GEORGE MORRIS CENTRE

Canadian Farms Becoming Larger with Greater Capital Investment

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1.0 Introduction

Canada's 2011 Census of Agriculture shows a continuation of the long standing trend toward fewer, larger farms operated by older farmers. As will be shown below, this is a long standing trend, sometimes attributed to a lack of profitability in the agricultural sector. However, the period between 2005 and 2010, the last most recent census and the current one, was marked by nearly unrivalled positive economics in the grain and oilseed industry. Yet even in that industry farm numbers are down.

This implies that there are more fundamental forces at work in the sector and that its reality is changing. Trends in the census data are examined in this paper, and are then supplemented by annual data that shed even more light on them. Then we posit suggestions about what is contributing to the trends, as well as some implications for the management of modern farms and for public policy.

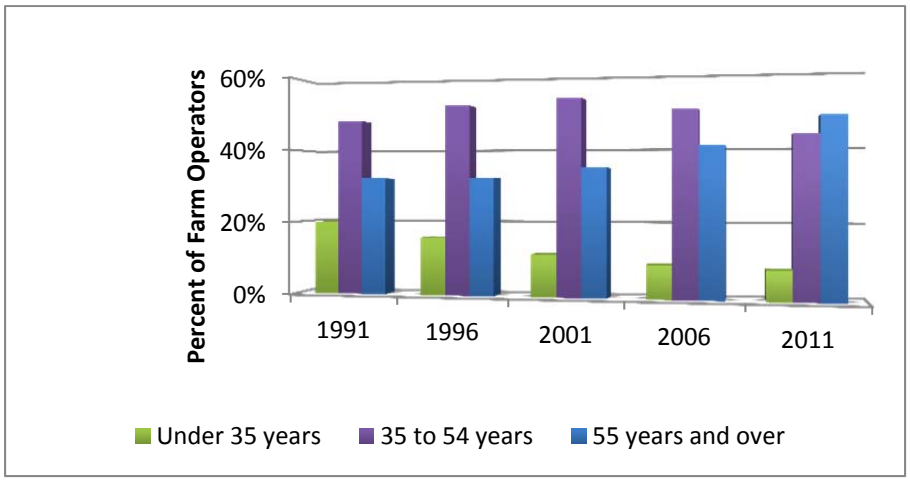
2.0 Census Trends

Agriculture census data reveal that three major trends continued over the past five years.
The first trend is that there are fewer farms. In the 1981 census, there were 318,361 farms. By 1996, the number of farms declined to 276,548. The latest census found that the number was down to 205,730. In thirty years, the number of Canadian farms declined by just over 35%.

Second, farmers are getting older. Figure 1 contains the distribution of farm operators by age cohort in the census years since 1991. Farm operators over 55 grew from about 30% of the population to just under 50%, while those under 30 went from 20% to about five percent.

[1] The authors are indebted to Bob Seguin and Kate Stiefelmeyer for comments on an earlier draft of this paper and to Janalee Sweetland for her work on the data analysis.

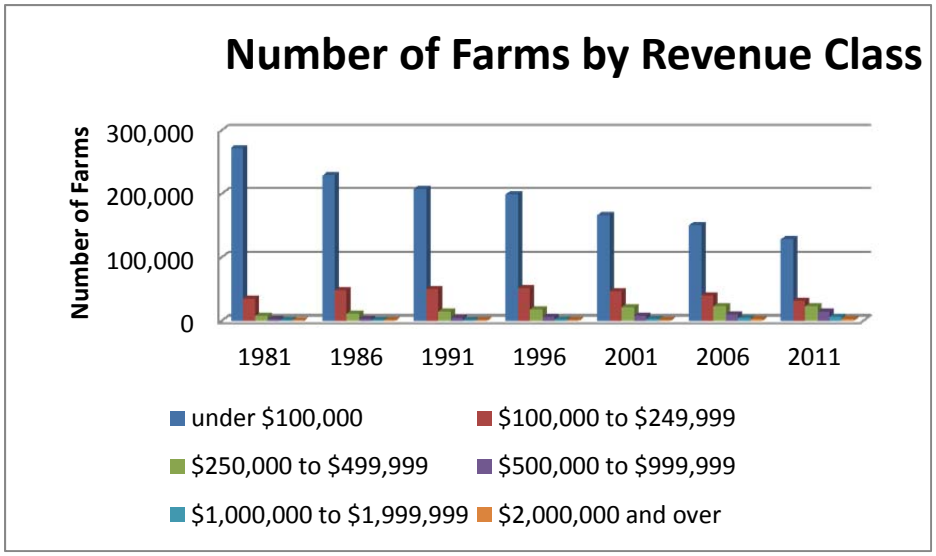
Figure 1. Age Distribution of Canadian Farm Operators, 1991-2011 Census



