

Concentration Matters

Farmland Inequality on the Prairies

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and Mengistu Wendimu



ISBN 978-1-77125-518-9

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ACKNOWLEDGMENTS

Our research on land concentration was made possible with funding from an Insight Grant funded by the Social Sciences and Humanities Council of Canada.

Introduction

CONCENTRATION OF OWNERSHIP matters — a lot. This report looks at the changing structure of Prairie farmland ownership and control, and the adverse effects of increasing inequality and concentration.

Before we turn to farmland ownership, let us look briefly at an extreme example of concentration of ownership: Canada’s food processing sector. By looking at concentration in that sector we can see how ownership and structure affect performance and resilience. In April 2020, the fragility of Canada’s highly concentrated beef-packing sector made headline news as Cargill’s High River plant was shut down and production at JBS’s plant in Brooks slowed as a result of COVID-19 outbreaks. Since these two Alberta-based facilities provide 80% of the country’s beef slaughtering capacity, they have become the critical link in the beef supply chain.¹ As a National Farmers Union media release stated:

While this choke point gives US-based Cargill and Brazilian JBS tremendous power over both cattle prices paid to farmers and the grocery store beef prices paid by consumers, the pandemic outbreaks show it is one of the weakest links in Canada’s food system. . . Excessive concentration of ownership and centralization of beef processing, supported and encouraged by our federal and provincial governments, has now put the health of workers, the beef supply and the livelihoods of thousands of farmers in jeopardy.

Other examples of chokepoints and vulnerabilities in our food system include COVID-related travel restrictions leading to labour shortages for produce

growers, outbreaks among migrant farmworkers, trade restrictions, and closed borders. Indeed, COVID-19 is forcing us to rethink the Canadian food system — often promoted as a global agriculture powerhouse. COVID-19 is giving us the opportunity to, once and for all, move away from a bigger is better, production-maximizing, export-oriented, input-overdependent and climate-change-generating agriculture. Instead, now is the time to get on with the important task of building food sovereignty by creating more diversified, resilient, people-centered food systems that foster local/regional supply chains, close ties between farmers and eaters, more equitable distribution of food producing resources, and ecological sustainability. We are at a turning point — let's get it right this time and engage in food system transformation that fosters equity, helps cool the planet, and better protects us in times of epidemic or pandemic emergencies.

One of the first steps to getting it right is a more equitable distribution of food-producing resources — land being one of the most important. This report looks at the changing structure of Prairie farmland ownership and control, and the adverse effects of increasing inequality and concentration.

The distribution of control over productive assets affects the structure of a society, its patterns of employment, income and wealth inequality, and the health of its democracy. Over the past 50 years, there has been a shift in the ownership of Canadian businesses and productive assets. Where once much larger parts of the economy were owned by local citizens and families, now an increasing portion is owned or controlled by transnational corporations, chain stores, and franchisers. Rather than locally-owned stores on thriving main streets, we have corporate big-box superstores. Largely gone or sidelined are the locally-owned shoe stores, grocery stores, meat markets, hardware stores, and other businesses. When looking back over several decades, a significant change is clearly visible: ownership and control of the Canadian economy has shifted from numerous local people to a few distant corporations.

There is an important exception to this trend: farming. While local families may no longer own the grocery or hardware stores, they do still own and operate our farms. But, increasingly, appearances are deceiving. The era of broadly distributed land ownership, of food production by small and medium-sized family farms, is fading. While it remains the case that local families (rather than national or transnational corporations) do operate the vast majority of our farms, *there are fewer and fewer of those families every year*. Broad and relatively equitable landholding is being replaced by concentrated control of farmland. Gaining access to farmland is increasingly

difficult, thus effectively stifling the possibility of farming as a career choice for young Canadians (Qualman, Akram-Lodhi, Desmarais, and Srinivasan, 2018). This matters to all of us because, historically, changes in farmland access, ownership and control affect the structure of our society, culture, our patterns of employment, surrounding economies, and the democratic control of our food systems.

This report analyses the extent of farmland concentration in Canada's three Prairie provinces (Alberta, Saskatchewan, and Manitoba), where over 70 percent of the country's agricultural land is situated. We detail the rate at which concentration is proceeding and highlight the problems and costs associated with farmland concentration. In doing so, we also examine the idea that larger farms offer benefits such as economies of scale or other efficiencies.² Overall, this report finds that increasing concentration is not in farmers' interests nor the broader public interest. There is a clear need for public-policy measures (regulations, tax incentives, reshaping of farm-support programs, limits on ownership, land-access programs, etc.) to counter farmland consolidation and create more equitable and broad-based holding of food-production assets. And though this report does not detail such measures, it does provide the analysis and data to support those policymaking efforts.

The Unfolding Situation

OPERATION, CONTROL, AND ownership of farmland is becoming increasingly concentrated in fewer hands; there are fewer farms and farmers. While this report focuses on the three western Canadian Prairie provinces, some national context is helpful. *Table 1* shows the number of farms in each province in selected Census of Agriculture years. With the exception of British Columbia, a rapid decline in the number of farms is evident in all provinces.³

TABLE 1 Number of Farms in Canada and Provinces, Selected Census Years

	1966	1976	1986	1996	2006	2016	Percentage of Farmers Lost: 1976 to 2016
Canada	430,503	338,552	293,089	276,548	229,373	193,492	43%
Newfoundland & Labrador	1,709	878	651	742	558	407	54%
Prince Edward Island	6,357	3,677	2,833	2,217	1,700	1,353	63%
Nova Scotia	9,621	5,434	4,283	4,453	3,795	3,478	36%
New Brunswick	8,706	4,551	3,554	3,405	2,776	2,255	50%
Quebec	80,294	51,587	41,448	35,991	30,675	28,919	44%
Ontario	109,887	88,801	72,713	67,520	57,211	49,600	44%
Manitoba	39,747	32,104	27,336	24,383	19,054	14,791	54%
Saskatchewan	85,686	70,958	63,431	56,995	44,329	34,523	51%
Alberta	69,411	61,130	57,777	59,007	49,431	40,638	34%
British Columbia	19,085	19,432	19,063	21,835	19,844	17,528	10%

Source: Statistics Canada Table 32-10-0152-01 (formerly CANSIM Table 004-0001).

A Methodological Note

To explore whether operation and control of farmland is becoming increasingly inequitable and concentrated, the authors worked with Statistics Canada to produce a custom tabulation of Census of Agriculture data for the years 1986, 1996, 2006, and 2016. For each year, Statistics Canada provided data on the area of farms (land owned, rented, or leased) and other variables broken down by 14 farm-size categories: 1 to 99 acres, 100 to 299 acres, 300 to 499 acres . . . 100,000 acres and up (See Appendix A for a complete list of size categories).

The following analysis is built upon that custom data tabulation. As received from Statistics Canada, the data had a small number of gaps — a result of data suppression for confidentiality reasons. Briefly, in farm-size categories where there was only one or two farms, the data was suppressed. This also triggered further suppressions elsewhere in the dataset. Where we could be confident doing so, we estimated the missing data. For details see Appendix A. Readers can be assured that our small number of estimations of missing data in no way affect the analysis below. In virtually every case, the graphs, tables, and analysis included here are unaffected by any assumptions or estimations we have made, i.e., had we made estimations that were different (but still within the range of possibilities) those differences would be all but invisible in these graphs and would not alter our analyses or conclusions.

