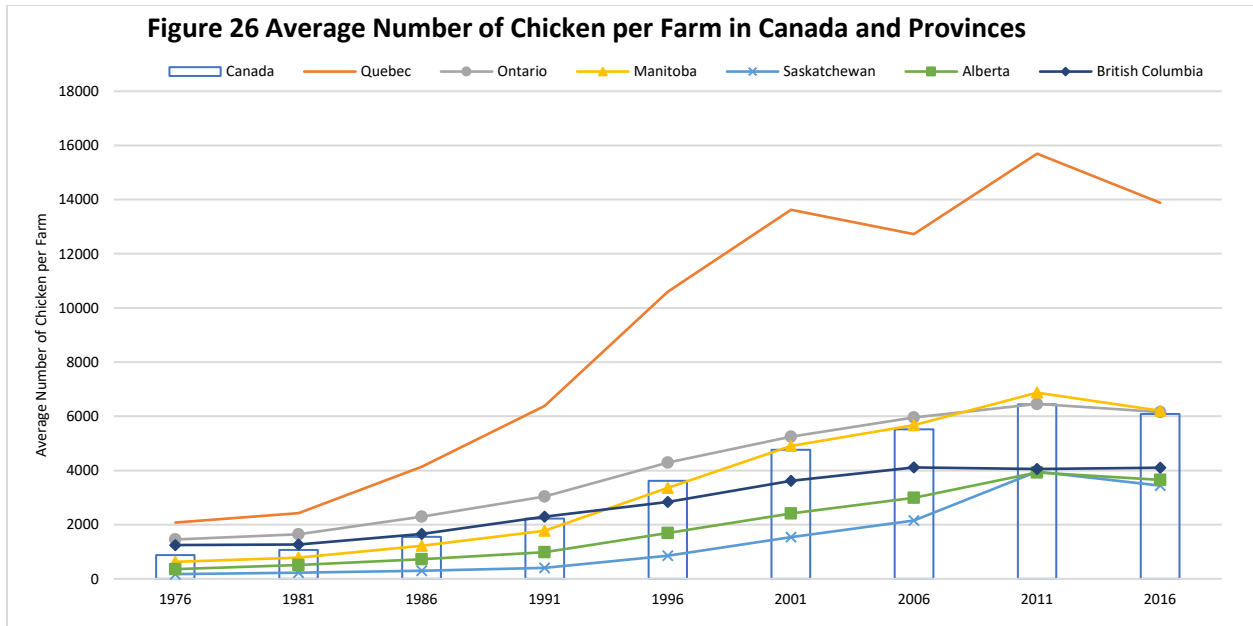


Source: Statistics Canada *CANSIM Tables 004-0004 and 004-0223*.



Source: Statistics Canada *CANSIM Tables 004-0004 and 004-0225*.

Although poultry production is under supply management system in Canada, the poultry sector witnessed a significant reduction in farm numbers between 1976 and 1996 but the number of farms has been relatively constant over the last two decades. However, the number of birds produced has risen significantly resulting in an increase in the average size of poultry farms. Average size of chicken farms peaked in 2011 at 6,443 birds per farm. The largest average sized chicken farms are in Quebec at 13,889 birds per farm and peaked in 2011 at 15,696 birds per farm. Average chicken farm size in Ontario and Manitoba has grown as a similar speed to the national average but has lagged behind the national average in the three western provinces - Saskatchewan, Alberta and British Columbia (Figure 26).



