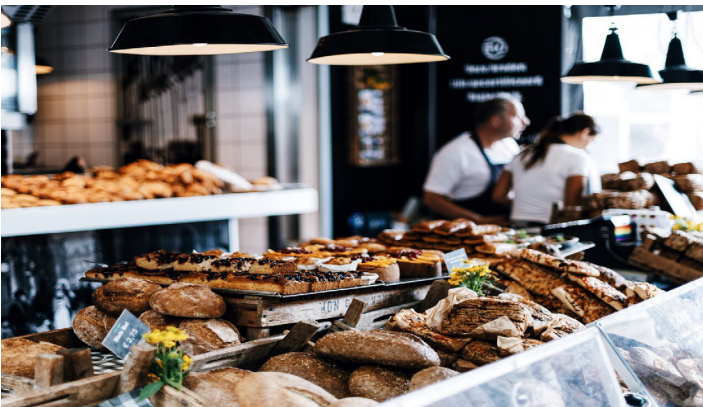# Food Counts:

A Pan-Canadian Sustainable Food Systems Report Card

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Acknowledgements

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Section 1: Introduction

Background

Within Canada, there is growing concern about how the food system is organized and governed and who has the power to make decisions that impact social systems and the natural world. While many claim that the dominant food system is managed in the public interest, there is growing evidence that this is not the case. Controlled primarily by corporate interests, the global food system privileges profit over social and ecological well-being.[1,2] Despite supplying large amounts of foods to global markets, the International Panel of Experts on Sustainable Food Systems (IPES) has outlined that the dominant food system is contributing to a host of negative outcomes, such as: degradation of land, water, ecosystems, and biodiversity; high levels of greenhouse gas emissions; persistent hunger and under-nutrition together with rises in diet-related diseases; and the fragility of farmer and fisher livelihoods around the world.[3]

A fundamentally different way of governing food systems is required - one that is rooted in a coherent alignment of social justice, support for local economies, ecological regeneration and deep democratic engagement with producers, harvesters, processors, retailers, eaters and Indigenous Peoples. Practical tools are needed to help us understand the current state of the Canadian food system and to frame a future vision of justice and sustainability. In a recent report, the IPES recognized that "current systems will be held in place insofar as these systems continue to be measured in terms of what industrial agriculture is designed to deliver, at the expense of many other outcomes that really matter in food systems".[4] In response, they call for the development of new indicators for sustainable food systems that benefit long-term social, economic and ecological systems.

A food systems report card, as one such tool, can support several relevant, reflective and visionary functions. First, report cards can provide a lay of the land by bringing together relevant statistics into a unified overview of the food system. Second, they can act as a benchmark to inform historical analysis as well as comparisons with future developments. Benchmarks can indicate areas where things are going well in addition to areas where opportunities for improvement might exist. Report cards also help to identify gaps in the data and where case studies can elaborate on successes and limitations. Making "data gaps" visible in a systematic way can help identify the key areas requiring further research and examination, which can then inform a more comprehensive food policy and practice.

Report cards, however, are not politically neutral. A scan of existing report cards on the state of food in Canada (and elsewhere) revealed significant limitations based on narrow foci and scale. For example, the Conference Board of

1 Weis, A. J. (2007). The global food economy: The battle for the future of farming. New York: Zed Books.
2 Howard, P. (2016). Concentration and power in the food system: Who controls what we eat? New York: Bloomsbury.
3 International Panel of Experts on Sustainable Food Systems. (2016). From uniformity to diversity: A paradigm shift from industrial agriculture to diversified agroecological systems. Available at: http://www.ipes-food.org/images/Reports/UniformityToDiversity_FullReport.pdf.
4 Ibid. pp. 57.

Canada's Food Report Card[5] (2015) and the Global Food Security Index[6] presented at the World Economic Forum (2016) are rooted within an economic perspective; the Food Banks Canada annual Hunger Count Reports[7] focus primarily on food access; and, the Diabetes Association of Canada linked food with health expenditures through their report The Economic Tsunami: The Cost of Diabetes in Canada[8] (2009). Each of these contribute to the conversation on food systems, yet none of these reports focus on measuring or supporting the cross-cutting, multi-sectoral dimensions needed to assess the state of sustainable food systems. While comprehensive report cards do exist at the municipal or regional level[9] Canada lacks an assessment tool that takes a Pan-Canadian food systems approach with an integrated focus on social, economic and ecological sustainability.

Objectives

The main objective of this report card is to establish a framework for benchmarking and assessing the state of Canada's food systems using available measures of social, environmental and economic well-being. Using indicators which take a food systems approach, we can better understand the linkages and interconnections within the food system in order to inform decisions about how to

ensure it is more just and sustainable into the future.

The specific objectives of the Food Counts Report Card are to:

1. Reframe the way we understand food as part of integrated and interdependent systems;

2. Provide a snapshot of the Canadian food system using measurable, available, stable and reliable national-scale indicators which provide baseline measurements for comparison;

3. Identify gaps in knowledge to inform future research and tools; and,

4. Support food movement organizations and researchers by providing access to relevant food systems data.

Due to the limits of available data, this first version of the Food Counts Report Card is only a beginning. We expect that over time more data will become available so we can enhance this report as a metric of food systems sustainability in Canada.

Indicator Framework: Food Sovereignty

The indicators used in report cards should be practical, but also visionary, with an explicit and defined trajectory. Easily understood indicators can help identify trends towards or away from a specific goal. The development of the Food Counts Report Card was guided by a food sovereignty framework. Food sovereignty prioritizes "the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems".[10] Food sovereignty pushes back against the economic growth and

5 The Conference Board of Canada. (2016). Canada's food report card 2015: International comparisons. Available at: http://www.conferenceboard.ca/e-library/abstract.aspx?-did=7617.
6 The Economist Group. (2016). The global food security index. Available at: http://foodsecurityindex.eiu.com/
7 Food Banks Canada (2008 - 2016). HungerCount. Available at: https://www.foodbankscanada.ca/hungercount.
8 Diabetes Canada. (2009). Ecomomic Tsunami: The cost of diabetes in Canada. Available at: http://www.diabetes.ca/publications-newsletters/advocacy-reports/economic-tsuna-mi-the-cost-of-diabetes-in-canada.
9 See for example, Thunder Bay and Area Food Strategy. (2015). Community food security report card. Available at http://tbfoodstrategy.ca/files/9614/5804/8867/FoodStrategy_FoodSecurityReportCard_WEB.pdf and Middlesex-London Health Unit. (2016). Middlesex-London community food assessment report. Available at: https://www.healthunit.com/community-food-assessment.

10 Nyéléni Forum for Food Sovereinghty. (2007). Declatation of the forum for food sovereignty. Available at: https://nyeleni.org/spip.php?article290.

individualism fostered by the mainstream development paradigm and provides the basis for a global movement focused on food as a means for collective social change. Indicators framed around food sovereignty provide a strong political and values-based focus which favors a consensus around core themes and a common departure point. At the same time, food sovereignty is an evolving place-based concept and provides opportunities to establish interconnected priorities, actions and strategies between different regions. These principles have been adopted into legislation by several national governments including Mali in 2006, Nepal in 2007, Ecuador in 2008, Venezuela in 2008, Bolivia in 2009 and Nicaragua in 2009 and were formative for Brazilian food policy over the last decade. Constituent groups, for example pastoralists, within the UN-FAO system have also adopted principles of food sovereignty to protect their right to food and land. This work is supported by international organizations including FIAN International and La Via Campesina as well as regional and continental food sovereignty alliances (e.g. Alliance for Food Sovereignty in Africa, the Australian Food Sovereignty Alliance).

We used the six core pillars of food sovereignty developed at the International Forum for Food Sovereignty in 2007 in addition to a seventh pillar which was added by members of the Indigenous Circle during the People's Food Policy[11] process to inform the themes of indicators chosen. As summarized by Food Secure Canada[12], the food sovereignty pillars are as follows:

1. **Focuses on Food for People**
   - Puts people's need for food at the centre of policies
   - Insists that food is more than just a commodity

2. **Builds Knowledge and Skills**
   - Builds on traditional knowledge
   - Uses research to support and pass this knowledge to future generations
   - Rejects technologies that undermine or contaminate local food systems

3. **Works with Nature**
   - Optimizes the contributions of ecosystems
   - Improves resilience

4. **Values Food Providers**
   - Supports sustainable livelihoods
   - Respects the work of all food providers

5. **Localizes Food Systems**
   - Reduces distance between food providers and consumers
   - Rejects dumping and inappropriate food aid
   - Resists dependency on remote and unaccountable corporations

6. **Puts Control Locally**
   - Places control in the hands of local food providers
   - Recognizes the need to inhabit and to share territories
   - Rejects the privatization of natural resources

7. **Food is Sacred**
   - Recognizes that food is a gift of life, and not to be squandered
   - Asserts that food cannot be commodified

Using this framework, the Food Counts Report Card uses a food systems lens to explicitly address social, economic and ecological sustainability while at the

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11 Food Secure Canada People's Food Policy Project. (2011). Resetting the table: A people's food policy for Canada. Available at: https://foodsecurecanada.org/people-food-policy.
12 Food Secure Canada. (2016). What is food sovereignty. Available at: https://foodsecurecanada.org/who-we-are/what-food-sovereignty.

same time linking the report to the work of Canadian food movements as well as the global food sovereignty movement[13] (for specific details on our methodology used, please see Section 2). Although there has been increasing acceptance of the proposal of food sovereignty, organizations and governments lack the tools for monitoring and evaluating projects or actions in this area.[14]

Evaluating Data

For those indicators which we were able to extract historical data, we evaluate that data in this report card by noting simply if the trend shows a positive or negative change with respect to food sovereignty goals. We depict these trends by indicating "getting better" vs. "getting worse" but we do not attempt to indicate what absolute values are most favourable. Due to certain considerations, it was difficult to determine whether trends were positive or negative for some indicators. For these indicators, we label them as a "mixed" interpretation. For many indicators, data was only available for one point in time. For these indicators, we expect that this data will continue to be collected on a regular basis and that current data points will act as the baseline for future reports. In all cases, the data represents the most recent time point in which the information was available at a national level. It is important to note that the availability of recent data varied depending on the data source.

Organization of the Report

The remainder of our report card is broken into four sections:

Section 2 outlines the methodology;

Section 3 describes indicator data;

Section 4 identifies current gaps in knowledge; and,

Section 5 details next steps for the Food Counts Report Card.