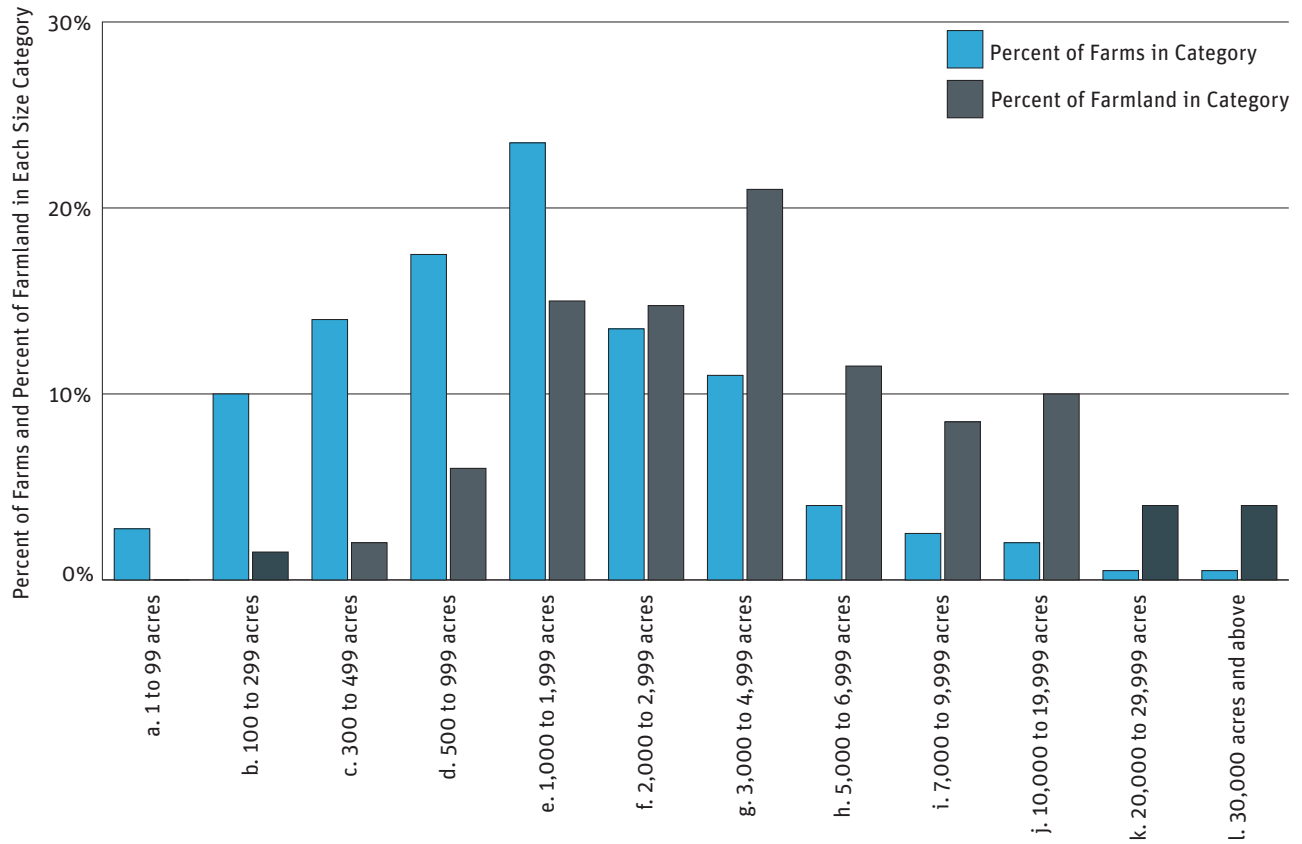
Note also that the data used in this report differs from the Census of Agriculture data in that ours omits farms with revenues below \$20,000 per year. We omitted those operations — 56,371 out of the 193,492 farms Statistics Canada recorded in 2016 — in order to ensure, as much as possible, that our analysis of farms was not affected by data from operations that are very small and probably not capable of supporting (or not intended to support) the people involved. Had we chosen to include these smaller operations, the result would have been to make farmland ownership appear even more concentrated than the figures and tables below indicate.

These farm-loss rates, rapid and concerning as they are, actually *understate* the magnitude of the problem because the rate of farmland *concentration* is running ahead of the rate of farm loss. Since 1966, Canada has lost half of its farms, but the number of farmers who control the vast majority of land is far smaller than the numbers above suggest.

As in many other places, in Alberta, Saskatchewan, and Manitoba, fewer and fewer farms operate and control (through ownership, renting, or leasing) more and more of the farmland. *Figure 1* shows a detailed breakdown for Saskatchewan farms in 2016. The light blue bars show the percentage of farm operations that fall into each farm-size category, and the black bars show the percentage of farmland in each category — land owned, rented, or leased by those farms.

Figure 2 presents the same data as *Figure 1* but combines some of the categories to make the data more legible. Looking at the left-hand side of

FIGURE 1 Saskatchewan, Farmland Distribution Patterns — Percentage of Farms and Farmland Area in Each Farm-size Category, 2016



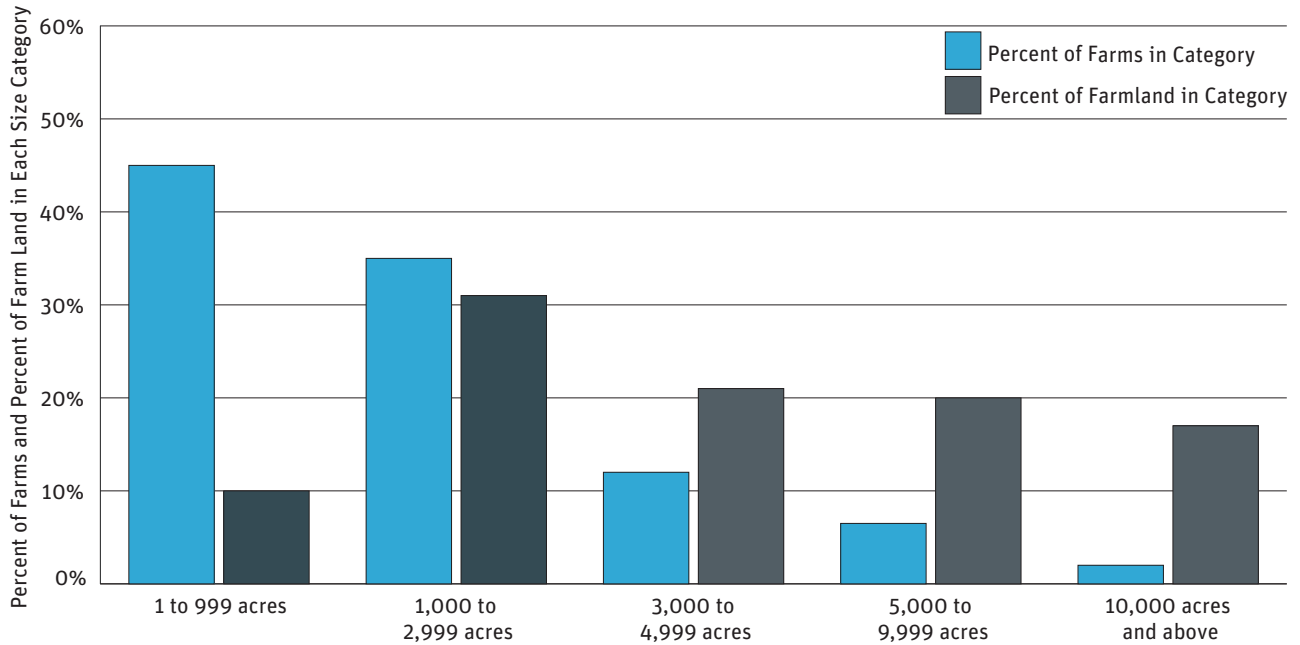
Source: Statistics Canada custom tabulation.

Figure 2, in 2016 in Saskatchewan, the smaller farms that made up about 45 percent of operations (blue bar) shared between them 10 percent of farmland (black bar).

Looking at the right-hand side, at the largest farms, we find that 2 percent of farms farmed 18 percent of the land. If we aggregate the two categories on the right, those that include all farms larger than 5,000 acres, we find that 38 percent of the farmland is operated and controlled by just 8 percent of Saskatchewan farms, just 2,433 operations. These farms average 9,382 acres in size, though many are much larger. (Recall that this data excludes farms with revenues below \$20,000 per year. If that data were included, control of farmland would appear even more concentrated.)

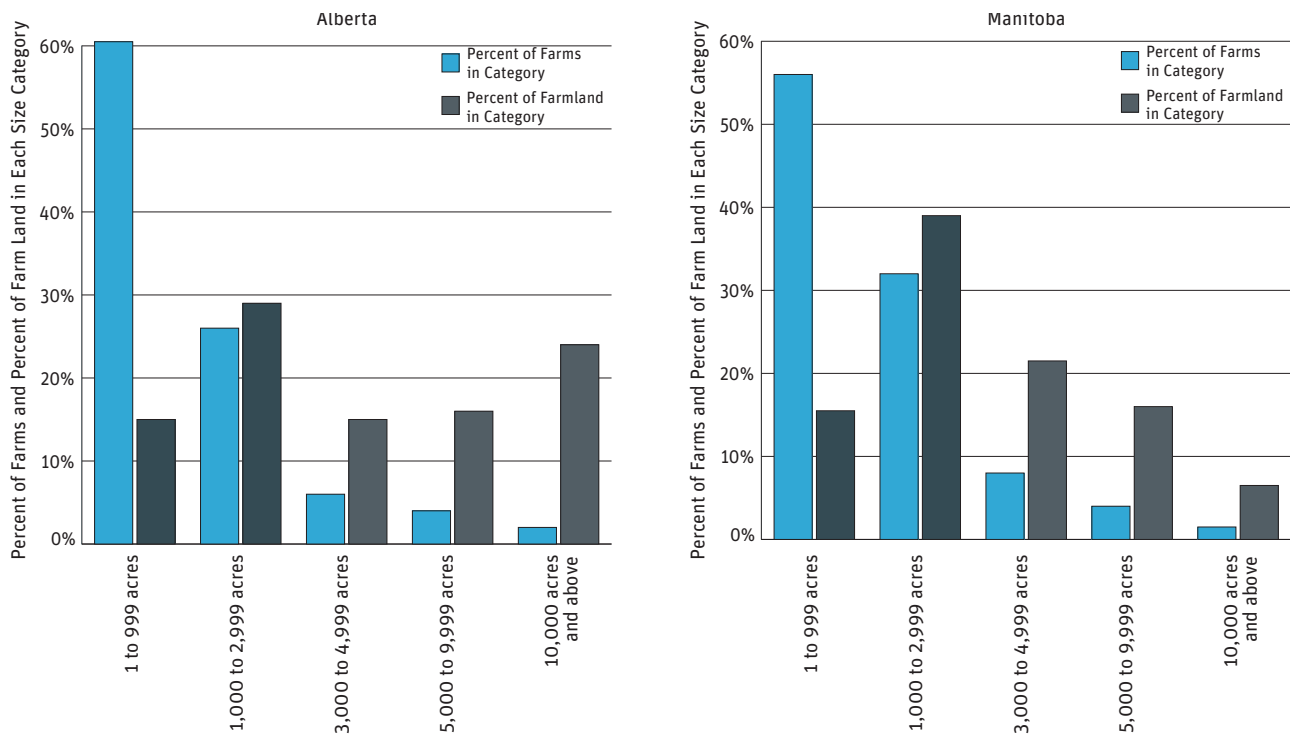
Figure 3 presents data similar to Figure 2, for Alberta and Manitoba. Again, the blue bars show the percent of farms in a given size category, and the black bars show the percentage of land operated by the farms in that category. In