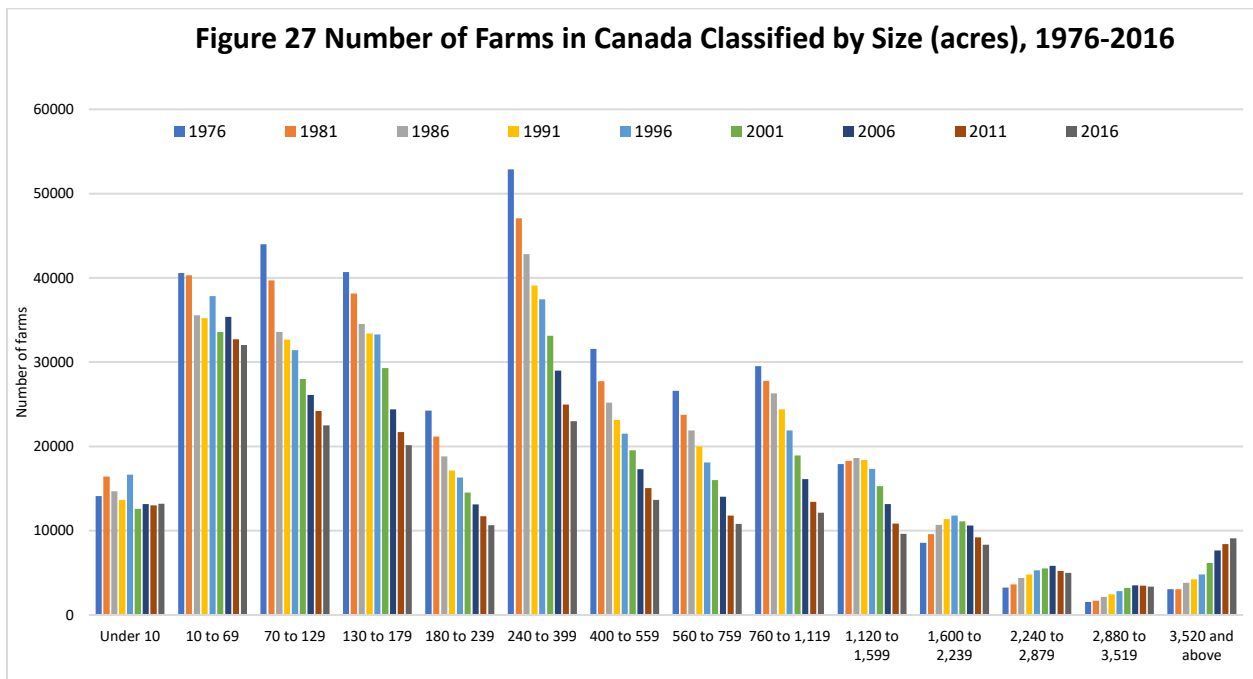
Source: Statistics Canada *CANSIM Tables 004-0004 and 004-0225*.

4. Farm Size Distribution

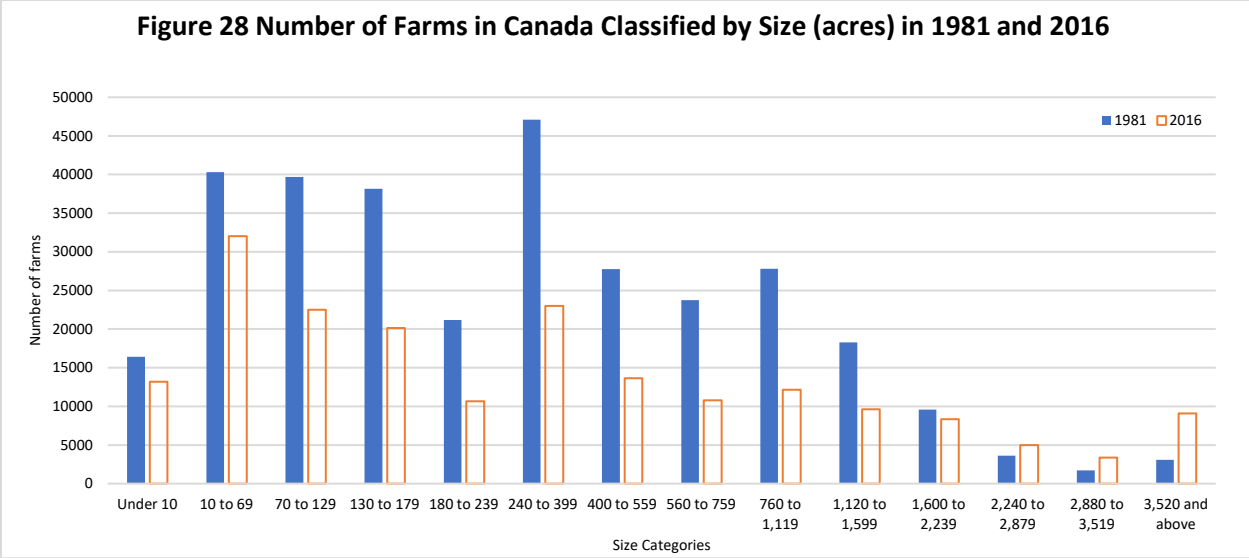
4.1. Farm Size Distribution by Land Area

The increase in average farm size described in the previous section hides the changes that are occurring in the distribution of farm sizes, hiding the heterogeneity referred to at the beginning of the paper. The number of farms in Canada by farm area operated is illustrated in Figure 27. The general trend across census years is a relatively constant number of small farms, a significant decrease in the number of mid-sized farms, and an increase in the number of large operations. The changes are highlighted in Figure 28 for 1981 and 2016. The joint histogram reveals: (1) the drop in overall farm; (2) the increase in the absolute number of large farms; (3) the significant drop in the medium sized farms that were the average in 1981; and (4) the increase in the share (although a decline in the absolute number) of small farms. The histogram has fallen but rather than just shifting outwards in addition to down as might be implied by the decline in farm numbers, the distribution is now scattered across the size categories.