Indicators in Section 3 are organized by the seven pillars of food sovereignty for Canada. For each pillar, we provide a brief introduction and a summary table of indicators chosen to reflect that broad theme. Next, the specific data from the indicators chosen are shown graphically with some interpretation. For the purposes of this report, we collapsed the principles 'localizes food systems' and 'puts control locally' together and present the principles and their corresponding indicators in the following order: 1) Focuses on Food for the People, 2) Values Food Providers, 3) Works with Nature, 4) Localizes Food Systems and Puts Control Locally, 5) Builds Knowledge and Skills, and 6) Food is Sacred. In Section 4, we outline a summary of 'wish list' indicators which we wanted to include in the Food Counts Report Card, but for which we could either not find national data for or required primary or secondary data collection and/or analysis to include. Where information exists for these 'wish list' indicators which did not meet our selection criteria, we provide links for reference purposes.

13 See for example La Via Campasina (https://www.viacampe-sina.org/en) and FIAN International (http://www.fian.org/)
14 Binimelis, R., Rivera-Ferre, M. G., Tendero, G., Badal, M., Heras, M., Gamboa, G., & Ortega, M. (2014). Adapting established instruments to build useful food sovereignty indicators. Development Studies Research, 1(1), 324-339.

Section 2: Methodology

The first step to developing the Food Counts Report Card was to conduct an environmental scan of existing report cards and the indicators they used. This enabled us to assess the kind of data available for Canada, at either a national or provincial levels that could be aggregated.

From there, we developed a set of criteria to asses which data sources to include in the report card:

1. **Scale-relevant:** data is available on a national/pan-Canadian scale

2. **Measurable:** indicator is quantifiable

3. **Available:** data is available to the public

4. **Cost-effective:** data is accessible with little monetary input

5. **Stable:** data is consistently collected and replicable one time to the next

6. **Reliable/credible:** data is collected in a methodologically sound way

7. **Understandable/usable:** indicator is easily grasped by interpreters of data so they can apply it in their own community

8. **Sensitive to change:** indicator responds to change over a reasonable length of time

Since an objective of our report card was to have a benchmark to assess changes in the food system over time, whether the data would again be available at a later date was a key consideration.

It is important to note that the indicators chosen for this report card do not reflect a comprehensive set of measures of Canada's food systems. For example, an effort was made to keep the indicators clear and accessible, therefore certain indicators which did not meet this criterion were not selected. Moreover, certain indicators were prioritized over others according to the validity and reliability of the data. We also avoided choosing indicators which would require additional primary data collection at this time.

We began searching for data using Statistics Canada, the national data collection agency that conducts a Census every five years and about 350 other surveys on a variety of social and economic aspects of Canadian life.[1] We searched Statistics Canada surveys for indicators that were comparable to those we identified in our environmental scan using key word searches and subject browsing. We also searched well-known organizations for agriculture- and food-related indicators (e.g., Food and Agriculture Organization of the United Nations, OECD Data) and well as other Canadian based organizations that collect data relevant to our report card.

We then classified all of the identified available indicators within the seven food sovereignty pillars, and recorded information regarding the source of

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1 Statistics Canada. (2016). Mandate and objectives. Retrieved from http://www.statcan.gc.ca/eng/about/mandate.

data, geographic scale, time line for data collection, most recent data points, and whether or not the indicator met all eight of the selection criteria. Certain indicator data was disaggregated across specific population groups to highlight the differential impact of historical and current policies. Finally, the data for the selected indicators was downloaded and organized in tabular format and graphical representations of the data were produced and are presented in Section 3: Available Indicator Data.

To acquire feedback on the indicators selected and the Food Counts Report Card, we consulted with a wide range of food systems researchers and practitioner networks through roundtable conversations and individual meetings. The feedback was incorporated into the report card. For example, several suggestions pointed to missing indicators which informed the search process and data collection as well as our wish list indicators.

Limitations

There are several limitations to this report card which are important to note:

• The potential privileging of scientific knowledge over traditional knowledge

• Budget constraints for accessing industry compiled data

• Reliance on Federal census data which is only collected every 5 years

• Limited availability of certain data at a national scale

Section 3: Available Indicator Data

Focuses on Food for People

This principle speaks to putting people's need for food at the centre of policies and insists that food is more than just a commodity

Summary of Indicators

Theme	Indicator	Status
Food access	1. Fruit & vegetable consumption	Getting worse
	2. Fruit & vegetable consumption by Aboriginal identity	One point in time data*
	3. Food availability	Mixed
	4. Food expenditures	Mixed
	5. Consumer price index	Getting worse
	6. Food waste	One point in time data*
	7. Food safety	Not improving
Poverty/ income	8. People living below the low income measure	Getting better
	9. Median annual family income	Mixed
	10. Unemployment rate	Getting better
	11. Food insecurity by household composition	Getting worse
	12. Food insecurity by Aboriginal identity	Getting worse
	13. Food bank use	Getting worse

*For this indicator we were only able to extract data from one point in time. We expect that this data will continue to be collected on a regular basis; therefore this current data point will act as the baseline for future reports.

Food Access Indicators

Indicator 1: Fruit and vegetable consumption, 5 servings or more per day
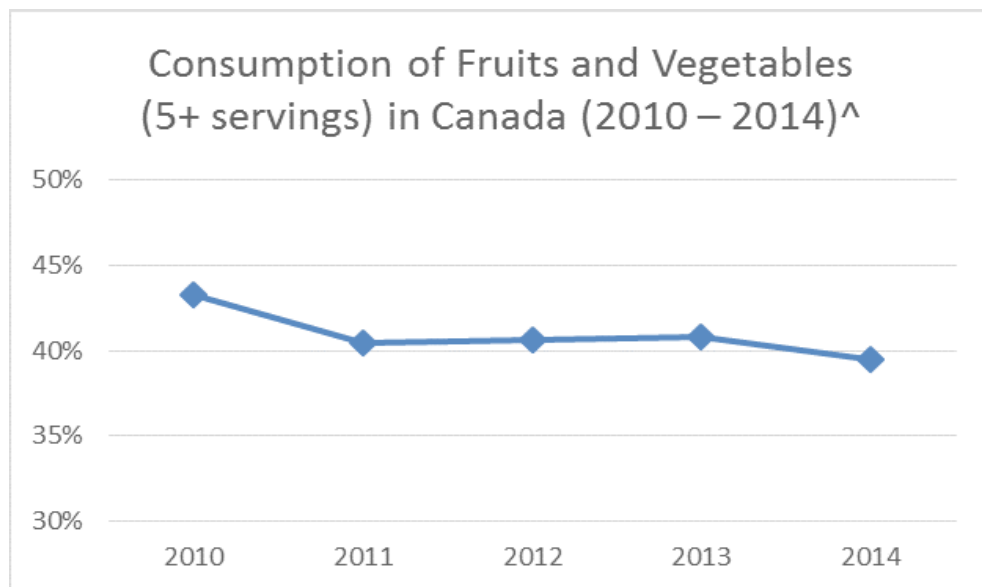
Consumption of Fruits and Vegetables
(5+ servings) in Canada (2010 − 2014)^

[Line chart showing percentage of population consuming 5+ servings of fruits and vegetables from 2010 to 2014. Y-axis ranges from 30% to 50%. Data points: 2010 ≈ 43.3%, 2011 ≈ 40.5%, 2012 ≈ 40.7%, 2013 ≈ 41%, 2014 ≈ 39.5%.]

Source: Statistics Canada, Canadian Community Health Survey
^ This data refers to the population 12 years of age and over. Certain exclusions apply (please see 'data specifics' for this indicator in Appendix B).

Interpretation of Findings: "**Getting worse**" - Between 2010 and 2014 there has been a gradual decrease in the proportion of individuals over the age of 12 consuming 5 or more servings of fruits and vegetables per day. In 2014, only 39.5% of individuals over the age of 12 consumed 5 or more servings of fruits and vegetables compared to 43.3% of individuals in 2010.

Indicator 2: Fruit and vegetable consumption, 5 servings or more per day by Aboriginal identity
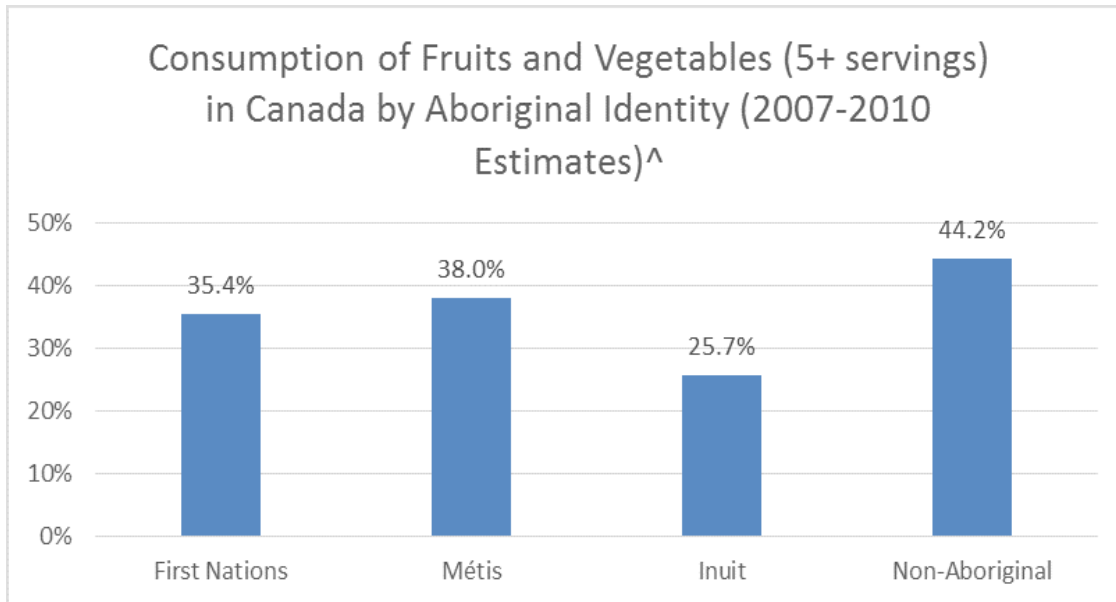
Consumption of Fruits and Vegetables (5+ servings) in Canada by Aboriginal Identity (2007-2010 Estimates)^

- First Nations: 35.4%
- Métis: 38.0%
- Inuit: 25.7%
- Non-Aboriginal: 44.2%

Source: Statistics Canada, Canadian Community Health Survey
^ This data refers to the population 12 years of age and over and does not include persons living on reserves and other Aboriginal settlements in the provinces (please see 'data specifics' for this indicator in Appendix B for more information).

Interpretation of Findings: "**One point in time data**" - First Nations, Metis and Inuit individuals were less likely to consume 5 or more servings of fruits and vegetables per day compared to non-Aboriginal individuals (35.4%, 38% and 25.7% respectively compared to 44.2%). Inuit individuals were the least likely to consume fruits and vegetables, with just over one quarter consuming 5 or more servings per day.