FIGURE 2 Saskatchewan, Farmland Distribution Patterns — Percentage of Farms and Farmland Area in Each Farm-size Category, 2016, Alternative Aggregations



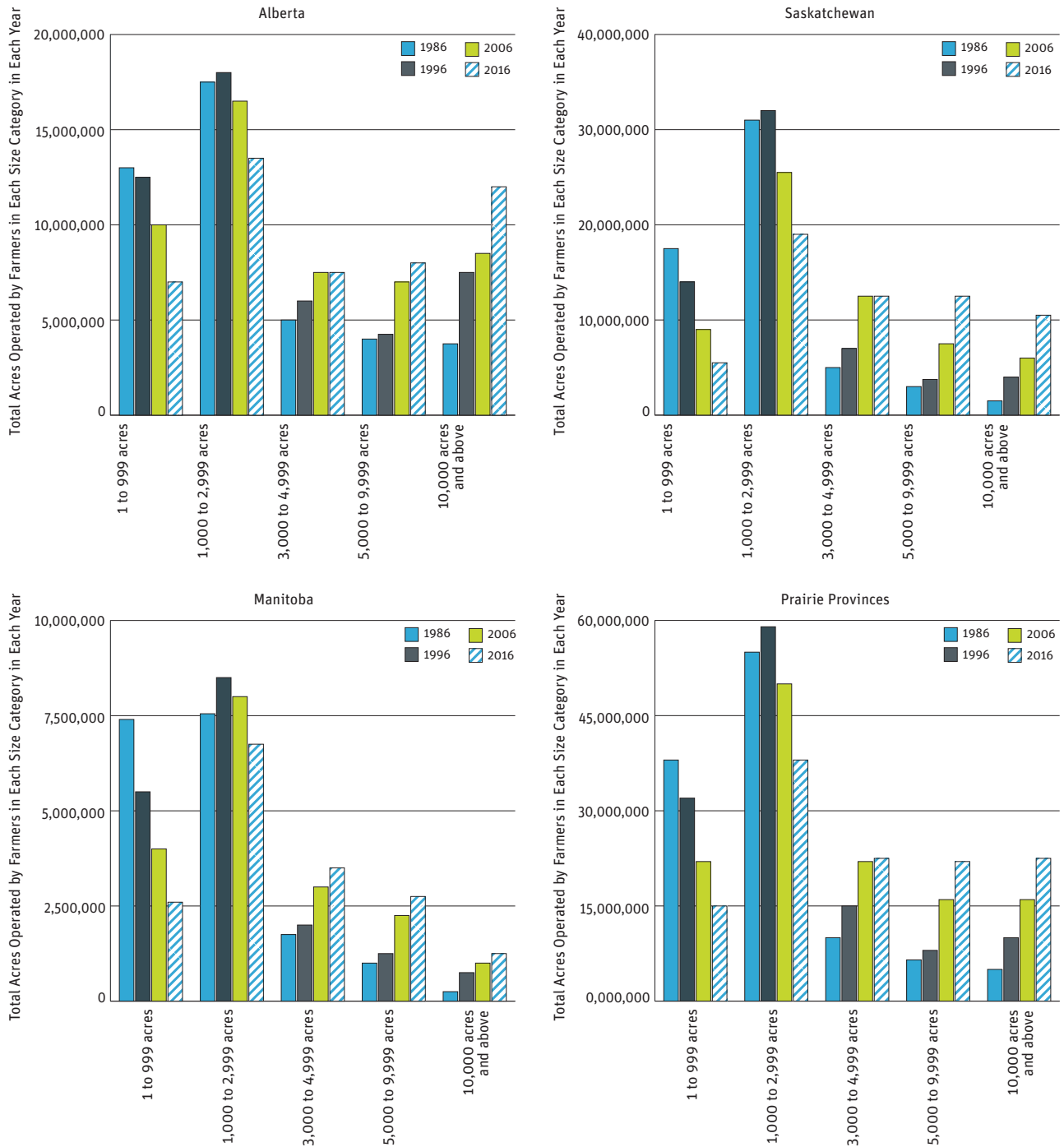
Source: Statistics Canada custom tabulation.

FIGURE 3 Alberta and Manitoba, Farmland Distribution Patterns — Percentage of Farms and Farmland Area in Each Farm-size Category, 2016



Source: Statistics Canada custom tabulation.

FIGURE 4 Alberta, Saskatchewan, Manitoba, and Prairie Provinces, Farmland Distribution by Size Categories, Various Census Years



Source: Statistics Canada custom tabulation.

TABLE 2 Alberta, Saskatchewan, Manitoba, and Prairie Provinces, Percent of Land Operated by Farms in Various Size Categories, 1986 and 2016

	Percent of land farmed by farms 1 to 999 acres in size		Percent of land farmed by farms 3,000 acres & larger		Percent of land farmed by farms 5,000 acres & larger		Percent of land farmed by farms 10,000 acres & larger	
	1986	2016	1986	2016	1986	2016	1986	2016
Manitoba	43	16	12	45	4	24	1	8
Saskatchewan	31	10	17	59	8	38	3	18
Alberta	30	15	30	56	18	40	9	24
Prairie Provinces	32	13	21	56	11	37	5	19

Source: Statistics Canada custom tabulation.

Alberta in 2016, 6 percent of farms (those larger than 5,000 acres) operated 40 percent of the land, while 61 percent of farms shared between them just 15 percent of the land. In Manitoba, the situation is similar: 4 percent of farms (those larger than 5,000 acres) farmed 24 percent of the land, while 55 percent divided between them just 16 percent of the land.

Not only is there an inequitable allocation of farmland in the Prairies, allocation has become more inequitable over time and appears likely to get worse in the coming decades (*Figure 4*).

Figure 4 clearly shows that the number of small farms (less than 1,000 acres) is decreasing and the number of large farms (5,000 acres and more) is increasing. Looking at these graphs, one cannot help but conclude that unless government policies or economic shocks alter these trends, 20 years from now, the area of land operated by small farms will be negligible, and farms larger than 5,000 acres may operate 50 to 60 percent of Prairie farmland (up from about 37 percent today).

Table 2 summarizes some of the changes in farm size in the Prairie Provinces as a whole. Over the past 30 years, farms with more than 5,000 acres have increased the amount of land they operate from 11 percent to 37 percent of the total land farmed. By contrast, those with fewer than 1,000 acres have seen their share of land decline from 32 percent to 13 percent. In Saskatchewan, farms larger than 3,000 acres have increased their share of farmland from 17 percent in 1986 to nearly 60 percent in recent years.