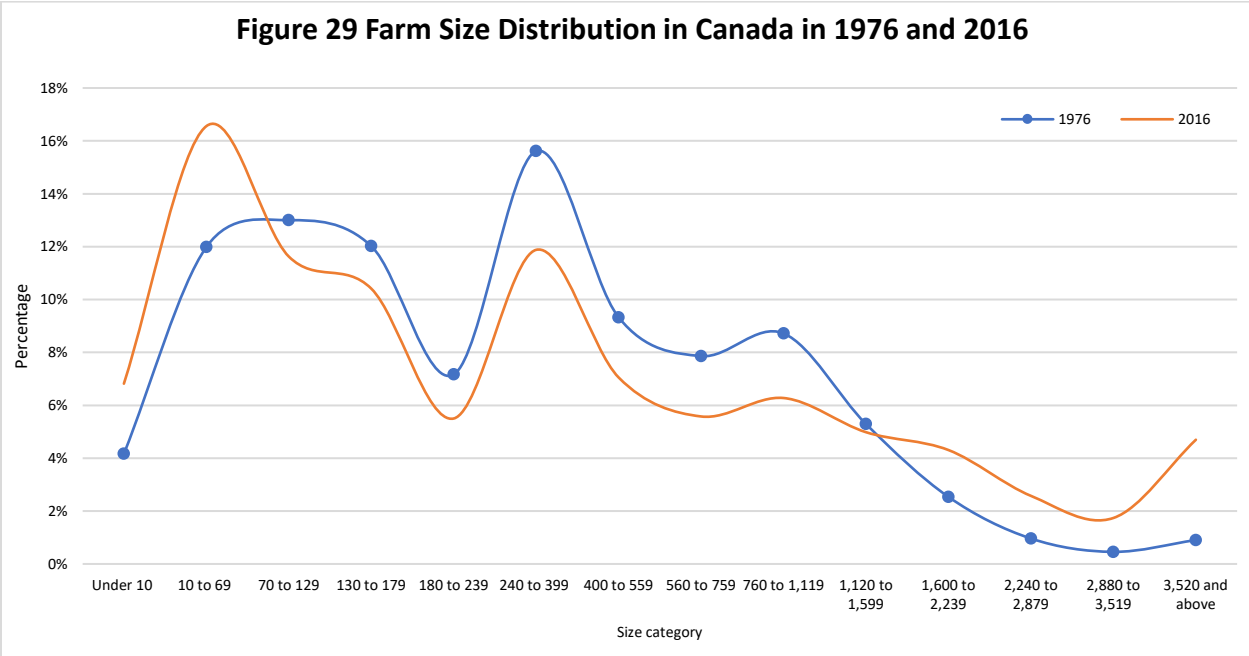
The decrease in farm numbers has not occurred evenly across all farm size categories but instead the decline has largely occurred with the mid-size operations. Rather than being a bell-shaped distribution, a uniform distribution is taking shape with farms spread across the size categories. The decline in the share of farms in the mid-size categories and corresponding increase in the shares of the smallest and largest categories are illustrated in Figure 28. For example, less than 1% of the farms in 1981 operated more than 3,520 acres but the share in 2016 is close to 5% so the share has risen by approximately 4 percentage points. Approximately one-quarter of farms in 2016 were less than 70 acres as compared to around 16% in 1976 and the percentage of farms larger than 1600 acres is now nearly 15% of all operation whereas it was less than 5% in 1976.



Source: Statistics Canada *CANSIM Tables 004-0005 and 004-0201*.