For additional reading on this indicator, please see:

Martin, D., & Amos, M. (2016). What constitutes good food? Towards a critical Indigenous perspective of food and health. In M. Koc, J. Sumner & A. Winson (Eds.), Critical perspectives in food studies (pp. 205-220). Toronto, Ontario: Oxford.

Indicator 3: Food availability (select categories)

Food Availability (Kilograms/Person) in Canada (2011 - 2015)
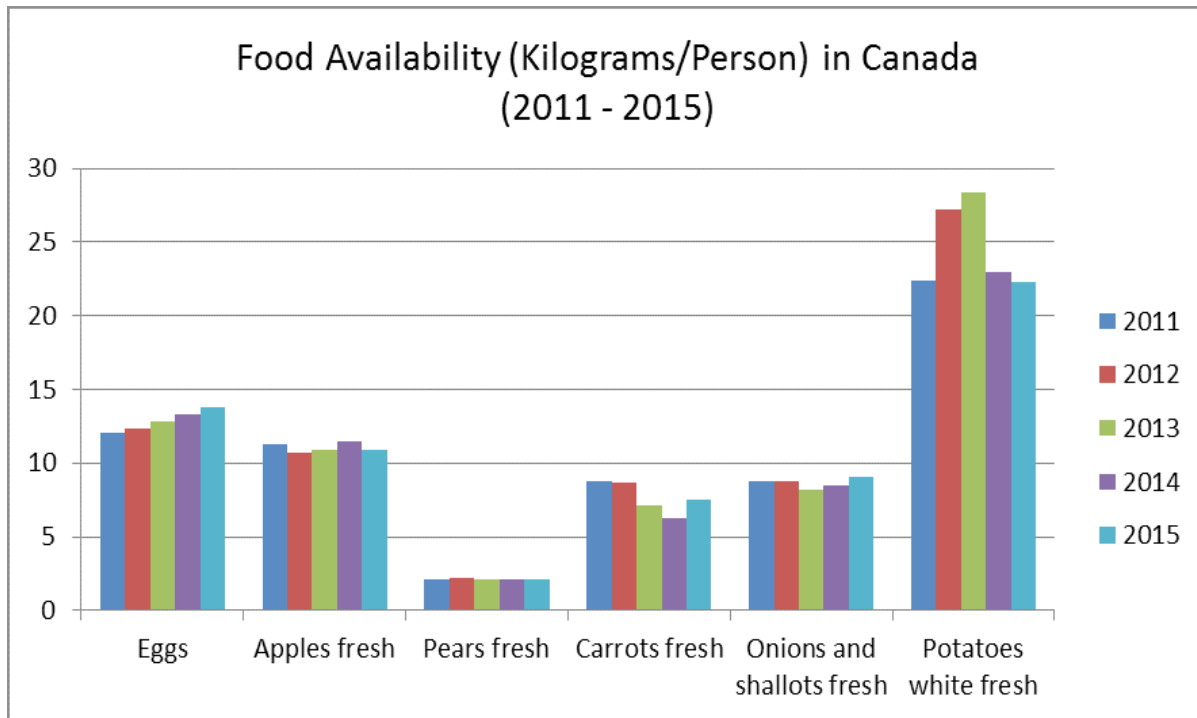
Source: Statistics Canada, compiled by Statistics Canada through various survey sources
Note: The food categories shown here were selected based on items that can be grown locally in Canada, although these food availability numbers reflect both locally grown and imported products.

Interpretation of Findings: "**Mixed**" – The results for 'Food Availability' depend on the food. For example, there is an increase in the availability of eggs, a decrease in the availability of potatoes and variation for other foods.

Indicator 4: Food expenditures

Annual Household Spending on Food in Canada (2010 - 2014)
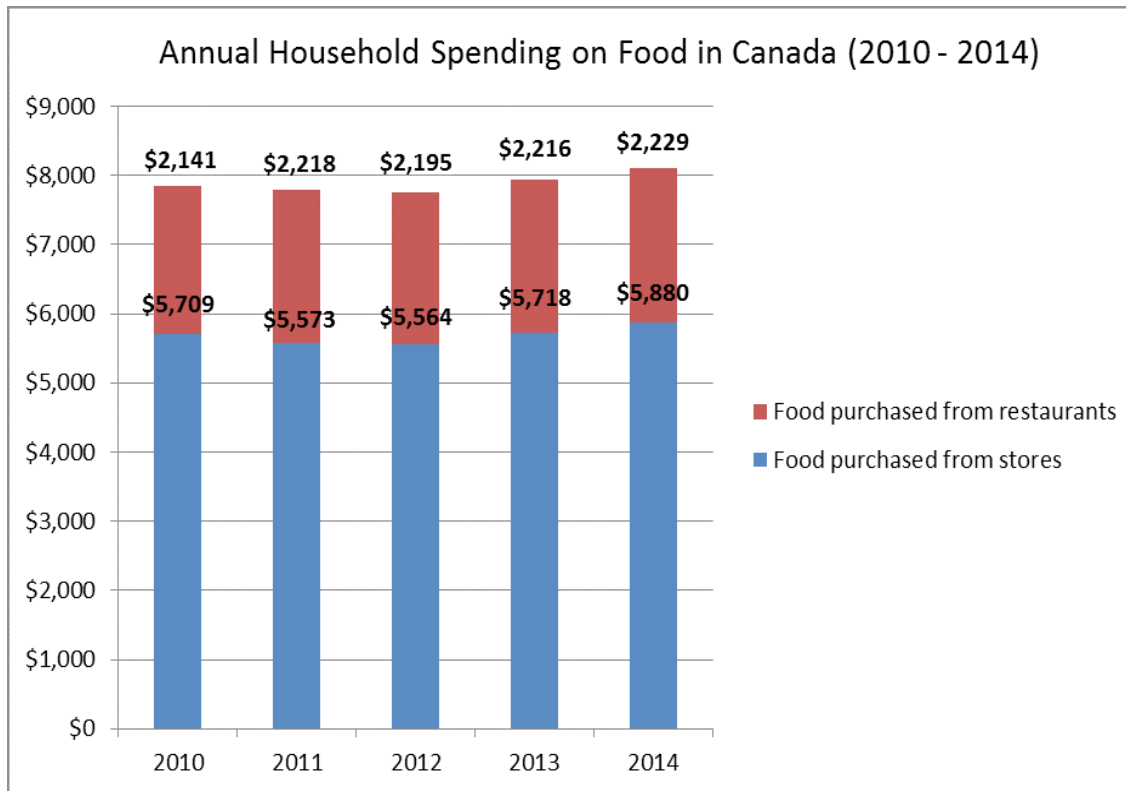
Source: Statistics Canada, Survey of Household Spending

Interpretation of Findings: "**Mixed**" – Canadian households spent an average of $8,109 a year on food in 2014 ($5,880 at stores and $2,229 at restaurants) which is slightly more than the average of $7,850 spent on food in 2010 ($5,709 at stores and $2,141 at restaurants). In 2010, $7,850 spent on food represented 11% of total household expenditures compared to $8,109 representing 10% of total household expenditures. It is difficult to ascertain whether these findings should be interpreted as positive or negative. For example, it may be a positive finding that Canadians are spending more money purchasing food from restaurants if those purchases are supporting local businesses, yet it may also reflect a greater reliance on highly processed, 'fast food' purchases. Moreover, figures suggesting Canadians are spending more on food overall may reflect higher food prices but this could represent a shift to food becoming increasingly prioritized as a family expense.

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Indicator 5: Consumer price index

Consumer Price Index in Canada (2011 - 2015)
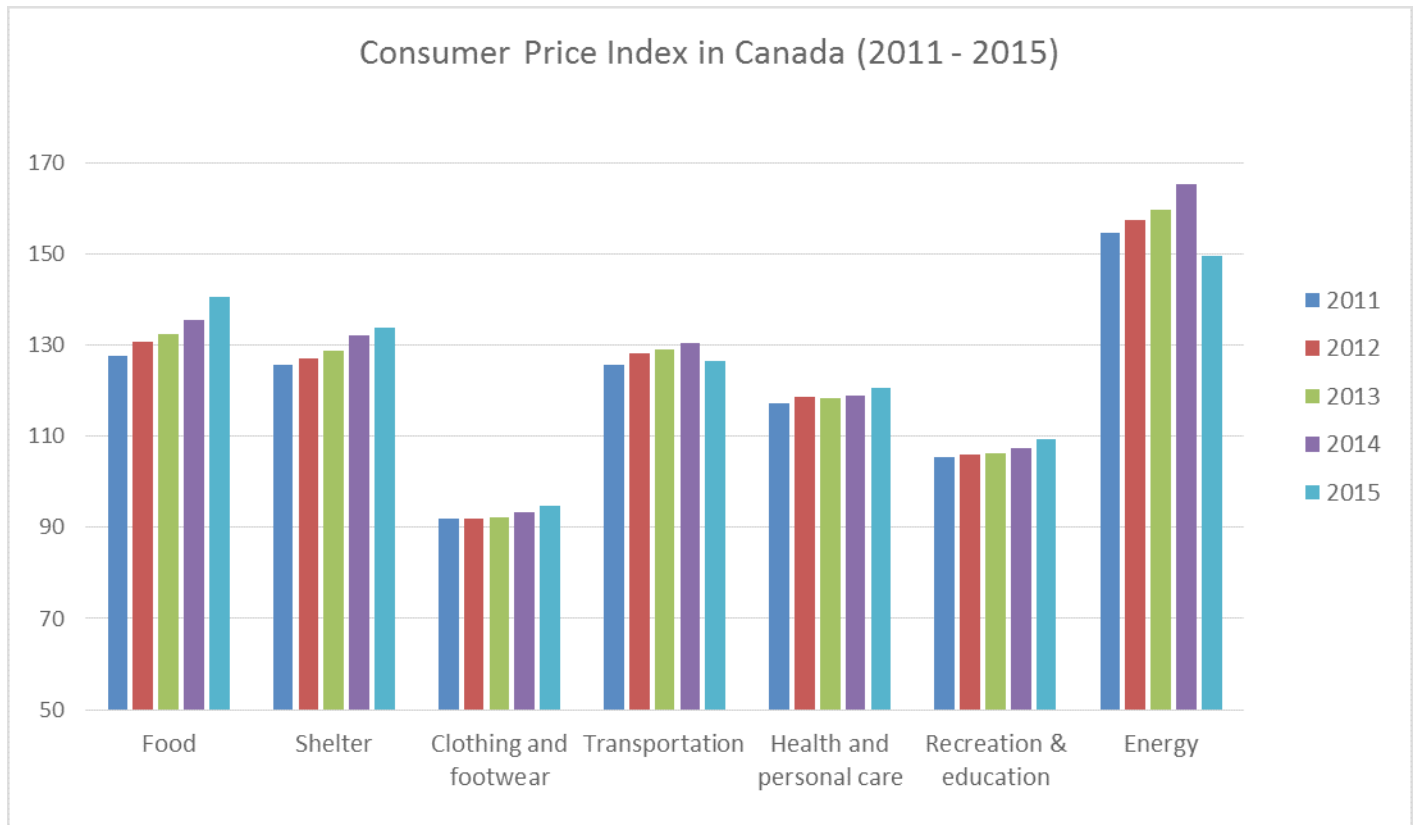
Source: Statistics Canada, Consumer Price Index

Interpretation of Findings: "Getting worse" – While the costs of many Consumer Price Index categories rose between 2011 and 2015, food saw the largest increase of any category. Specifically, the food category rose just under 13 points from 127.7 in 2011 to 140.5 in 2015. This is compared to an eight point increase for shelter costs, a three point increase for clothing and footwear costs, a one point increase for transportation costs, a three point increase for health and personal care costs, a four point increase for recreation and education costs and a 5 point decrease for energy costs between the years 2011 and 2015.