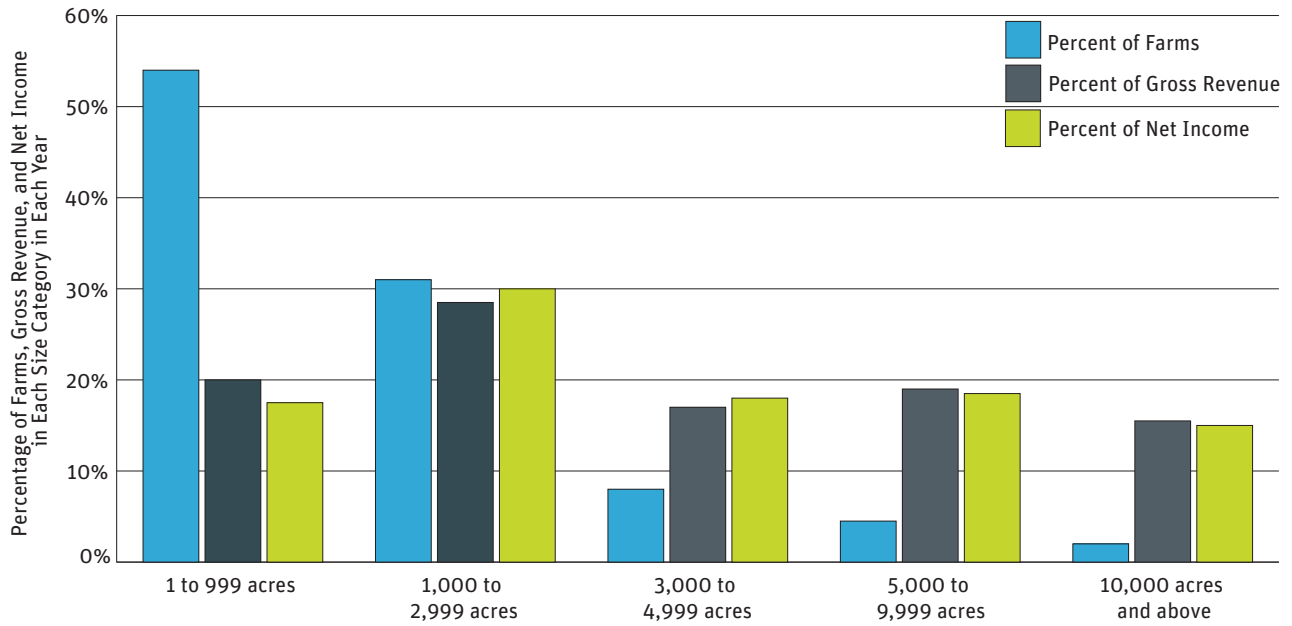
Land Inequality and Income Inequality

A SMALL AND declining number of farms are operating the lion's share of Prairie farmland. Not surprisingly, a small and declining number of farmers are capturing the lion's share of farm revenue and net income ("net cash income"⁴ is the measure used here). *Figure 5* shows the situation for the Prairie Provinces as a whole. For each size category, it shows the percentage of farms (the blue bars), the percentage of gross revenue captured by those farms (the black bars), and the percentage of net income captured by those farms (the green bars).

Combining the two largest categories in the graph above, we see that farms larger than 5,000 acres — just 6 percent of farms overall, captured about 33 percent of revenues and net income. Farms larger than 10,000 acres make up less than 2 percent of total Prairie farms, yet those very large operations captured approximately 15 percent of gross revenues and net income. On average, these very large farms earned net incomes of more than \$820,000 each. (Note that net income here is calculated before making allowances for depreciation — the cost of farm machinery and buildings. See footnote above.)

At the other end of the size distribution, farms smaller than 1,000 acres, though they make up 53 percent of total farms, captured just 21 percent of revenues and 18 percent of net income. On average, these farms earned net incomes of just over \$34,000 each (again, before depreciation).

FIGURE 5 Prairie Provinces, Percentage of Farms, Gross Revenue, and Net Income in Each Farm-size Category, 2016 Census (2015-year data)



Source: Statistics Canada custom tabulation.

Inequitable distribution of farmland is contributing to inequitable distribution of revenues and incomes. And as land inequality increases, as is likely (see discussion regarding *Figure 4*), income inequality will also increase.

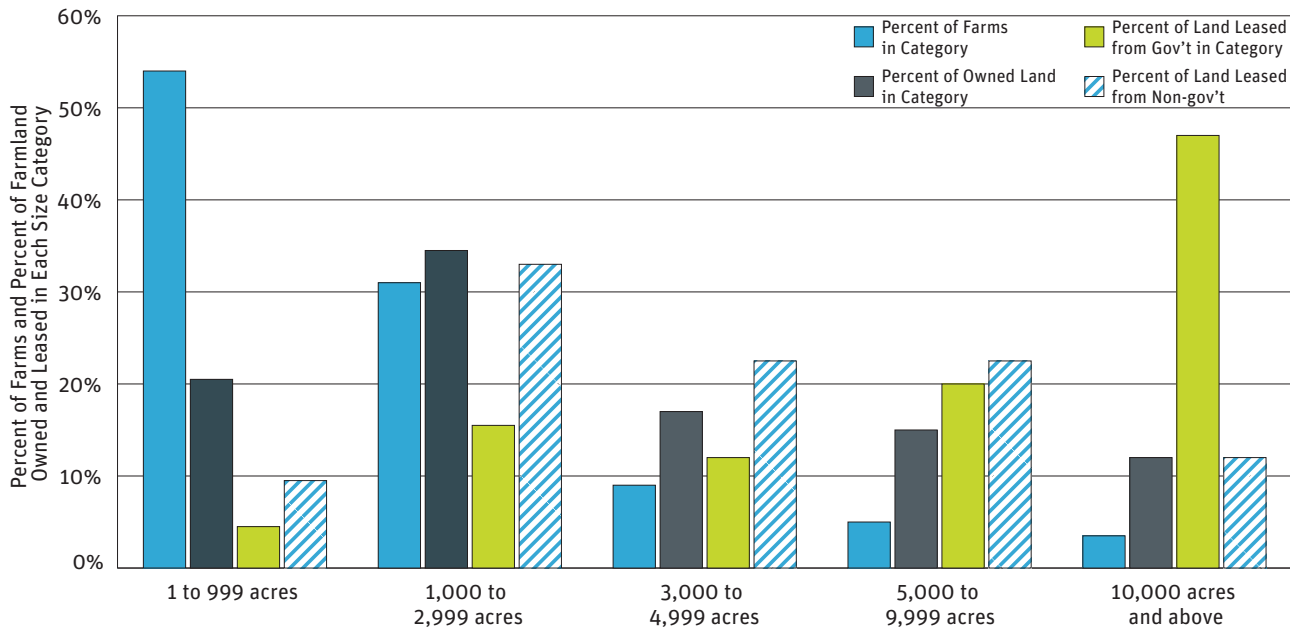
Concentration of Ownership

SO FAR THIS report has focused on farmland concentration in terms of how much land a given subset of farms operates and controls – via ownership, leasing, or renting. This is because farms, especially large ones, access farmland not only through ownership but also through lease and rental agreements. Indeed, some of the largest cattle operations access most of their land through leasing, often from governments. We do not get a complete picture of how farms are structured and how access to land is becoming more concentrated if we look only at ownership. Nonetheless, the Statistics Canada data does allow us to analyze farmland ownership and concentration of ownership.

Figure 6 shows that in the Prairie Provinces, farms larger than 5,000 acres – 7 percent of all farms – own 27 percent of *all* farmland that is owner-operated, i.e., land that is farmed by the same person who owns it. To clarify, these farms do not own 27 percent of all the farmland in the Prairies, as some of that land is owned by government and leased to farmers, and some of that farmland is owned by non-government entities: citizens and corporations (including retired farmers, children of deceased farmers, investors and investment companies, or other entities, and also by farmers who rent part of their land to other farmers).

In addition to giving us information about ownership, *Figure 6* also shows that the 7 percent of Prairie farms that are larger than 5,000 acres lease 67 percent of government leased farm land and that same 7 percent of

FIGURE 6 Prairie Provinces, Percentage of Farms and Percent of Owned and Leased Farmland in Each Farm-size Category, 2016



Source: Statistics Canada custom tabulation.

farms rent or lease 35 percent of all land rented or leased by farmers from non-government farmland owners.

We have thus far focused on concentration among farms and farmers in the Prairie region. But it is useful to look at land ownership concentration in terms of the Canadian population as a whole. In 2016, 37,622 farm operations owned about half of all Canadian agricultural land in private hands (including land owned by farmers and by non-farmers, but excluding land owned by governments (Statistics Canada custom tabulation). We can make a rough assumption, perhaps generous, that each farm operation included 2.5 landowners – some combination of parents, children, partners, etc. Thus, perhaps 94,000 people ($37,622 \times 2.5$) own half of Canada's farmland. *Less than three-tenths-of-one-percent of Canadians own half of this country's (privately-owned) food-producing acreage.* While it may remain the case that our farmland is owned by local families, it is also the case that most is owned by a very small percentage of families.