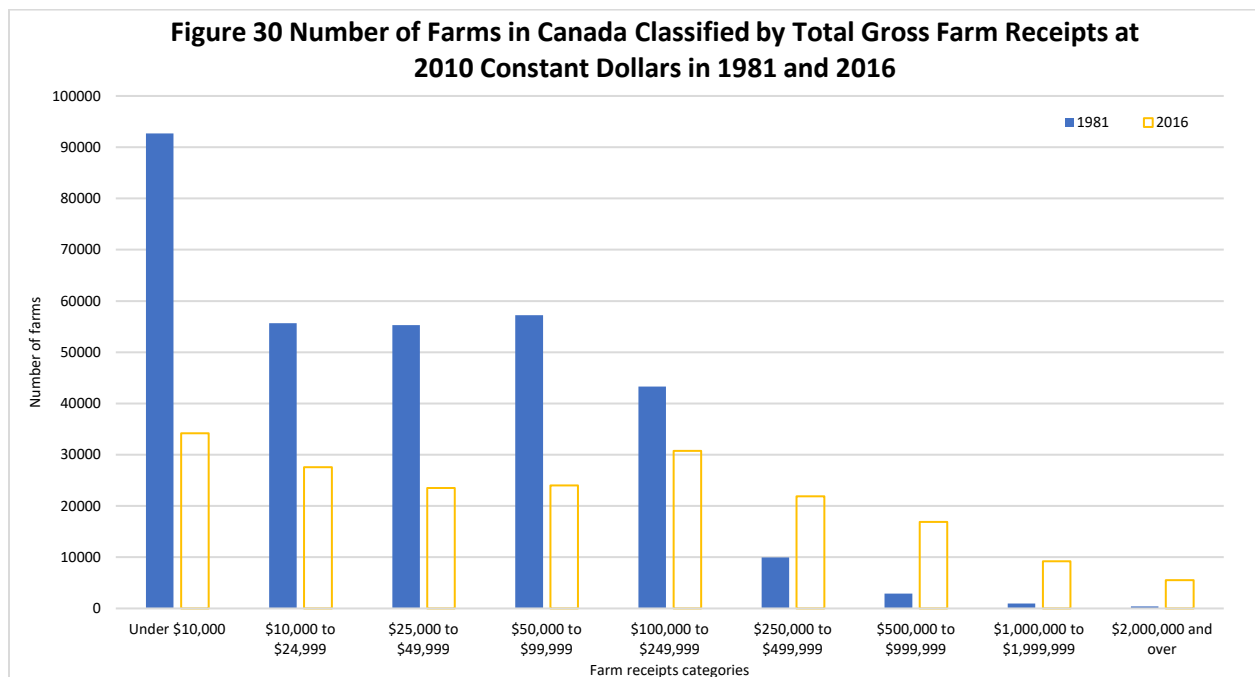
Source: Statistics Canada *CANSIM Tables 004-0005 and Table 004-0201.*



Source: Statistics Canada *CANSIM Tables 004-0005 and 004-0201.*

4.2. Farm Size Distribution by Cash Receipts

The number of farms classified by the total farm receipts is illustrated in Figure 30 for 1981 and 2016. The total number of farms represented by the sum of the histogram bars has fallen as discussed earlier but the number of farms selling more than \$250,000 (in constant 2010 \$'s) has increased significantly. Unlike the number of farms under 10 acres in Figure 28, the number of small farms as measured by sales under \$10,000 dropped by 63% from 92,704 farms in 1981 to 34,156 farms in 2016. The most noticeable trend is the rise in farms selling more than \$500,000; the share has risen from 1.34% in 1981 to 16.36% in 2016 (Figure 30).