Source: Statistics Canada, Census of Agriculture 2011; Statistics Canada Publication 95-632-XWE

Third, farms are getting larger. Figure 2 contains the distribution of farms by sales class since 1981. It's easy to see that the number of farms with less $100,000 in annual sales has declined steadily. After that the performance differs. Those with sales between $100,000 and $250,000 rose until 1996 and then began to fall. Farms with sales between $250,000 and $500,000 rose and then leveled off. The final three categories all grew across the time series.

Figure 2. Distribution of Canadian Farms by Sales Class, 1981-2011 Census



Source: Statistics Canada, Census of Agriculture; Statistics Canada Catalogue 95-632-XWE

3.0 Focus on the Structural Change

Part of the "migration" of farms among sales classes is merely a function of prices. A relatively modest 250 sow farrow to finish hog operation would have sales of less than $500,000 if hog prices are $75/ckg, more than $500,000 if prices are $100/ckg, and more than a million dollars if prices are $175/ckg.

Similarly, a farm with 500 acres of corn would have sales of less than $250,000 if corn prices are $3.00/bu and more than $500,000 if they are $7.00/bu. In addition, productivity on most farms rises over time as they use improved varieties, improved production systems, improved swine genetics, etc…

Nevertheless, the trend toward larger farms is real. Most of the significant price change occurred since 2005, yet the trends are clear across the entire period of the data.

In addition to the five-yearly census data, Statistics Canada provides annual tax filer data that can be used to more clearly illustrate the changing structure of agriculture. The tax filer data allow analysis to be done to show the significance of farms by sales category in terms of both the number of farms and total sales for all of agriculture.

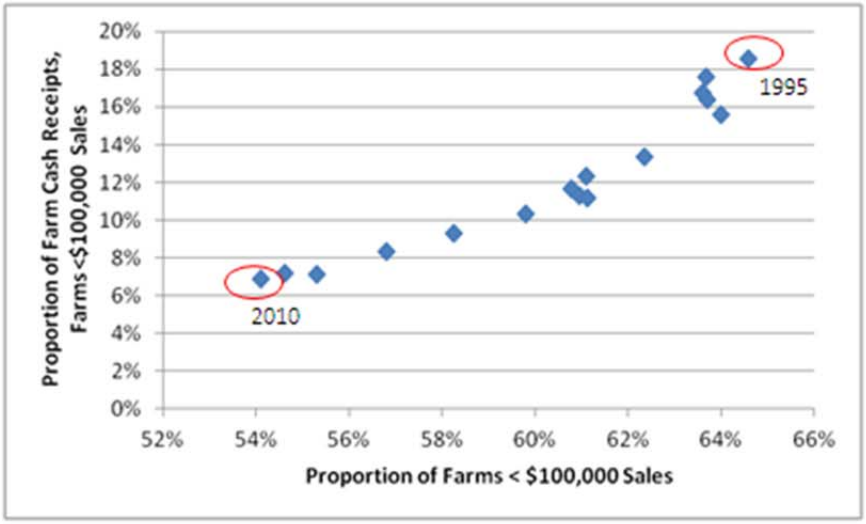
Figure 3 contains the percentages of total farms and gross farm income for farms in the various sales categories from the tax filer data. To assist interpretation of the figures, the first one contains data for farms with less than $100,000 in sales. As can be seen, the data start with 1995 and make a steady pattern "inward" on the graph. This means that farms with annual sales less than $100,000 experienced a decline in both their percentage of total farms and in their share of total farm sales: they went from about 65% of total farms in 1995 to 54% in 2010, and they went from about 18.5% of total farm sales in 1995 to about 7% in 2010.