Losing Farmers From the Land

The preceding numbers and discussion raise many concerns. The first, and perhaps most important, is how land concentration affects the prospects for young farmers: those under 35 years of age, to use a Statistics Canada definition. New farmers and young farmers usually start out with small farms, but *Figure 4* shows that the number of small farms is falling rapidly. It should be no surprise that the number of young farmers is also falling rapidly. The number of young farmers in Alberta, Saskatchewan, and Manitoba has declined by more than 70 percent, a stunning amount, in just one generation — since 1991 (Statistics Canada *Table 32-10-0169-01*). The reduction in the number of small farms, the concentration of farmland and farm income into fewer and fewer large operations, and barriers to entry created by rising land prices (See Farm Credit Canada, *Farmland Values Report*) all make it more difficult for young and new farmers to enter agriculture. Some recent studies clearly point to the fact that access to land is the number one concern of young farmers (See, for example, Laforge, Fenton, Lavalée-Picard, McLachlan, 2018). *The rapid decrease in the number of young farmers is simultaneously cause and effect of increasing farmland concentration.*

The second concern is that concentration feeds on itself, creating ratchet and positive-feedback effects. Most farmland is bought and sold in open markets⁵ — allocated according to ability to pay. Who has the greatest ability to pay for a given acre of farmland? Often it is those who already have the most acres paid for — often those who operate the largest farms. Because margins are tight and per-acre net income is low on cattle farms and grain and oilseed farms (see *Figure 7* and *8*, below), a young or new farmer on a small farm with few acres paid for has a very limited ability to pay for additional acres. In contrast, a large farm that may have 5,000 or 10,000 acres paid for has a large capacity to pay off additional land purchases. These large farms often have greater capacity to borrow money (on better terms than those usually offered to smaller farms), and they often generate significant net returns over and above what families need to live on (recall from above the \$820,000 average net farm income earned by Prairie farms larger than 10,000 acres). As farms get larger they increase their capacities to get larger still. As in the economy as a whole, there is a positive feedback loop driving inequality.

Another concern is that, as we lose farmers from the landscape, our farms and food production systems become less adaptable, responsive, diverse, and resilient. A farmer once said of a neighbour with a very large operation:

“he’s farming a lot of land a little.” The meaning was clear: a farmer pushed to cover thousands of acres is spread thin, and he or she can devote only a limited amount of thought, management, stewardship, and care to each acre. Each acre is farmed just “a little.” But as we face unpredictable and damaging weather events brought on by climate change, it would seem that having more farmers on the land would be preferable to having fewer since, on smaller farms, micro-climate considerations can help manage climate impacts on production. On very large farms, each acre may be treated similarly, despite localized variations in soil composition, moisture, heat, wind, and other factors. Unless government policies disrupt current trends, by the latter decades of this century we will have average temperatures that are 2 to 3 degrees higher, a dramatic increase in unpredictable and damaging weather, and only a third as many farmers as we have now to manage and adapt.

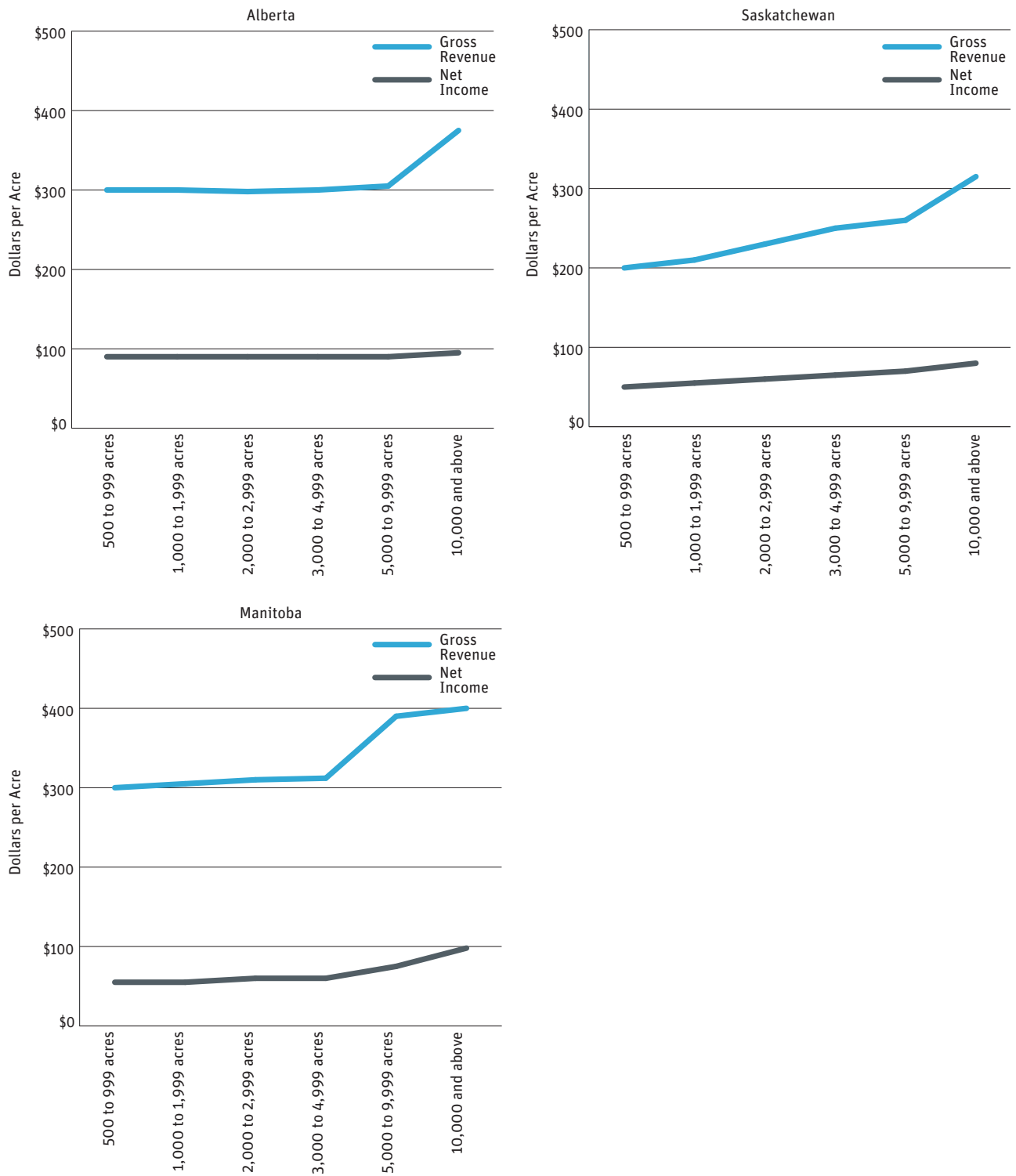
A persistent decline in the number of farmers, farm size expansion, growing farm income inequality, and increased land concentration have other effects as well. Rural economies, communities, businesses, and services are affected as there are fewer farm families to patronize local shops and services. Farmers lose their capacity to democratically influence governments and legislation as their voting numbers continue to fall. Non-farmers lose their connections to farms and rural culture as fewer and fewer urban residents count farmers among their family members or friends.

Finally, there are the concerns discussed at the beginning of this report: that farmland concentration will alter our society, change employment patterns, and, alongside increasing concentration elsewhere in our economy, undermine democratic governance, equality, and social mobility. Agricultural land ownership is not merely a farm issue: changing patterns of access, ownership, and control affect the resilience of our food supply, the population distribution on the landscape, the job prospects for our children, and the economic and democratic health of our nation.

Are there Benefits to Farmland Concentration?

The preceding discussion characterizes the declining number of farmers, the expansion of farm size, and increasing farmland concentration as negative — damaging to the prospects of young farmers, communities, economies, employment opportunities, and efforts to adapt to climate change and build more sustainable food systems. But many claim that there may also be benefits. One often-suggested benefit is that large farms are more productive,

FIGURE 7 Alberta, Saskatchewan, and Manitoba, Grain and Oilseed Farms, per Acre Gross Revenue and Net Cash Income, by Farm Size, 2016 Census (2015-year data)



Source: Statistics Canada custom tabulation.

efficient, or profitable — that they have “economies of scale.” There are some indications that large farms can generate higher per-acre returns, but the evidence is mixed and the issue remains contested.

Figure 7 shows per-acre gross revenues and net cash income for grain and oilseed farms in three Canadian provinces in one year. Beginning with gross revenues (the blue lines), we see that all three graphs show an upward trend in per-acre revenues as farms get larger. Manitoba and Saskatchewan show the most unambiguous trends. In Alberta, revenues are flat as farm-size increases, except for very large grain and oilseed farms.

Turning to net farm income (the tan-coloured lines) correlations are of varying strength. The trendline for Alberta is flat. Saskatchewan and Manitoba show increasing net incomes per acre as farms get larger. Additional data and research is needed to determine what effect depreciation charges might have on these net income results. Further, we must ask if perhaps these increases in gross revenues and net incomes, which appear to increase with farm size, are not actually a function of other factors (see the next paragraph and *Table 4*).