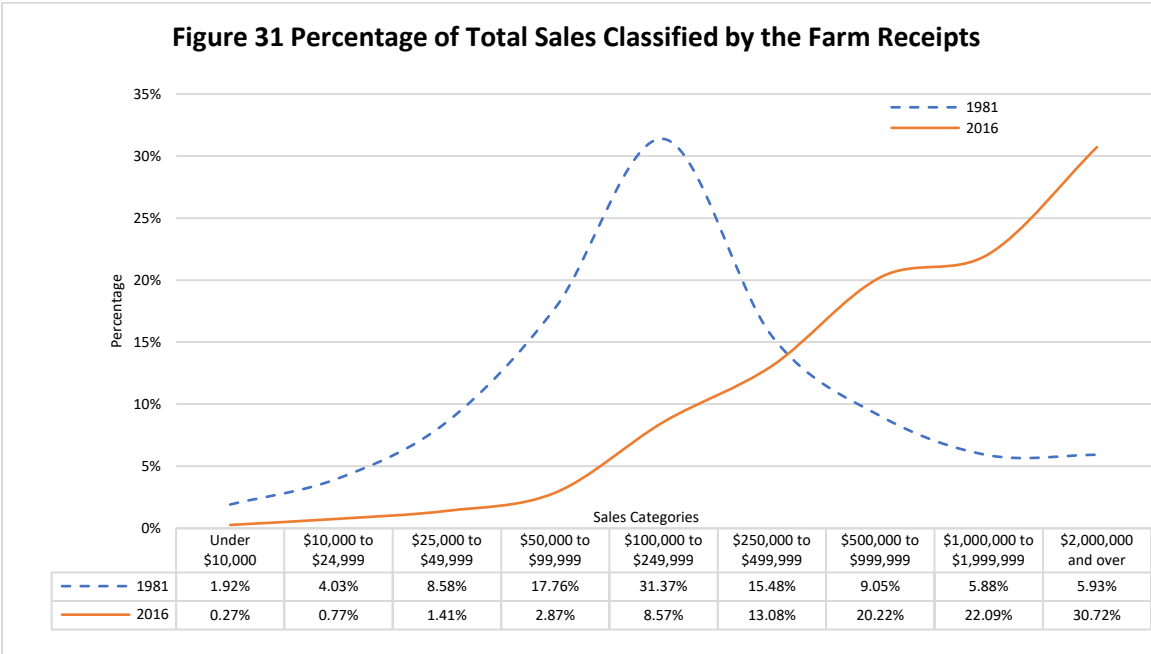


Source: Statistics Canada *CANSIM Table 004-0006 and 004-0233*.

The percentage of total sales due to the various categories of farm size as measured by farm receipts is illustrated in Figure 31. The graph was constructed by assuming the average sales of each category as the estimate of sales for all the farms in the corresponding category except the category of farm receipts above

\$2 million, which was assumed to be \$3.5 million per farm. The average sales were multiplied by the number of farms to get total farm receipts by size category.

The degree of homogeneity in the farm sector a generation ago is highlighted by the normal distribution of farm sales by size category. Approximately one-third of the farms had farm sales between \$100,000 to \$250,000 in 1981 and this fell to 8.5% in 2016 (Figure 31). The graph also highlights the increasing role of the largest farms in overall production, which Sumner (2014) noted is also evident for the United States. In 1981, 4.5% of the farms had sales above \$250,000 and this generated 36% of total farm sales. In 2016, farms with receipts above \$250,000 generate 86% of total farm sales.



Source: Statistics Canada *CANSIM Tables 004-0006 and 004-0233*.

5. Summary

The structure of Canadian agriculture sector has changed significantly. There are fewer farms and farmers but the average farm size for those remaining has increased. The extent of the change varies by region and commodity. For example, average farm size has grown more in Saskatchewan than Ontario and

the rate of growth is higher for hog farms than for other livestock farms. The growth in the average farm size is driven by an increase in the absolute number of large farms but the growing share of small farms tempers the extent of the increase in average farm size. Regardless of sector, the number of mid-sized farms that dominated production a generation ago has declined significantly. The hollowing out of the middle has resulted in a movement away from a bell-shaped distribution for farm size to a more uniform distribution. Those in the largest size categories consequently represent a growing percentage of total farm sales.

In addition to size, which has been the focus of this review, farm structure can also be assessed in terms of by attributes such as specialization, focus, contracts, ownership structure, and markets. These attributes have also changed resulting in a sector with a heterogeneous group of participants. The variation makes it difficult to assess the need for policy action and what should be the focus of any interventions. The growing heterogeneity also suggests that there are different drivers for entry and exit within the sector and that understanding those drivers will help explain the underlying structural changes in agriculture.

References

Goddard, E., Weersink, A., Chen, K., and Turvey, C. G. (1993). "Economics of Structural Change in Agriculture." *Canadian Journal of Agricultural Economics* 41(4), 475-489

Poon, K. and Weersink, A. 2014. "Growing Forward with Agricultural Policy: Strengths and Weaknesses of Canada's Agricultural Data Sets." *Canadian Journal of Agricultural Economics*, 62(2), 191-218.

Statistics Canada. 2011. CANSIM Table 004-0001. Accessed June 8, 2017.

<http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=0040001&pattern=agriculture+census&tabMode=dataTable&srchLan=-1&p1=1&p2=-1>

Statistics Canada. 2011. CANSIM Table 004-0002. Accessed June 9, 2017.

<http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=0040002&pattern=agriculture+census&tabMode=dataTable&srchLan=-1&p1=1&p2=-1h>

Statistics Canada. 2011. CANSIM Table 004-0003. Accessed June 11, 2017.