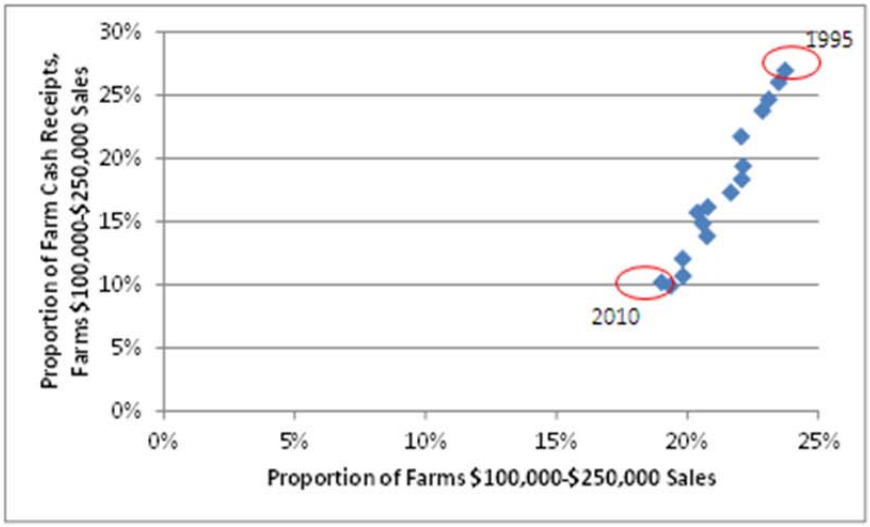
Figure 3 clearly indicates the trend toward larger farms. In addition to the under $100,000 category, farms above there and under $250,000 dropped from just under 25% to under 20% of farms and from 27 to 10% of total sales.

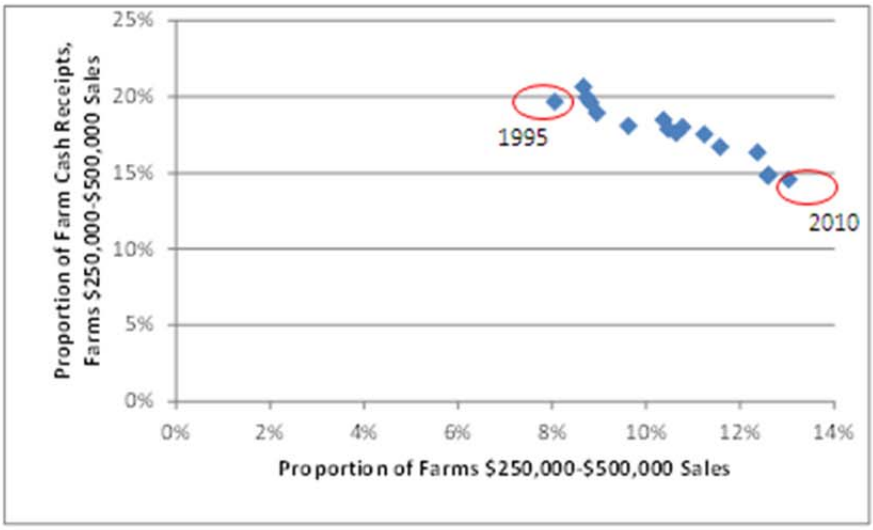
Farms between a quarter and half million dollars in sales actually increased from 8 to 13% of farms, but saw their share of sales drop from 20 to 15%.

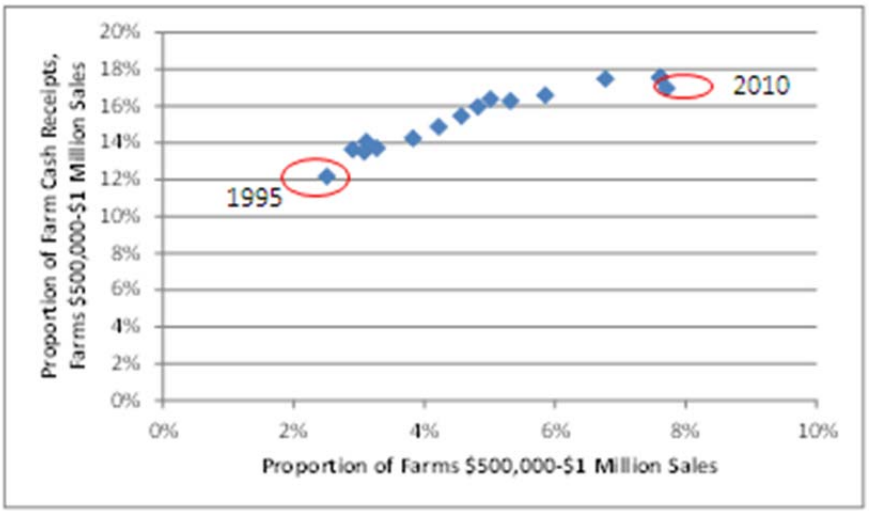
The two largest categories experienced an increase in their share of both the number of farms and of total farm sales. By 2010, farms over a million dollars in sales increased their share of farms from one to 6% and their share of sales from just over 20% to a whopping 53%. Adding the largest two categories together – ie $500,000 or more in sales – we see that approximately 15% of the farms are generating almost 70% of the total revenue in agriculture.