Related to the question of whether larger farms may be more profitable is the question of whether they provide the benefit of being more efficient. Fully answering any of these questions requires a more in-depth analysis that includes additional datasets, but our data suggests that larger units are not necessarily more efficient. Efficiency can be calculated many ways. One way is to compare dollars of output (value of grain or livestock or other products) per dollar of input (value of fuel, fertilizer, and other inputs). This measure has been used to evaluate the efficiency of U.S. farms of different sizes (Duffy 2009). *Table 3* shows that for the year in question, in Saskatchewan, for example, the increased gross revenues and net incomes of the largest farms (>10,000 acres) is largely just a function of increased input use. If we take a look at a ratio of dollars-in-to-dollars-out, we find that it is largely the same across all scales: about \$1.30 of output per \$1 of inputs. This finding is similar to patterns in the U.S., where the ratio of dollars of farm sales to dollars of expenses initially increases with farm size, but then levels off, and in fact declines for the largest farms (Duffy 2009, *Table 2*). Similarly, our data suggests that perhaps larger farms are not inherently more productive (i.e., they do not produce higher outputs, revenues, or net incomes because they are large), rather they are just spending more on inputs per acre, and thus generating larger outputs. Care should be taken with regard to these numbers, however, as they pertain to only one province in one year. Nonetheless, they do point to important questions regarding the supposed economies of scale of very large farms, that is, the idea that

TABLE 3 Saskatchewan Grain and Oilseed Farms Per-acre Revenue, Net Income, Expenses, and Revenue-to-expense Ratio, 2016

	Gross revenue per acre	Net income per acre	Expenses per acre	Dollars of output per dollar of input (Revenue/expenses)
100 to 499 acres	\$236.15	\$53.51	\$182.64	\$1.29
500 to 999 acres	\$203.03	\$45.16	\$157.87	\$1.29
1,000 to 1,999 acres	\$224.62	\$50.68	\$173.94	\$1.29
2,000 to 2,999 acres	\$241.20	\$55.72	\$185.48	\$1.30
3,000 to 4,999 acres	\$252.59	\$60.21	\$192.38	\$1.31
5,000 to 9,999 acres	\$265.71	\$63.84	\$201.87	\$1.32
10,000 and above	\$331.03	\$77.34	\$253.68	\$1.30

Source: Statistics Canada custom tabulation.

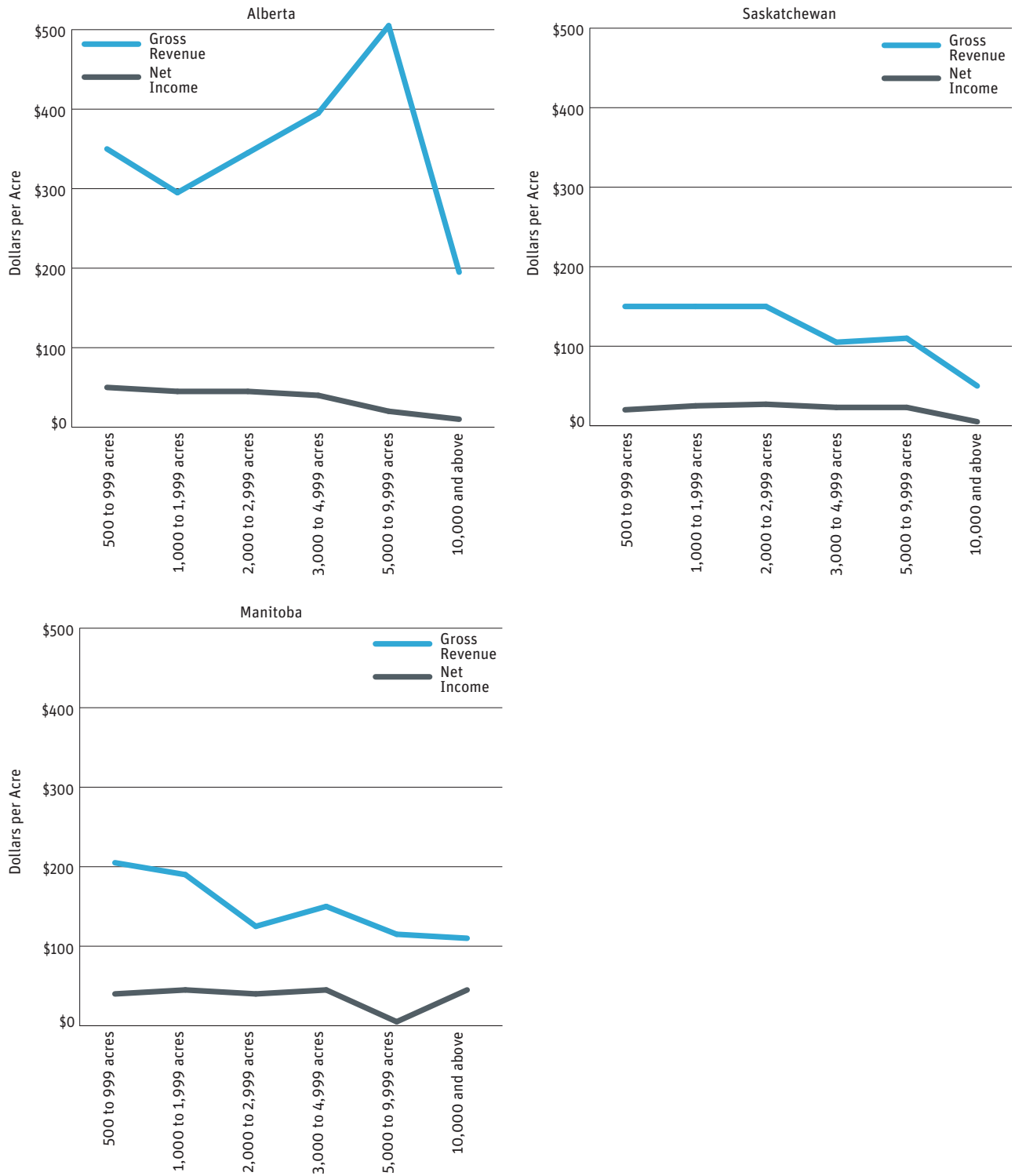
they are inherently more efficient, productive, or profitable. More research is needed on the important question of whether farm size itself has a positive effect on production, revenues, and net incomes.

Beyond possible efficiency or productivity effects, other factors may also affect per-acre revenues and net incomes, including access to, and participation in, taxpayer-funded farm support programs;⁶ differences in land quality (larger, better capitalized farms may be able to purchase land with better soils); more favourable treatment by grain companies or other farm-product buyers (large farm operations may have some bargaining power, or ‘market economies of scale’); or intergenerational effects (long-established farms may have capital assets and other resources that newer and smaller farms may not have or may have to purchase).

If the data shown in *Table 3* is broadly representative of all prairie provinces, it also raises certain environmental questions. This data demonstrates that large farms are using more inputs per acre – more fertilizer, chemicals, fuels, etc. So, in addition to the monetary costs of increased production per acre, there are environmental costs. Above, we note that there may be other costs from farm enlargement: social and rural-economy costs. Thus, uncertainty is two-fold: are larger farms more productive, efficient, or profitable when evaluated in narrow output terms; and does the narrow calculation of possible efficiencies overlook a wide range of social and environmental costs resulting from farm-size expansion, increased input use, and increasingly inequitable control of land?

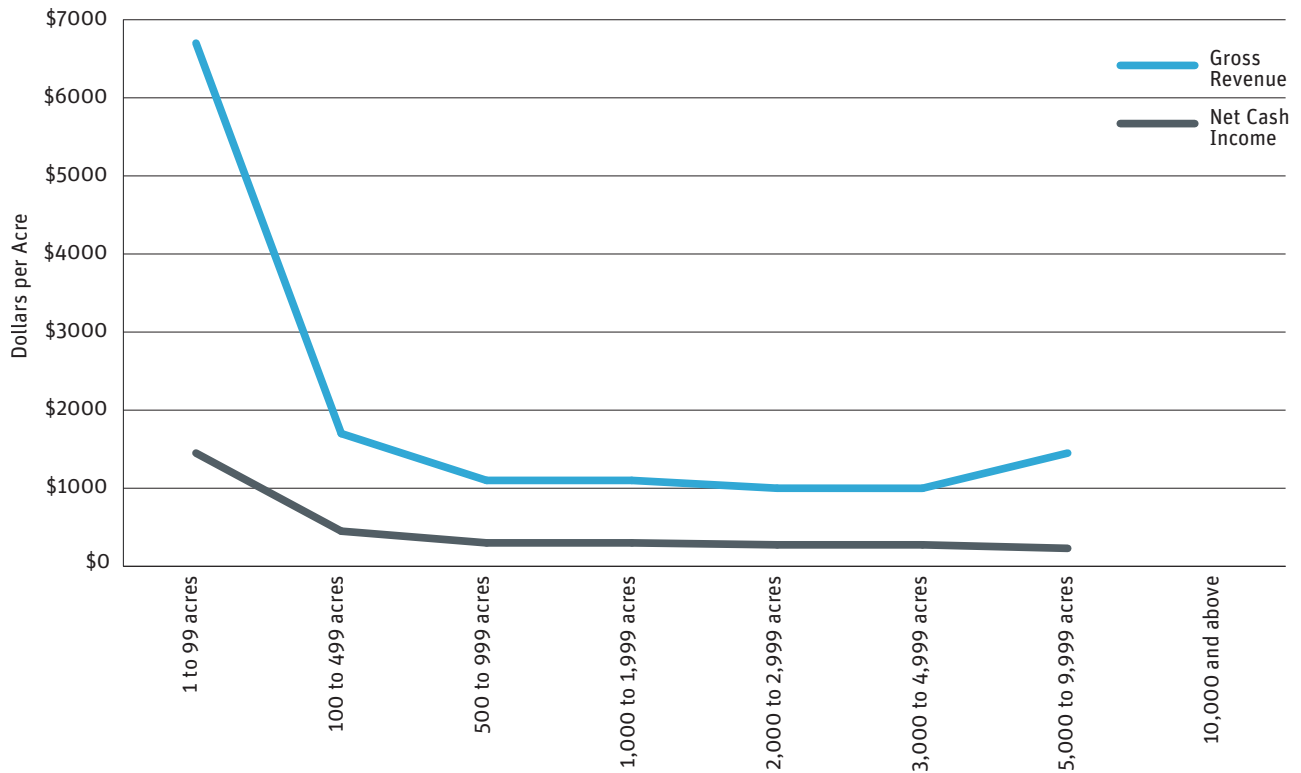
A big-picture look at the farm financial situation also calls into question purported benefits of farm-size expansion and attendant increases in land-