The Consumer Price Index is not a cost-of-living index. The objective behind a cost-of-living index is to measure changes in expenditures necessary for consumers to maintain a constant standard of living. The idea is that consumers would normally switch between products as the price relationship of goods changes. If, for example, consumers get the same satisfaction from drinking tea as they do from coffee, then it is possible to substitute tea for coffee if the price of tea falls relative to the price of coffee. The cheaper of the interchangeable products may be chosen. We could compute a cost-of-living index for an individual if we had complete information about that person's taste and spending habits. To do this for a large number of people, let alone the total population of Canada, is impossible. For this reason, regularly published price indexes such as the Consumer Price Index are based on the fixed-basket concept rather than the cost-of-living concept.

Indicator 6: Food waste

Distribution of Food Waste in Canada (2014)

Pie chart legend:
- On Farm: 10%
- Processing: 20%
- Transport and Distribution: 4%
- Restaurants and Hotels: 9%
- Retail: 10%
- Consumers: 47%
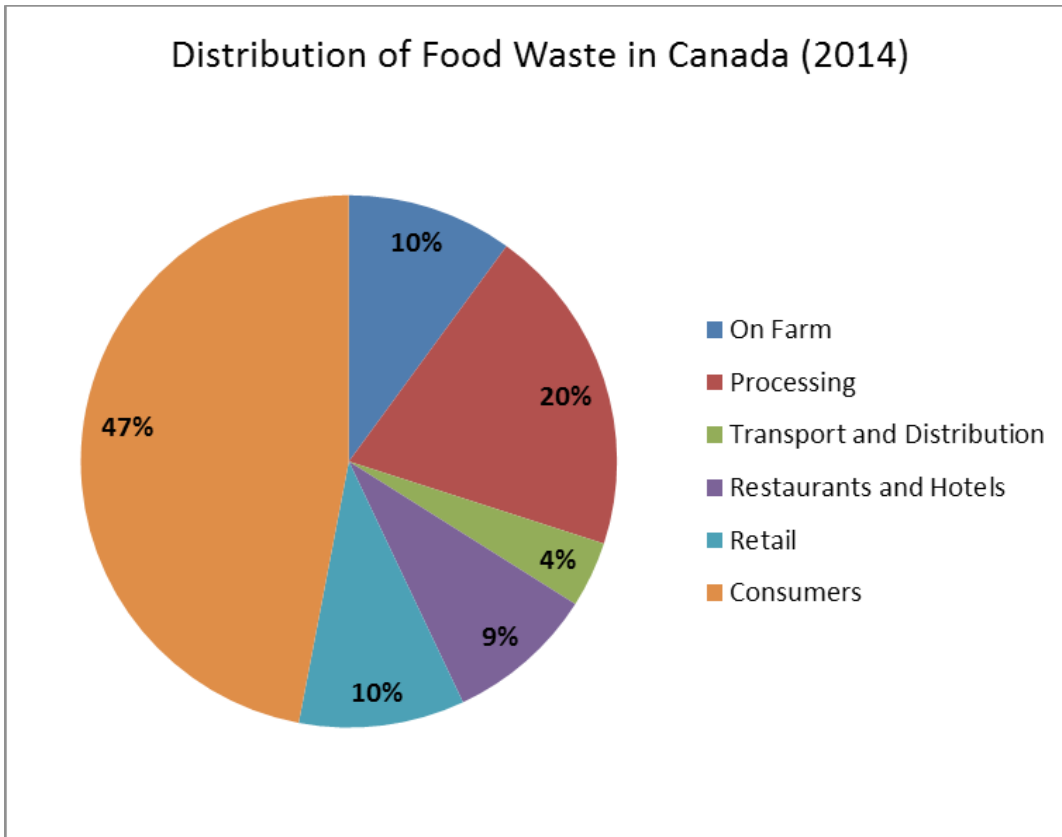
Source: Value Chain Management International, "$27 Billion" Revisited: The Cost of Canada's Annual Food Waste Report

Interpretation of Findings: "**One point in time data**" – As of 2014, the quantifiable value of food waste in Canada was estimated to be 31 billion dollars. This is distributed among a variety of sectors with food waste mostly occurring at the consumer level (47%), followed by food processing (20%), on farm (10%) and at the retail level (10%).

Indicator 7: Food safety

Food Recall Warnings in Canada (2013 - 2016)

Year	Class 1	Class 2	Class 3
2013	90	38	2
2014	118	35	3
2015	80	37	5
2016	111	36	8
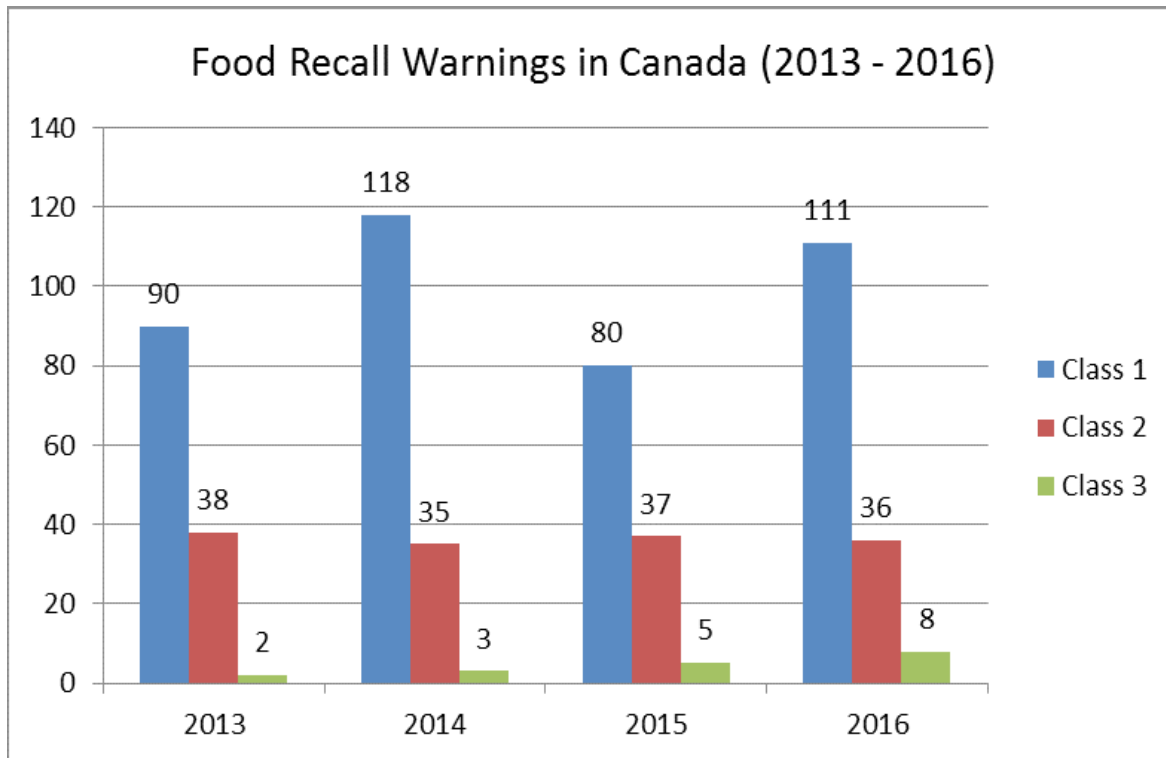
Source: Canadian Food Inspection Agency

Interpretation of Findings: "**Not improving**" – In order to assess food safety in Canada we collected data on the number of food recall warnings distributed to the public per year between 2013 and 2016. The Canadian Food Inspection Agency distributes warnings and has a three tiered classification system: Class I (high risk), Class II (moderate risk) or Class III (low and no risk). "Class I" is a situation in which there is a reasonable probability that the use of, or exposure to, a violative product will cause serious adverse health consequences or death. "Class II" is a situation in which the use of, or exposure to, a violative product may cause temporary adverse health consequences or where the probability of serious adverse health consequences is remote. "Class III" is a situation in which the use of, or exposure to, a violative product is not likely to cause any adverse health consequences. In 2013, the number of high risk (Class I) food recall warnings was 90 compared to 111 in 2016. The highest number of high risk food recalls occurred in 2014 (n=118) and the lowest in 2015 (n=80). The number of moderate risk (Class II) food recall warnings remained relatively stable between 2013 and 2016 while the number of low risk (Class III) food recall warnings increased during this time from 2 in 2013 to 8 in 2016.

For additional reading on this indicator, please see:

Martin, W., Muncdel, E., & Rideout, K. (2016). Finding balance: Food safety, food security and public health. In C. Anderson, J. Brady & C. Levkoe (Eds.), Conversations in food studies (pp. 168-190). Winnipeg, Manitoba: University of Manitoba Press.