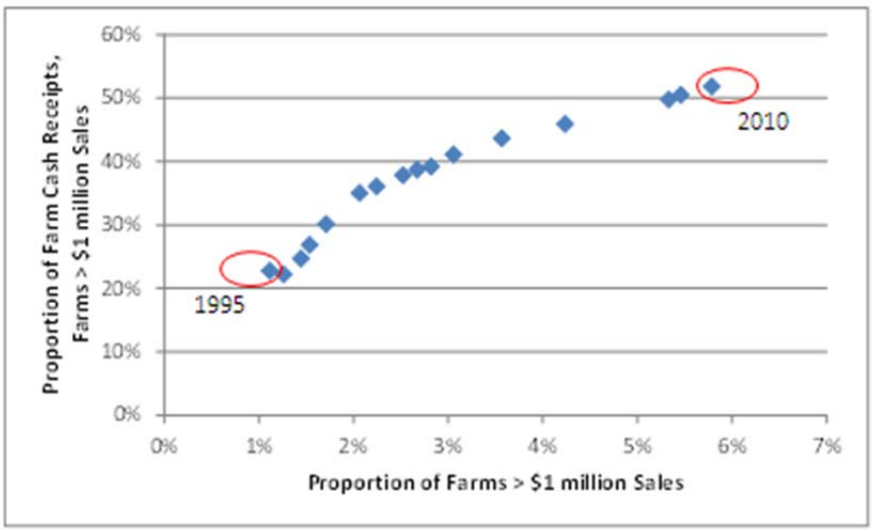
Figure 3. Distribution of Canadian Farms by Sales Category, 1995-2010











Source: Statistics Canada, Canadian Farm Financial Database Taxation Data Program

4.0 Perspective and Reasons for the Change in Structure

So far in this paper, Canadian Census and tax filer data have been used to show that Canadian farms are becoming fewer, becoming substantially larger in terms of sales, and farmers are getting older. In this section perspective is provided about the numbers and a number of reasons are posited about the factors contributing to the trends.

4.1 Perspective

There is a rather romantic concept about "family" farms that may cause some to lament the trends. No one has ever been able to define what a family farm is, beyond that it's the amount of farm that can be run by a family. Since technology continuously changes the amount that can be produced by a single person, since the definition of "family" is fuzzy at best, and different types of farming have different requirements, that doesn't leave much to go on. Just think of a single dimension among all those variables: compare a family with two children under five years of age to one with five children ranging

from 15 to 30 years of age. Can they both handle the same amount of work? As children mature, where is the line drawn for being part of the "family"? Are the children's children part of the "family"? If not, why not?

A second aspect of perspective is what's required to reach $1 million in sales? Is that really a large operation?

- At current prices a farrow to finish hog operation with 300 sows would generate over $1 million in sales. Most new barns today are built for 1200 or more sows.
- At current prices, about 620 steers would generate $1million. New feedlots seldom have less than 5,000 head capacity.
- At current prices, around 140 dairy cows would result in over $1 million in sales. New barns in Canada today are usually built for 250 cows or more.
- At current prices about 225 acres of processing tomatoes .

The point is that farms with $1 million in sales are not huge corporate entities. The vast majority of Canadian farms in all sales categories are owned and managed by families, including in some cases, more than one generation.

Another way to gain perspective on these numbers is to start with the knowledge that they represent *gross* income – this is revenue before paying expenses. It would appear that the average operating earnings for Canadian farms – i.e. earnings after direct costs such as seed, feed, fertilizer, animal and crop protection, and hired labour - is about 22%. This means that after paying direct production costs, Canadian farmers have $.22 left of each dollar of sales. Farmers can then use this $.22 to pay taxes, interest on borrowed money, replace depreciated equipment and to pay themselves for the investment of their capital. (Like everything else in agriculture, averages have limited value because of the variation around the average; for example, we have seen operations in our CTEAM program[2] with ratios of operating earnings to sales upward of 50%).