FIGURE 8 Alberta, Saskatchewan, and Manitoba, Cattle Farms, per Acre Gross Revenue and Net Cash Income, by Farm Size, 2016 Census (2015-year data)



Source: Statistics Canada custom tabulation.

FIGURE 9 Canada Dairy Farms, per Acre Gross Revenue and Net Cash Income, by Farm Size, 2016 Census (2015-year data)



Source: Statistics Canada custom tabulation.

holding concentration. Average farm size is now at a record high, but so, too, is farm debt (now \$115 billion, according to Statistics Canada). Canadian farms continue to require billions of dollars per year in farm-support program payments⁷ – with the largest farms reaping a disproportionately large share. And farm numbers continue to drop steeply as many farm families fail to earn adequate family incomes. The project of doubling and redoubling farm size has not resulted in a stable and prosperous farm sector. The opposite is the case. The fact that we have reduced the number of young farmers on the Prairies by 70 percent in just one generation is a grave indictment of our current direction – one too focused on maximizing production, exports, input use, energy use, farm size, and technology dependence. This is an approach fixated on deregulation and export-market solutions.

Returning to the data on farm size and profitability, *Figure 8* shows per-acre gross revenues and net cash income for beef cattle ranching and farming operations in each of the three Prairies Provinces (*Figure 7* showed the same data for grain and oilseed farms). The Statistics Canada data includes

feedlots, so the graphs here exclude operations with fewer than 500 acres, so as to omit those feedlot operations. As might be expected, very large cattle operations earn lower gross revenues per acre and lower net cash incomes. While economies of scale may exist, they do not manifest in terms of higher gross or net returns per acre as cattle farms get larger. Those curious about dairy farms and potential economies of scale can see *Figure 9*.

In summary, the evidence provided here raises questions for those who defend the trend to larger farms and increased concentration in farmland ownership and control on the grounds of efficiency. Policymakers need to question the assumption that bigger is better, more productive, more profitable, or more efficient. While there may be efficiencies and economies of scale (more output per worker, perhaps) those gains may be more than offset by macro-economic, environmental, and social losses.

Conclusions

WEALTH AND INCOME inequality are increasingly serious problems in Canada and many other nations. Our analysis of Census of Agriculture data from 1966 to 2016 clearly demonstrates that the ownership and control of Canada's food-producing land is becoming more and more concentrated. Farmland concentration makes it much harder for young and new farmers to enter agriculture; it damages Canadians' abilities to democratically shape our food systems; it fosters large-scale, input-dependent, highly capitalized agriculture; it impedes our efforts to adapt to climate change and create more sustainable food systems; it has negative effects on rural economies and Canadian culture; and it makes food supply chains more vulnerable in times of pandemic emergencies or other disruptions.

In a nation where virtually every sector of the economy is increasingly controlled by huge corporations and foreign capital, farming and farmland ownership stand out as important exceptions⁸ — critical counterweights to a corporate and foreign takeover. Canada has a unique opportunity to use broad-based, local landholding as part of a foundation for a new kind of regional and Canadian economy. Similarly, if we are to slow and then reverse income and wealth disparities, access, ownership and control of productive assets are key considerations. Any serious commitment to tackling inequality must ensure that a much greater number of Canadians have access to and control over land and other productive assets.

A series of policy measures are urgently needed to counter the market forces that will otherwise drive us toward even more concentrated farmland

ownership and drive half of Canadian farm families off the land in the next one to two generations. Policies that should be considered and evaluated include reshaping our farm-support programs to counter market forces pushing farms toward giant proportions and producing for distant export markets; using tax laws and incentives toward the same ends; imposing limits on the area any one entity can own as is done through the *Lands Protection Act* in Prince Edward Island; developing land access programs for young and new farmers, including Indigenous peoples; redirecting research away from industrial models toward organic production, small-scale, diversified, agroecological, local production, and similar approaches; and generally restructuring Canadian agricultural policy toward a focus on maintaining the maximum number of farmers and nurturing broad-based access and control of food producing lands. Going beyond limits on farmland ownership, governments may also want to consider public and community purchase of farmland as have been advanced in other jurisdictions, including Scotland (Shields 2018; Mckee et al. 2018).

In Canada, we have yet to engage in an extensive public debate about access to and control over farmland. It is especially important to do so here on the prairies where over 70% of Canada's agricultural land is located. Federal and provincial policies that ensure a more equitable distribution of access to and control of Canada's food producing lands can form part of a larger effort to counter income and wealth inequality, help retain local democratic control of our economy and polity, tackle the climate crisis head-on, and build stronger and more resilient food systems that can better survive in times of pandemics and other disruptions.

Appendix A: Data and Data Quality

MOST OF THE analysis above is based on a custom data tabulation from Statistics Canada using Census of Agriculture data. The format of the data is described in the following, excerpted from an email from Statistics Canada:

Census years: 1986, 1996, 2006, 2016

Table 1. Selected variables classified by custom total farm area distribution, for farms reporting over \$20,000 in gross farm receipts, Canada and provinces:

- a. Number of farms
- b. Number of farms per North American Industrial Classification System (NAICS) codes
- c. Number of farm operators
- d. Total farm land operated
- e. Median land area of farms
- f. Total gross revenue of farms
- g. Total expenses
- h. Total net farm income

- i. The average age of farm operators
- j. Gender of farm operators

Table 2. Number of farms, number of operators, total farm area, land tenure variables, and land use variables, for farms reporting over \$20,000 in gross farm receipts, classified by custom total farm area distribution and by the North American Industry Classification System (NAICS), Canada and provinces:

- a. Number of farms
- b. Number of operators
- c. Total farm area
- d. Land tenure: by tenure: owned, rented, leased, etc.
- e. Land use: land in crops, summerfallow, tame pasture, natural land for pasture, etc.

Farm size categories:

- i. 1 to 99 acres
- ii. 100 to 299 acres
- iii. 300 to 499 acres
- iv. 500 to 999 acres
- v. 1,000 to 1,999 acres
- vi. 2,000 to 2,999 acres
- vii. 3,000 to 4,999 acres
- viii. 5,000 to 6,999 acres
- ix. 7,000 to 9,999 acres
- x. 10,000 to 19,999 acres
- xi. 20,000 to 29,999 acres
- xii. 30,000 to 49,999 acres
- xiii. 50,000 to 99,999 acres
- xiv. 100,000 and above

Farm type: North American Industry Classification System (NAICS):

- o. All farms
 1. Dairy cattle and milk production
 2. Beef cattle ranching and farming, including feedlots
 3. Hog and pig farming
 4. Poultry and egg production
 5. Sheep and goat farming
 6. Other animal production
 7. Oilseed and grain farming
 8. Vegetable and melon farming
 9. Fruit and tree nut farming
 10. Greenhouse, nursery and floriculture production
 11. Other crop farming

In some cases, where the number of farms in a category was just one or two, Statistics Canada suppressed the data as required by privacy laws. (This also triggered data suppression in other cells in order to prevent us from deriving the suppressed cells through straightforward subtraction.) Thus, it was necessary to estimate a limited number of data points. Nonetheless, we have confidence that our limited number of estimates in no way affect the overall shapes of the graphs presented in this report or the conclusions we draw. In all cases, the data points we estimated made up a small percentage of the total in each category. Also, many parts of the overall dataset had no suppressed data – these portions were complete. Also, where potential repairs and interpolations brought significant risks of uncertainty or inaccuracy, no repairs were attempted. Finally, because much of the omitted data pertained to very large farms (e.g., those 50,000 acres and above) we aggregated data and, rather than analyzing the few farms in those categories, we instead analyzed the hundreds or thousands of farms in a size category such as 10,000 acres and above.