Poverty/Income Indicators

Indicator 8: Families living below the low income measure
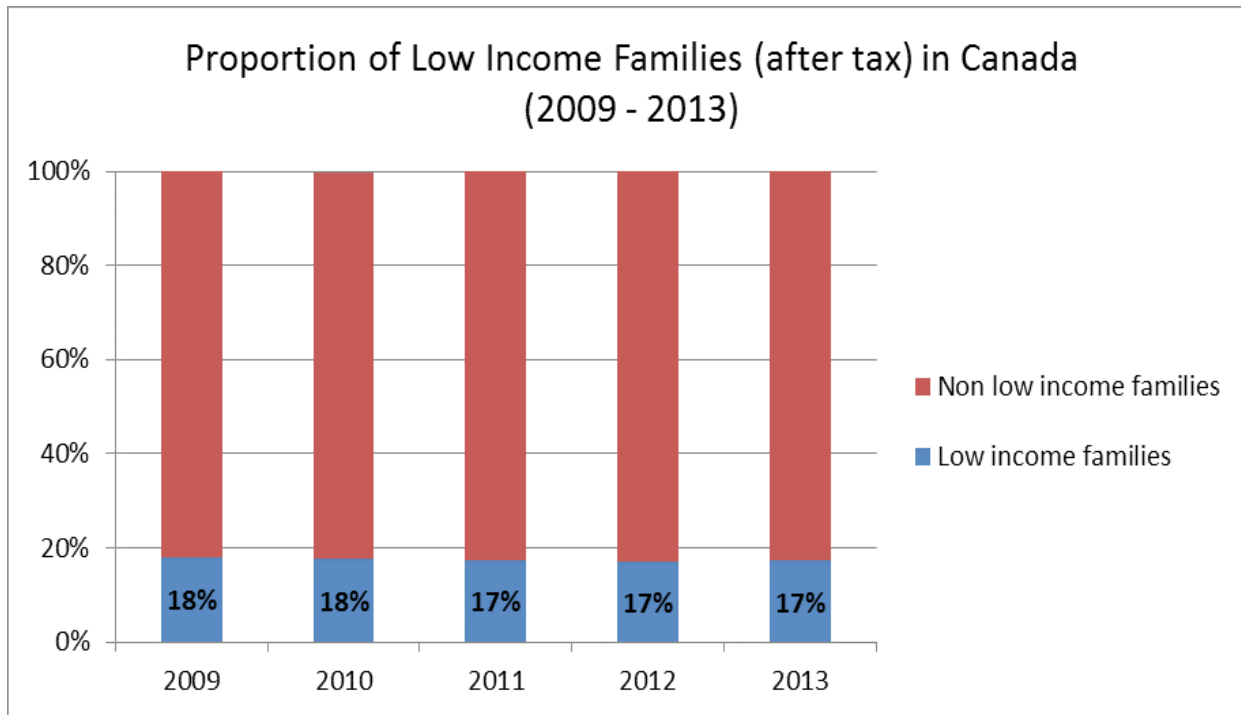
Proportion of Low Income Families (after tax) in Canada (2009 - 2013)

Source: Statistics Canada, Annual Income Estimates for Census Families and Individuals

Interpretation of Findings: "**Getting better**" – The proportion of families in Canada living below the after tax low income measure (LIM) has decreased from 18% in 2009 to 17% by 2013.

Indicator 9: Median annual family income
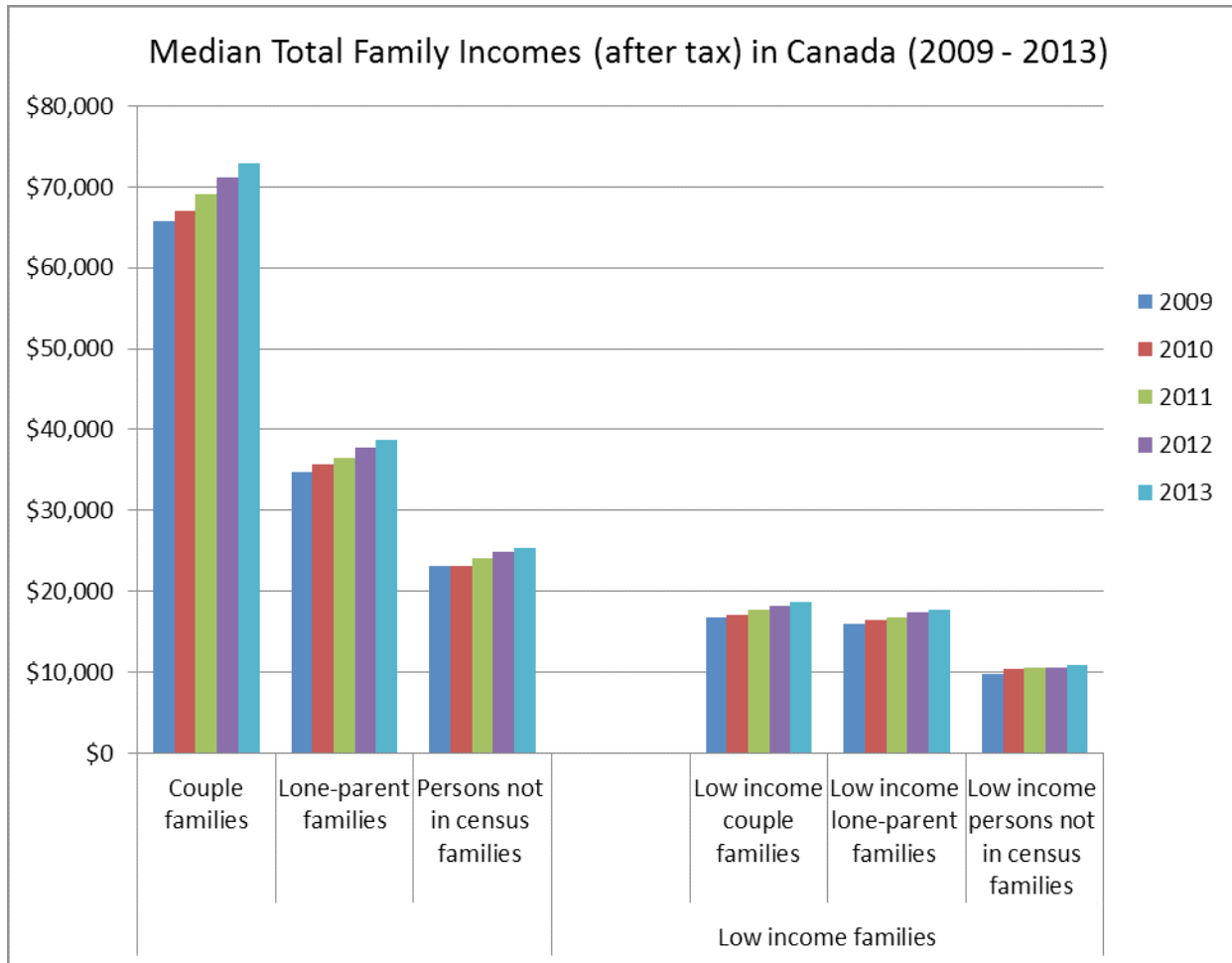
Median Total Family Incomes (after tax) in Canada (2009 - 2013)

Source: Statistics Canada, Annual Income Estimates for Census Families and Individuals

Interpretation of Findings: "**Mixed**" – Between 2009 and 2013 the median total family after tax incomes increased for all types of families. Couple families saw the most improvement with an annual median income increasing from $65,820 in 2009 to $72,930 by 2013, a percentage increase of 10.8%. Among low income families, low income persons not in census families saw the least improvement with an annual median income in 2009 of $9,850 increasing to $10,850 by 2013, a percentage increase of 9.2%. This is compared to a percentage increase of 9.5% for low income lone-parent families and a percentage increase of 10.4% for low income couple families. Since these increases in income do not account for inflation, we have categorized this as a mixed category. Please see Appendix A: Glossary of Terms for definitions of family types.

Indicator 10: Unemployment rate
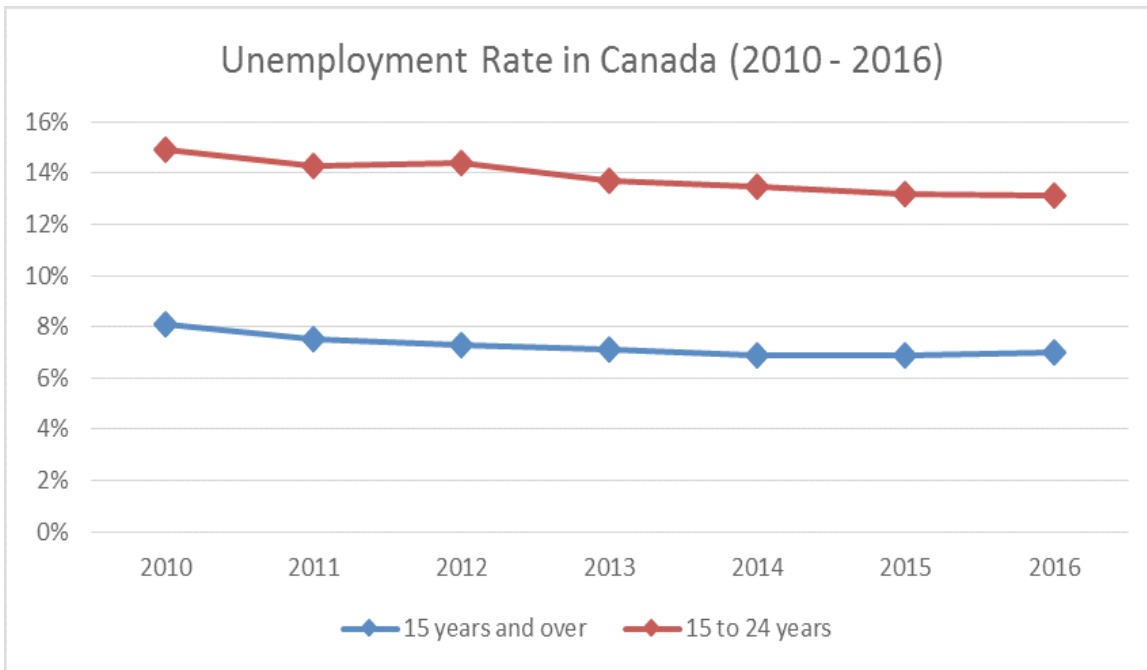
Unemployment Rate in Canada (2010 - 2016)

Source: Statistics Canada, Labour Force Survey

Interpretation of Findings: "**Getting better**" – The overall unemployment rate for adults 15 years of age and older has declined gradually from 8.1% in 2010 to 7.0% in 2016, which is a percentage decrease of 13.6%. For the specific age category of 15 to 24 years of age, the unemployment rate is higher at 13.1% (in 2016) but this has also gradually declined from 14.9% in 2010, which is a percentage decrease of 12.3%.