The contextual element here is that farms in the smaller sales categories generally cannot be full-time farmers: 22% of $50,000, for example, is $11,000. Once the interest, taxes, etc… are paid, there's not much left to live on.

Farms in the under $100,000 category are almost all families with other sources of income: the farm is a start-up, it's being wound down in retirement, it's being used to take advantage of favourable tax treatment by rural residents, or it's a limited resource operation.

Even at $200,000 in sales, this would leave only $44,000 in operating earnings. Remembering again that interest, taxes and some amount of investment must come out of operating earnings, this isn't much. For all intents and purposes, commercial farms, i.e. those with enough sales to generate an independent

[2] GMC Management Program for Farmers:
http://www.georgemorris.org/aspx/Public/Utils/DbFileViewerPopup.aspx?FileID=3

living income, have sales greater than $250,000. Hence the vast majority of "census farms" are not commercial operations.

A final aspect of perspective on the trends relates to the issue of farmers aging. There are several responses to this:

- All Canadians are getting older. As the baby boomers go through the system, they dominate the population and the average is increasing. Agriculture is not different.
- Life expectancy is rising. We often hear that 70 is the new 60, etc… So, people can work longer
- In agriculture, the previous point is made stronger by the fact that today's farming equipment automates a considerable amount of what was once heavy work and allows more work to be done more easily, thereby increasing the potential for a person to operate a larger farm longer.
- With farm size growing and with land, quota, machinery and equipment all rising in price, the cost of entry into commercial agriculture as the sole or leading manager is extremely difficult for many young people to do. For many farm families, the older generation has and can source capital and has experience. Their daughters and sons have energy and ideas. The generations work together to leverage each other's strengths. This means there are actually many young people in agriculture, many of whom have major management roles, but from a census perspective, the older generation is regarded as the operator.

This latter factor is apparent in the George Morris Centre's CTEAM program which has a number of extremely competent young people ranging in age from the early 20's to late 30's. They all have major responsibility in their family farming operations. But their fathers or mothers are listed as the operator. Very few work as employees in a traditional corporate structure, with non-involved shareholders providing the capital. Many are incorporated family operations because laws governing corporations make that structure advantageous from a tax and succession perspective. But they are part of a family operation.

With the changes in farm size and structure that are occurring in agriculture, the Census definition of farm operator is likely becoming quite meaningless.

4.2 Reasons for the Trends

There are several factors that are pushing farms toward larger sizes. Some were alluded to in the previous discussion. In this section we bring those points together.

- Farms are getting larger because technology continuously changes to allow individuals to do more and to handle larger amounts of product. Larger equipment, auto-steer technology, GPS/GIS, mechanical harvesters, robotic equipment, low-till or no-till cropping systems, etc… all mean that more can be accomplished by a single person.
- As the tools improve, work is less mundane. This attracts people who see farming as attractive work and as a business. They bring better skills and are able to manage at a higher level
- The corollary of the previous point is that as entrepreneurs are rewarded in agriculture, they want to grow. Our experience is that entrepreneurs are driven to grow their businesses –

usually, at least in part, because they want to test their own capacity for growth and because they want to leave a legacy for their families.

- Implicit in most of the foregoing is that there are economies of size available, particularly with modern technology, that can only be attained through growth and that help ensure long-term cost competitiveness. There is a necessary drive to make the most complete use possible of the capacity in the equipment on the farm; it is a key to profitability, as well as to servicing debt and generating financial returns against larger, more expensive equipment.
- Many farms, like all successful businesses, find that some of their success comes from responding to customer needs. Success in this area can create pressures to grow. People with a unique product may find an expanding market that will drive them to grow. There are other factors in the modern agricultural marketplace that provide incentives to grow as well:
    - Larger buyers want larger lots. Accessing those buyers can only be done by offering larger lots.
    - Similarly, many end-users find it costly to source different products from different suppliers and prefer working with those who have enough size and scope to offer a variety of products.
    - Some producers find a niche market for products with specific attributes. But most agricultural products have biological variation. So, those units that do not have the specific attributes need alternative markets. Successfully finding markets for both types of products often leads to growth opportunities.
    - Many regulations imposed on the agricultural community encourage growth. We hear and see this everywhere. To cite one example, beef producers say that environmental regulations in some provinces require such capital investment in underground manure storage that a minimum 16,000 head feed lot is required to justify it. For many producers, the ever expanding river of paper work required to ensure that their farms meet regulatory requirements, require additional costs that can only be paid for by larger output.