<http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=0040003&pattern=agriculture+census&tabMode=dataTable&srchLan=-1&p1=1&p2=-1h>

- Statistics Canada. 2011. CANSIM Table 004-0004. Accessed June 11, 2017.
<http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=0040004&pattern=agriculture+census&tabMode=dataTable&srchLan=-1&p1=1&p2=-1h>
- Statistics Canada. 2011. CANSIM Table 004-0005. Accessed June 9, 2017.
<http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=0040005&pattern=agriculture+census&tabMode=dataTable&srchLan=-1&p1=1&p2=-1h>
- Statistics Canada. 2011. CANSIM Table 004-0006. Accessed June 13, 2017.
<http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=0040006&pattern=agriculture+census&tabMode=dataTable&srchLan=-1&p1=1&p2=-1h>
- Statistics Canada. 2011. CANSIM Table 004-0014. Accessed June 18, 2017.
<http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=0040014&tabMode=dataTable&p1=-1&p2=11&srchLan=-1>
- Statistics Canada. 2011. CANSIM Table 004-0017. Accessed June 22, 2017.
<http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=0040017&tabMode=dataTable&p1=-1&p2=11&srchLan=-1>
- Statistics Canada. 2016. CANSIM Table 004-0200. Accessed June 22, 2017.
<http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=0040200&tabMode=dataTable&p1=-1&p2=11&srchLan=-1>
- Statistics Canada. 2016. CANSIM Table 004-0201. Accessed June 9, 2017.
<http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=0040201&pattern=agriculture+census&tabMode=dataTable&srchLan=-1&p1=1&p2=-1htt>
- Statistics Canada. 2016. CANSIM Table 004-0204. Accessed June 9, 2017.
<http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=0040204&pattern=agriculture+census&tabMode=dataTable&srchLan=-1&p1=1&p2=-1htt>
- Statistics Canada. 2016. CANSIM Table 004-0213. Accessed June 26, 2017.
<http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=0040213&pattern=agriculture+census&tabMode=dataTable&srchLan=-1&p1=1&p2=-1>
- Statistics Canada. 2016. CANSIM Table 004-0221. Accessed July 6, 2017.
<http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=0040221&pattern=agriculture+census&tabMode=dataTable&srchLan=-1&p1=1&p2=-1>
- Statistics Canada. 2016. CANSIM Table 004-0223. Accessed July 6, 2017.
<http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=0040223&pattern=agriculture+census&tabMode=dataTable&srchLan=-1&p1=1&p2=-1>
- Statistics Canada. 2016. CANSIM Table 004-0225. Accessed July 6, 2017.

<http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=0040225&pattern=agriculture+census&tabMode=dataTable&srchLan=-1&p1=1&p2=-1>

Statistics Canada. 2016. CANSIM Table 004-0233. Accessed July 10, 2017.

<http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=0040233&pattern=agriculture+census&tabMode=dataTable&srchLan=-1&p1=1&p2=-1>

Statistics Canada. 2016. CANSIM Table 004-0237. Accessed July 10, 2017.

<http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=0040237&pattern=agriculture+census&tabMode=dataTable&srchLan=-1&p1=1&p2=-1>

Statistics Canada. 2016. CANSIM Table 004-0238. Accessed July 13, 2017.

<http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=0040238&pattern=agriculture+census&tabMode=dataTable&srchLan=-1&p1=1&p2=-1>

Statistics Canada. 2016. CANSIM Table 004-0239. Accessed July 13, 2017.

<http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=0040239&pattern=agriculture+census&tabMode=dataTable&srchLan=-1&p1=1&p2=-1>

Statistics Canada. 2017a. Census of Agriculture, Farm Area of Census Farm, Measure.

[ONLINE] Available at:

<http://www23.statcan.gc.ca/imdb/p2SV.pl?Function=assembleDESurv&DECId=374673&RepClass=859&Id=225699&DFId=374656>. [Accessed 11 August 2017].

Statistics Canada. 2017b. Census of Agriculture, Number of Census Farm, Count.

[ONLINE] Available at:

<http://www23.statcan.gc.ca/imdb/p2SV.pl?Function=assembleDESurv&DECId=374660&RepClass=570&Id=225699&DFId=374656>. [Accessed 11 August 2017].

Sumner, D.A. 2014. "American Farms Keep Growing: Size, Productivity, and Policy." *Journal of Economic Perspectives* 28(1): 147-166.

Weersink, A., 2018. The growing heterogeneity in the farm sector and its implications. *Canadian Journal of Agricultural Economics*, 66(1), pp.27-41