Indicator 11: Moderate and severe food insecurity by household composition
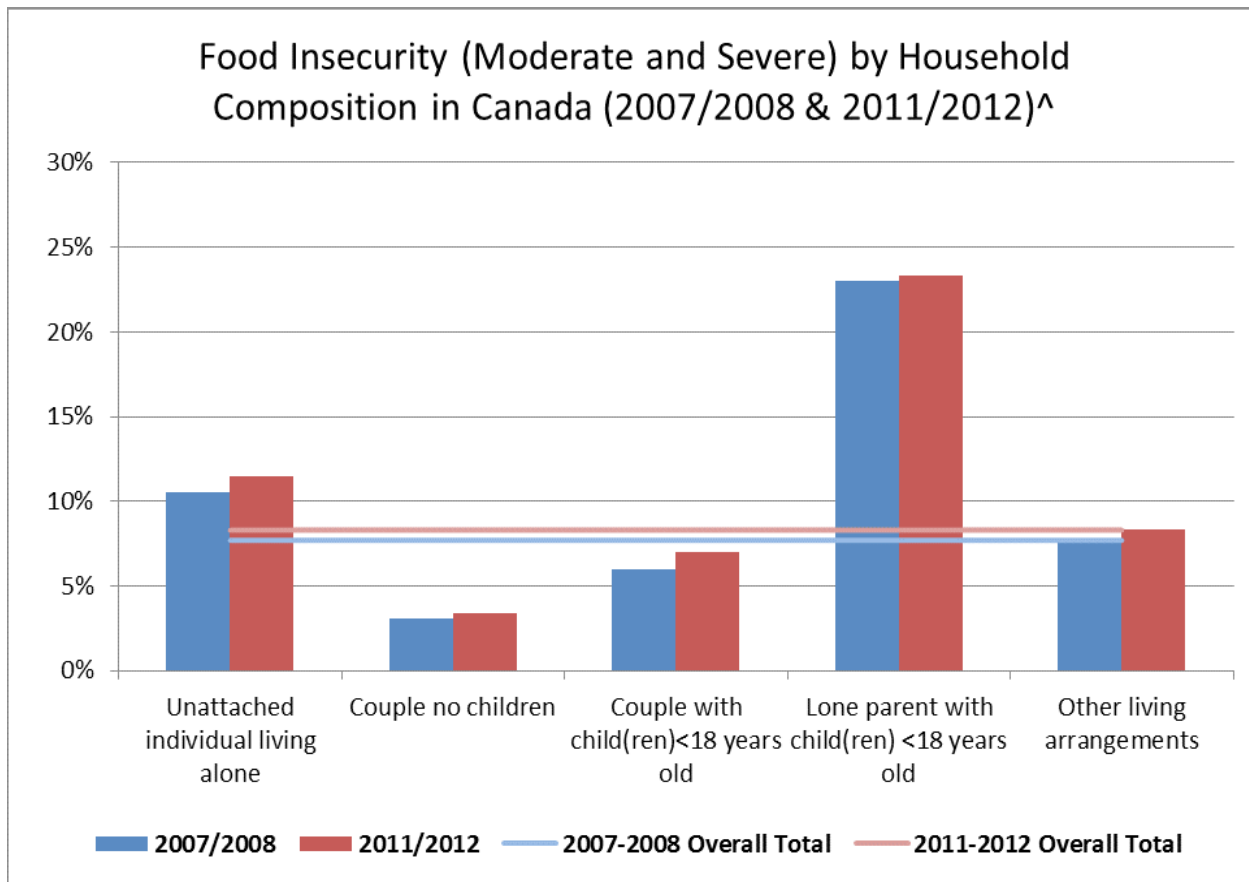
Food Insecurity (Moderate and Severe) by Household Composition in Canada (2007/2008 & 2011/2012)^

Legend: 2007/2008 | 2011/2012 | 2007-2008 Overall Total | 2011-2012 Overall Total

Source: Statistics Canada, Canadian Community Health Survey
^ Statistics Canada utilizes an 18 question Household Food Security Survey Module to assess household food insecurity and depending on the number of positive responses to these questions, classifies households as food secure, or moderately or severely food insecure. This data represents the combination of moderate and severe food insecurity in Canada. This data refers to the population 12 years of age and over which is why proportions refer to percentages of households experiencing food insecurity rather than number of individuals. It is also important to note that certain population exclusions apply (please see 'data specifics' for this indicator in Appendix B for more information).

Interpretation of Findings: "**Getting worse**" – The overall proportion of households who were food insecure (moderate or severe) increased from 7.7% in 2007/2008 to 8.3% in 2011/2012. Within each of the living arrangement categories, the proportion of households who experienced either moderate or severe food insecurity increased during this time period. Lone parent families were the most likely to experience food insecurity (23.3% in 2011/2012) while couples with no children were the least likely (3.4% in 2011/2012).

For more detailed information on food insecurity prevalence in Canada, including the prevalence of 'marginal food insecurity' and the prevalence of food insecurity among other specific groups, please see the PROOF reports and fact sheets which are available at http://proof.utoronto.ca.

Indicator 12: Moderate and severe food insecurity by Aboriginal identity

Food Insecurity (Moderate and Severe) by Aboriginal Identity in Canada (2012)^

First Nations: 20.8%
Métis: 14.5%
Inuit: 26.9%
Non-Aboriginal: 6.8%

Source: Statistics Canada, Canadian Community Health Survey
^ Statistics Canada utilizes an 18 question Household Food Security Survey Module to assess household food insecurity and depending on the number of positive responses to these questions, classifies households as food secure, or moderately or severely food insecure. This data represents the combination of moderate and severe food insecurity in Canada. This data refers to the population 12 years of age and over which is why proportions refer to percentages of households experiencing food insecurity rather than number of individuals. It is also important to note that this data does not include persons living on reserves and other Aboriginal settlements in the provinces (please see 'data specifics' for this indicator in Appendix B for more information).

Interpretation of Findings: "**One point in time data**" – First Nations, Metis and Inuit individuals were more likely to experience moderate or severe food insecurity compared to non-Aboriginal individuals (20.8%, 14.5% and 26.9% respectively compared to 6.8%). Individuals identifying as Inuit were the most likely to experience food insecurity (26.9%).
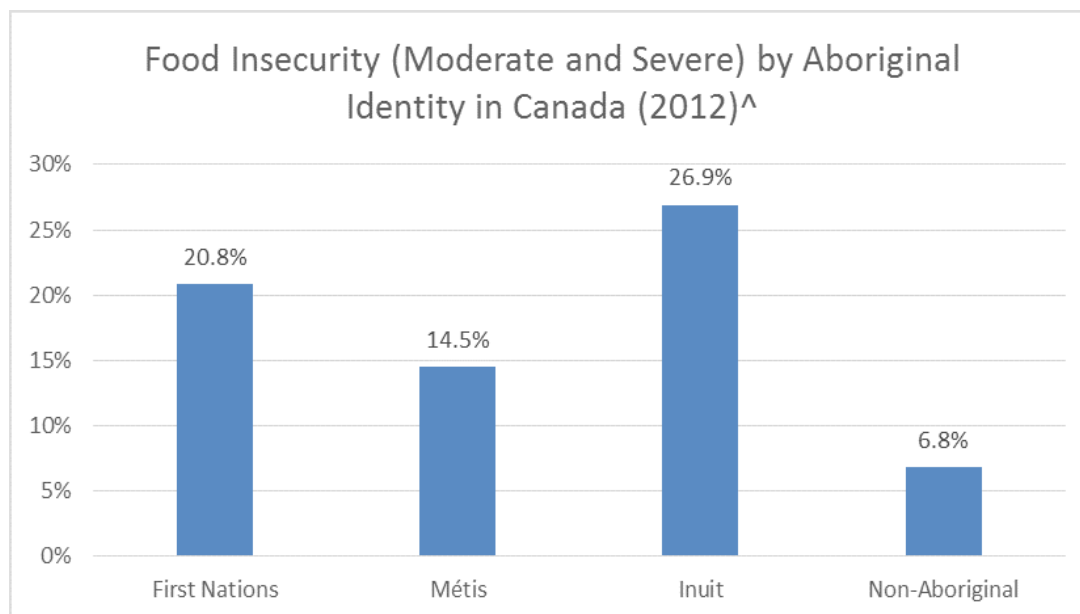
For additional reading on this indicator, please see:

Council of Canadian Academies, Expert Panel on the State of Knowledge of Food Security in Northern Canada. (2014). Aboriginal food security in Northern Canada: an assessment of the state of knowledge. Available at http://www.scienceadvice.ca/uploads/eng/assessments%20and%20publications%20and%20news%20releases/food%20security/foodsecurity_fullreporten.pdf.

Power, E. M. (2008). Conceptualizing food security for Aboriginal people in Canada. Canadian Journal of Public Health, 99(2), 95-97.

Socha, T., Zahaf, M., Chambers, L., Abraham, R., & Fiddler, T. (2012). Food security in a northern First Nations community: An exploratory study on food availability and accessibility. International Journal of Indigenous Health, 8(2), 5-14.

Wesche, S. D., O'Hare-Gordon, M. A. F., Robidoux, M. A., & Mason, C. W. (2016). Land-based programs in the Northwest Territories: Building Indigenous food security and well-being from the ground up. Canadian Food Studies, 3(2), 23-48.

Indicator 13: Number of individuals assisted by food banks

Food Bank Use in Canada (2008 to 2016)^

Y-axis: # of Individuals Assisted (0 to 1,000,000)

Data points:
- 2008: 675,735
- 2009: 675,735
- 2010: 867,948
- 2011: 861,775
- 2012: 872,379
- 2013: 833,098
- 2014: 841,191
- 2015: 852,137
- 2016: 863,492
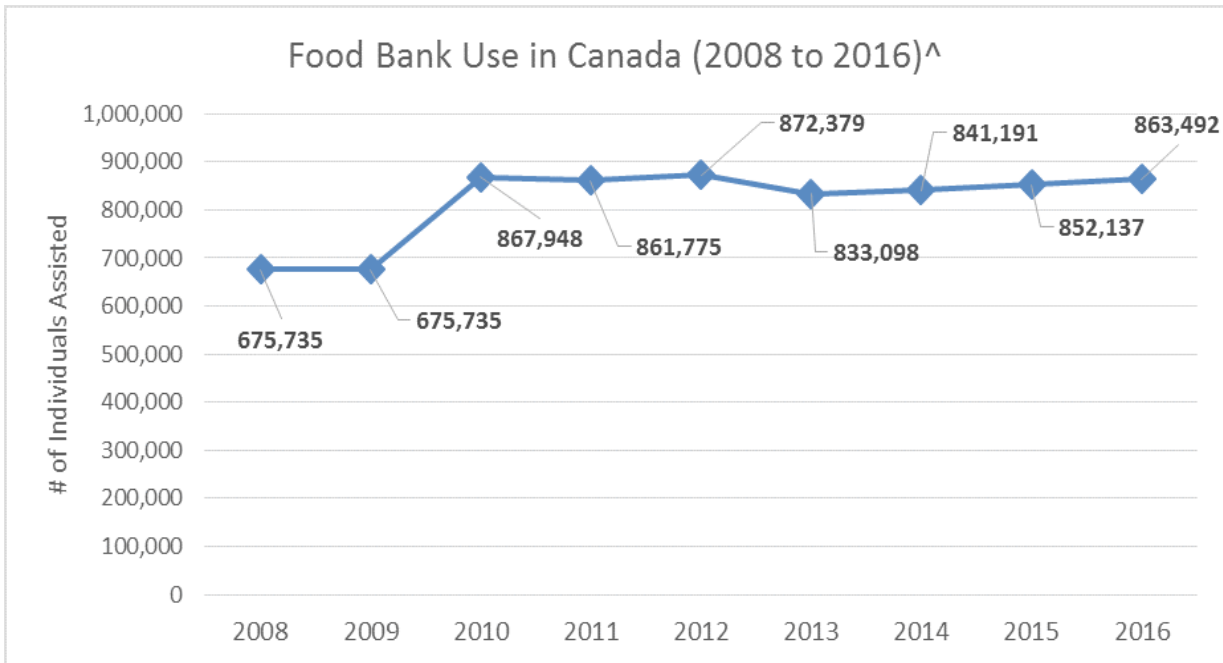
Source: Food Banks Canada, HungerCount Reports
^ This data reflects the numbers of individuals who accessed a food bank across Canada in the month of March for each year.