5.0 Summary and Implications

Canada's 2011 Census of Agriculture shows a continuation of the long standing trend toward fewer, larger farms and older farmers. In fact, by also examining farm operating revenue, it is clear that farms with sales greater than $250,000 are growing, and that those with sales over $500,000 are gaining share of total sales. What is most remarkable is the rate of growth in the number and especially the significance in terms of share of output due to farms in excess of $1 million in sales.
Categories with lower sales are declining in numbers, as well as share of total sales. This corresponds with the authors' definition of "commercial" farms – those that have a chance of providing a reasonable family income from farming operations.

The major reasons for these trends result from the market forces in which agriculture exists. Prices are trending upward, thereby "graduating" some farms from lower to higher sales classes. Technology

development allows people to farm more and longer. Farmers, like all Canadians are living longer with retained ability to function at a high level at more advanced ages. The possibility of greater prosperity in agriculture resulting from higher prices (but with much higher risk) is incenting entrepreneurs who want to grow. Most are growing inside family structures with older family members defined as the operator, but with younger members playing significant roles. Hence the apparent growing average age of farmers is a rather uninformative statistic.

Within this structural change are several implications:

- We are not seeing the demise of the "family" farm or the rise of "corporate" or "factory" farms. Rather, today's farming technology allows for larger operations, many of which are structured as corporations for tax and succession reasons. They are not homogeneous low-cost producers of raw commodities. In the evolving structure are a plethora of types of operation ranging from the large acreage low-cost strategy to organic, locally-oriented operations. This is merely a reflection of the size and geography of the country and the range of customers for whom Canadian farmers produce. When they are successful at any strategy they pursue, it is not difficult to get to greater than $250,000 in annual sales revenue very quickly.
- At the same time, as sales rise, so do investment and risk. For example, in the current Census, farms with more than $500,000 in sales averaged $5.2 million in assets and $1.3 million in debt. Those with $50,000 - $100,000 in sales had $.9 million in assets and less than $100,000 in debt. Clearly commercial farmers require ever improving management skills in order to be and remain successful with this much financial responsibility and the exploding risk that accompanies it. Whatever their business strategy, farmers find it necessary to see their operations as businesses, as well as life style choices. This means dealing with all the complexities (often more) that other small businesses also need to manage. What we see in today's agriculture is that the vast majority of its economic activity is generated by the vast minority of its participants. The reality is that the supply of farm products that feeds the Canadian food system is in relatively few hands. As we see above, over 50% of farm cash receipts were accounted for by only about 6% of farms. This is no anomaly due to high grain prices or some other short term phenomena. There is nothing in the trends or on the horizon that would suggest that this characteristic is going to change.
- To date, much of Canadian government policy has been designed as one size fits all. The mismatch that this contains with the farm sector it serves as clients is striking:
    - Business risk management programming is a complex mix of insurance-type programs, risk-sharing programs, and entitlement programs, with and without program payment caps. The specific programming objectives and measurable results achieved from this suite of programs have been opaque. These problems are magnified in attempting to serve the disparity of interests represented in the farm sector in one size fits all program designs.
    - Part of the rationale for farm product marketing regulations assumes that concentrated processing and handling segments will exert market power over a mass of small farm units lacking bargaining power. Without questioning whether incentives for such

behaviour on behalf of farmers' customers remain in place today (absent market regulations), surely the growing concentration of farms at least suggests that farmers would not be the victims of market power as might once have been the case, especially as borders become more open and communication becomes easier. Canadian farmers can more easily bargain with Canadian customers by having the alternative to sell elsewhere.

- Significant failures on behalf of the small number of farms that account for a large proportion of farm output could be quite detrimental to the sector and particularly to the commodity subsectors within which they operate. This suggests that these farms should be monitored and prioritized at least as benefactors of the management training required to manage greater complexity and greater risk.

Thus, it is appropriate that government policy needs to be re-examined to segment it in ways that are consistent with the structure of the Canadian agri-food sector.

References

Statistics Canada Census of Agriculture, 2011.

Statistics Canada (2007). Selected Historical Data from the Census of Agriculture. Catalogue No.95-632-XWE. http://www5.statcan.gc.ca/bsolc/olc-cel/olc-cel?catno=95-632-X&lang=eng

Statistics Canada (2011). Canadian Farm Financial Database. Catalogue No. 21F0001XBB. http://www5.statcan.gc.ca/bsolc/olc-cel/olc-cel?lang=eng&catno=21F0001X