The screen capture below gives a sense of our efforts to fill in gaps in the data from Statistics Canada. In doing this work we utilized several strategies: using reasonable averages suggested by data category values, using values for provinces that were suggested by national averages, or estimating missing numbers by subtracting available data from overall totals.

	A	B	C	D	E	F	Q	R	S
1	Selected farm and farm operator variables classified by custom total farm area								
2	Source: Census of Agriculture, Statistics Canada								
3	CONSOLIDATED ONTO ONE SHEET BY DARRIN								
4		Province - Code	Geographic identification	Distribution: Total farm area (custom) - Code	Distribution: Total farm area (custom)	Total number of farms	Industry Group (NAICS): Other crop farming - Farms reporting	Total farm area - Farms reporting	Total farm area - Acres
5		GEO_PROV	GEOID_I	CUST_TFAREA	CUST_TFAREA_I	FARMS_N	NAICS311_N	TFAREA_N	TFAREA
6	Year	Prov. (code)	Province	Size category (code)	Size category	Farms (#) 1	Other crops farms (#)	Farms (#) 2	Farms (10 acres)
734	2016	47	Saskatchewan	7 g. 3,000 to 4,999 acre		3,272	94	3,272	12,418,485
735	2016	47	Saskatchewan	8 h. 5,000 to 6,999 acre		1,207	20	1,207	7,041,188
736	2016	47	Saskatchewan	9 i. 7,000 to 9,999 acres		634	10	634	5,197,364
737	2016	47	Saskatchewan	10 j. 10,000 to 19,999 ac		442	6	442	5,898,765
738	2016	47	Saskatchewan	11 k. 20,000 to 29,999 ac		96	4	96	2,293,526
739	2016	47	Saskatchewan	12 l. 30,000 acres and ab		54	0	54	2,395,884
740	2016	47	Saskatchewan	13 m. 30,000 to 49,9		41	0	41	1,510,290
741	2016	47	Saskatchewan	14 n. 50,000 to 99,9		12	0	12	700,924
742	2016	47	Saskatchewan	15 o. 100,000 and a		1	0	1	184,670
743	2016	48	Alberta	0 p. All farms		29,998	3,938	29,998	47,683,774
744	2016	48	Alberta	1 a. 1 to 99 acres		2,347	283	2,347	104,304
745	2016	48	Alberta	2 b. 100 to 299 acres		5,310	968	5,310	956,991
746	2016	48	Alberta	3 c. 300 to 499 acres		4,789	861	4,789	1,850,397
747	2016	48	Alberta	4 d. 500 to 999 acres		5,857	877	5,857	4,296,028
748	2016	48	Alberta	5 e. 1,000 to 1,999 acre		5,492	602	5,492	7,828,278
749	2016	48	Alberta	6 f. 2,000 to 2,999 acres		2,471	164	2,471	6,008,384
750	2016	48	Alberta	7 g. 3,000 to 4,999 acre		1,957	115	1,957	7,429,319
751	2016	48	Alberta	8 h. 5,000 to 6,999 acre		703	33	703	4,102,555
752	2016	48	Alberta	9 i. 7,000 to 9,999 acres		465	15	465	3,840,214
753	2016	48	Alberta	10 j. 10,000 to 19,999 ac		454	17	454	6,173,705
754	2016	48	Alberta	11 k. 20,000 to 29,999 ac		92	2	92	2,199,425
755	2016	48	Alberta	12 l. 30,000 acres and ab		61	1	61	2,894,174
756	2016	48	Alberta	13 m. 30,000 to 49,9		39	0	39	1,508,388
757	2016	48	Alberta	14 n. 50,000 to 99,9		21	1	21	1,201,116
758	2016	48	Alberta	15 o. 100,000 and a		1	0	1	184,670

References

- Duffy, M.** 2009. “Economies of Size in Production Agriculture,” *Journal of Hunger & Environmental Nutrition*, 4:3-4, 375-392, DOI: 10.1080/19320240903321292
- Lalforge, J., A. Fenton, V. Lavalée-Picard, Stéphane McLachlan.** 2018. “New farmers and food policies in Canada,” *Canadian Food Studies*, 5(3), pp. 128–152. Available at <https://canadianfoodstudies.uwaterloo.ca/index.php/cfs/article/view/288/296>
- Magnan, A. and S. Sunley.** 2017. “Farmland investment and financialization in Saskatchewan, 2003–2014: An empirical analysis of farmland transactions,” *Journal of Rural Studies* 49, pp. 92–103. Available at <https://doi.org/10.1016/j.jrurstud.2016.11.007>
- McKee, A., L. Sutherland, J. Hopkins and S. Flanigan.** 2018. Increasing the availability of farmland for new entrants to agriculture in Scotland. Final report to the Scottish Land Commission.
- Qualman, D., H. Akram-Lodhi, A.A. Desmarais and Sharada Srinivasan.** 2018. “Forever Young? The crisis of generational renewal on Canada’s farms,” *Canadian Food Studies*, 5(3), pp. 100–127. Available at <https://canadianfoodstudies.uwaterloo.ca/index.php/cfs/article/view/284>
- Rasmussen S.** 2013. Economies of Scale and Size. In: *Production Economics*. Springer Texts in Business and Economics. Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-642-30200-8_11
- Shields, K.** 2018. Human rights and the work of the Scottish Land Commission: A discussion paper. Land Lines, a series of independent discussion papers on land reform issues. Available at https://landcommission.gov.scot/downloads/5dd6a5d2e58f3_Land-Lines-Human-Rights-Kirsten-Shields-May-20182.pdf

Endnotes

- 1** There has also been an outbreak of COVID-19 cases at the Maple Leaf plant in Brandon. At the time of finalizing this report, news stories stated that according to the President of UFCW Local 832, Maple Leaf Foods indicated that 76 cases of COVID-19 are connected with this plant, but it remained open. See <https://www.thestar.com/news/canada/2020/08/26/manitoba-doubles-subsidy-as-premier-asks-people-to-follow-health-rules.html>
- 2** The terms ‘economies of scale’ and ‘economies of size’ can both be used to describe the types of efficiencies that may be associated with larger farms. As explained by Rasmussen (2013), “economies of scale describe how much production increases when the firm increases its scale of production, i.e. increases all (both fixed and variable) inputs by a common proportionality factor. Economies of size describe what happens to cost per unit of output when production increases in a cost minimising way.” For simplicity, we use the term ‘economies of scale’ throughout the paper, while acknowledging that, depending on the variables changing (e.g., land base, labour, machinery, other inputs), either or both economies of scale and economies of size might be in play.
- 3** Research is needed into the reasons behind the much slower loss of farmers in British Columbia as there may be policy lessons for the rest of Canada. That said, differences between that province and the Prairies, for example, may limit policy transferability.
- 4** Net cash income is one measure of net farm income. It is equal to farm cash receipts (gross revenues) minus cash operating expenses. Net cash income does not take into account depreciation charges, i.e., the year-over-year loss of value of productive farm assets such as machinery, buildings, and the farm-business portion of the value of automobiles and homes. Depreciation, especially on farm machinery, is a significant and legitimate cost. If depreciation was taken into

account, all net income values listed here would be far lower. For example, in the Prairie provinces, in 2016, realized net income (which takes into account depreciation) was just over half as large as net cash income (which does not). (See Statistics Canada Table: 32-10-0052-01)

5 In 2014, for instance, 73 percent of farmland transactions involving an ownership change were between arms-length parties, whereas 27 percent were among family members (Magnan and Sunley 2017, Table 2).

6 Here we are referring to programs such as Crop Insurance, AgriInvest, AgriRecovery and AgriStability. Since these lack adequate payment caps, they tend to benefit larger landowners and farmers and thus help drive concentration.

7 In 2019, net payments to agricultural producers from government programs and rebates was \$2.1 billion (Source: Statistics Canada. Table 32-10-0106-01 Direct payments to agriculture producers (x 1,000)).

8 In Canada, only 2.7% of farms are classified as non-family corporations (Statistics Canada. Table 32-10-0433-01 Farms classified by operating arrangement). It is much more difficult to say exactly what the rate of foreign ownership of Canadian farmland might be. The prairie provinces prohibit non-Canadians from owning farmland, with some exceptions made for small parcels. In other provinces such as Ontario, B.C., and Québec, there is some foreign farmland ownership, but in the absence of a comprehensive ownership registry (easily accessible to the public), it is impossible to say how much land is owned by non-Canadians.



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