Interpretation of Findings: "**Getting worse**" – The number of individuals assisted by food banks has increased from 675,735 in 2008 to 863,492 in 2016, which is a percentage increase of 22%. Between 2008 and 2016, food bank use hit its peak in 2012 at 872,379 individuals assisted. In 2016, 36% of those assisted were children.

For more detailed information on food bank usage in Canada, including food bank usage by province/territory and among specific groups, please see Food Banks Canada's HungerCount reports which are available at https://www.foodbankscanada.ca/hungercount.

Values Food Providers

This principle speaks to respecting the work of all food providers and supporting sustainable livelihoods

Summary of Indicators

Theme	Indicator	Status
Farm characteristics	14. Number of farms	**Getting worse**
	15. Farm size	**Getting worse**
	16. Farm operating management	**Getting worse**
	17. Farm land tenure	**Getting worse**
	18. Type of farm	**One point in time data***
	19. Farms by commodities	**Mixed**
	20. Farm area use of land	**Mixed**
	21. Production of livestock	**Mixed**
	22. Production of poultry	**Mixed**
	23. Production of eggs	**Getting worse**
	24. Number of people employed in agriculture	**Mixed**
Farm profitability	25. Gross farm receipts	**Mixed**
	26. Net farm income	**Mixed**
	27. Farm debt	**Getting worse**
	28. Farm capital	**Getting better**
	29. Average hourly and weekly wages in agriculture	**Getting better**
	30. Household income class for farm population	**One point in time data***

Summary of Indicators Continued

Theme	Indicator	Status
Farm operator characteristics	31. Number of farm operators	**Getting worse**
	32. Age of farm operators	**Getting worse**
	33. Sex of farm operators	**Mixed**
	34. Country of birth of farm operators	**One point in time data***
	35. Farm operators with paid non-farm work	**Mixed**
	36. Farm operator activity in labour force	**One point in time data***
	37. Number of hours worked per week for farm operators	**One point in time data***
	38. Distribution of farm population by location	**One point in time data***
	39. Number of people in SAWP program	**Getting worse**
Food worker characteristics	40. Number of employees in food service, wholesale and manufacturing	**Mixed**
Farm safety	41. Agricultural fatalities	**Getting better**

*For this indicator we were only able to extract data from one point in time. We expect that this data will continue to be collected on a regular basis; therefore this current data point will act as the baseline for future reports.

Farm Characteristics Indicators

Indicator 14: Number of farms

Number of Farms in Canada (1991 - 2011)

280,043
276,548
246,923
229,373
205,730
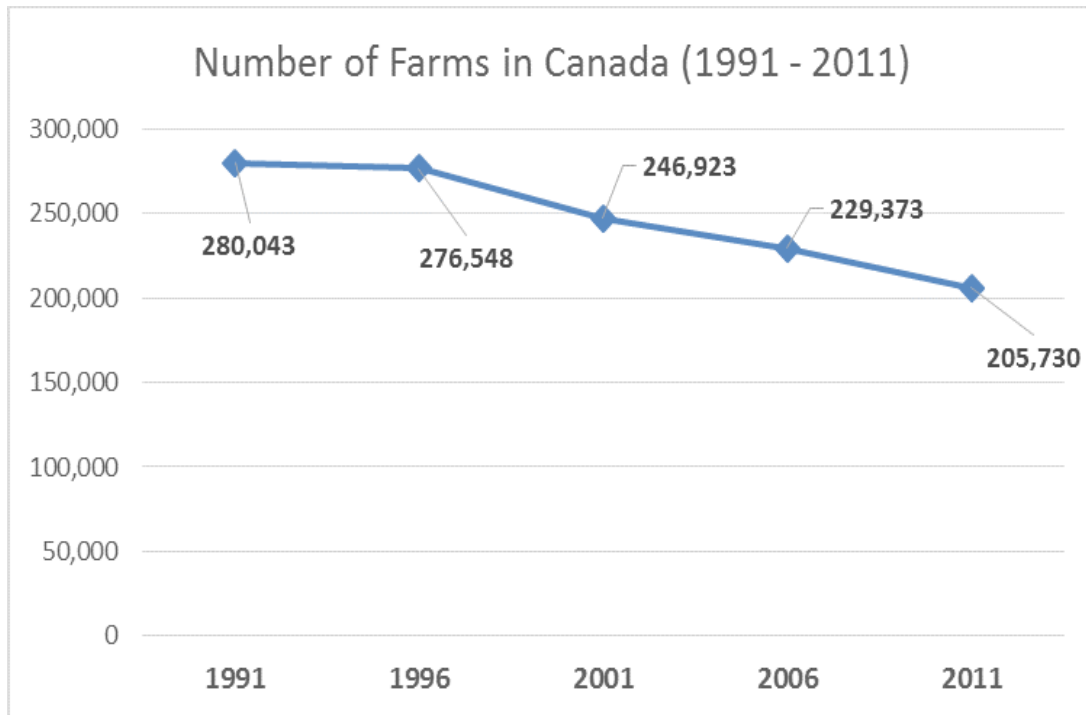
Source: Statistics Canada, Census of Agriculture

Interpretation of Findings: "**Getting worse**" – The overall number of farms has gradually declined over the last two decades from 280,043 farms in 1991 to 205,730 in 2011.

Indicator 15: Number of farms by size
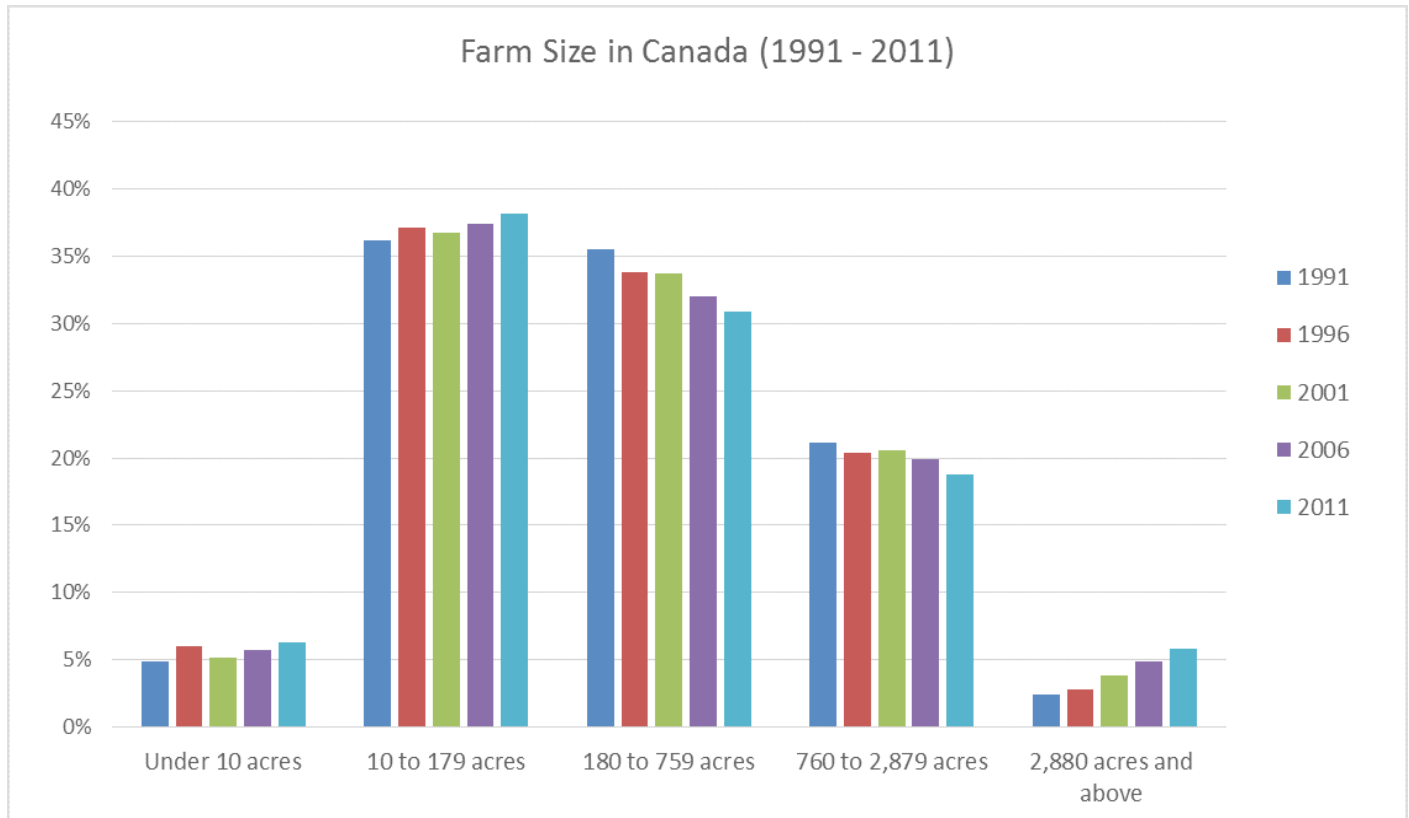
Farm Size in Canada (1991 - 2011)

Source: Statistics Canada, Census of Agriculture

Interpretation of Findings: "Getting worse" – The average farm size has increased from 676 acres in 2001 to 778 acres in 2011. The distribution of farms by size has changed between this same time period. The proportion of the smallest farms, sized under 10 acres, has slightly increased over this time period as well as the proportion of farms sized 10 to 179 acres. The proportion of those farms sized 180 to 759 acres and 760 to 2,879 have slightly declined between 1991 to 2011. The most significant change has been in the proportion of the largest farms, sized 2880 acres and above. Between 1991 and 2011, the proportion of these farms has more than doubled.

Indicator 16: Number of farms by operating arrangement
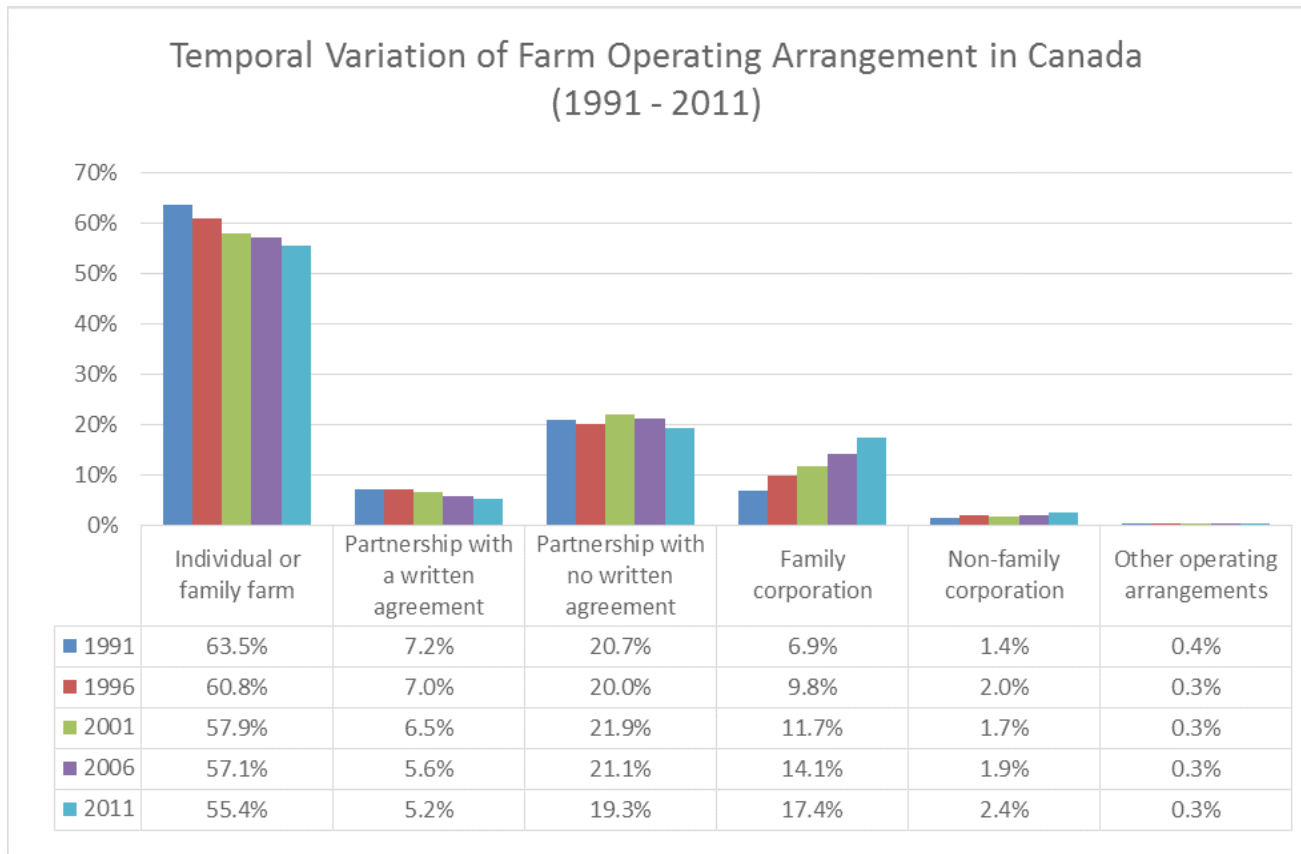
Temporal Variation of Farm Operating Arrangement in Canada (1991 - 2011)

	Individual or family farm	Partnership with a written agreement	Partnership with no written agreement	Family corporation	Non-family corporation	Other operating arrangements
1991	63.5%	7.2%	20.7%	6.9%	1.4%	0.4%
1996	60.8%	7.0%	20.0%	9.8%	2.0%	0.3%
2001	57.9%	6.5%	21.9%	11.7%	1.7%	0.3%
2006	57.1%	5.6%	21.1%	14.1%	1.9%	0.3%
2011	55.4%	5.2%	19.3%	17.4%	2.4%	0.3%

Source: Statistics Canada, Census of Agriculture

Interpretation of Findings: "Getting worse" – Shifts in the operating agreements of farms occurred between 1991 and 2011. The proportion of individual or family owned farms decreased from 63.5% of all farms in 1991 to 55.5% of all farms in 2011. During the same period, the proportion of farms owned by a family corporation increased from 6.9% to 17.4% of all farms. The proportion of partnership farms, with or without a written agreement, decreased between 2001 and 2011, while the proportion of non-family corporations increased from 1.4% in 1991 to 2.4% in 2011.

Indicator 17: Farm land tenure

Farmland Tenure in Canada (2006 - 2011)^

- 66.1% (2006, Area owned)
- 64.6% (2011, Area owned)
- 39.0% (2006, Area rented or leased from others)
- 40.5% (2011, Area rented or leased from others)

Legend: Area owned — Area rented or leased from others
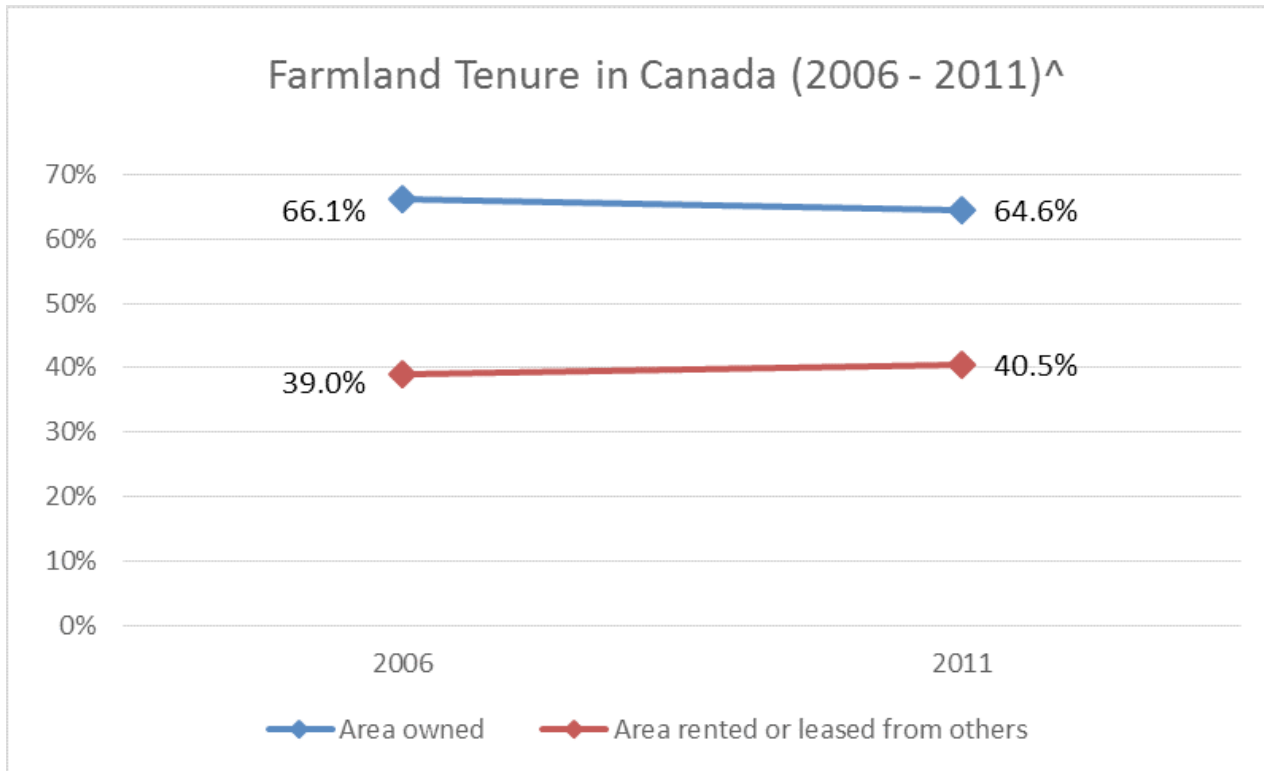
Source: Statistics Canada, Census of Agriculture
^ The proportion of area owned and area leased does not add to 100% due to the total farm area being the difference between "total area of all land tenures" minus "total area used by others". Please see the Census of Agriculture survey for more information.
^ Area rented or leased from others includes the "Area leased from governments" as well as the "Area crop shared from others", the area "Rented or leased from others" and "Other areas used by this operation."

Interpretation of Findings: "**Getting worse**" – The proportion farm area owned decreased from 66.1% in 2006 to 64.6% in 2011, while the area rented or leased from others increased from 39% in 2006 to 40.5% in 2011.

Indicator 18: Type of farm

Farm Type in Canada in 2011^

- Dairy cattle and milk production 6%
- Hog and pig farming 2%
- Sheep and goat farming 2%
- Beef cattle ranching and farming, including feedlots 18%
- Other animal production 12%
- Poultry and egg production 2%
- Soybean farming 3%
- Other crop farming 6%
- Oilseed (except soybean) farming 8%
- Hay farming 12%
- Dry pea and bean farming 1%
- Wheat farming 4%
- Greenhouse, nursery and floriculture production 4%
- Corn farming 3%
- Fruit and tree-nut farming 4%
- Vegetable and melon farming 2%
- Other grain farming 11%

Source: Statistics Canada, Census of Agriculture
^ This data is based on the total number of farms using the North American Industry Classification System categories. Each census farm is classified according to the commodity or group of commodities that accounts for 50% or more of the total potential receipts.

Interpretation of Findings: "One point in time data" – As of 2011, the largest proportion of farms fell into the category of beef cattle ranching and farming which includes feedlots (18%) followed by 'other' animal production (12%), hay farming (12%), and 'other' grain farming (11%).

Indicator 19: Farms by commodities sold

Farms by Commodities Sold in Canada (1991 - 2011)^
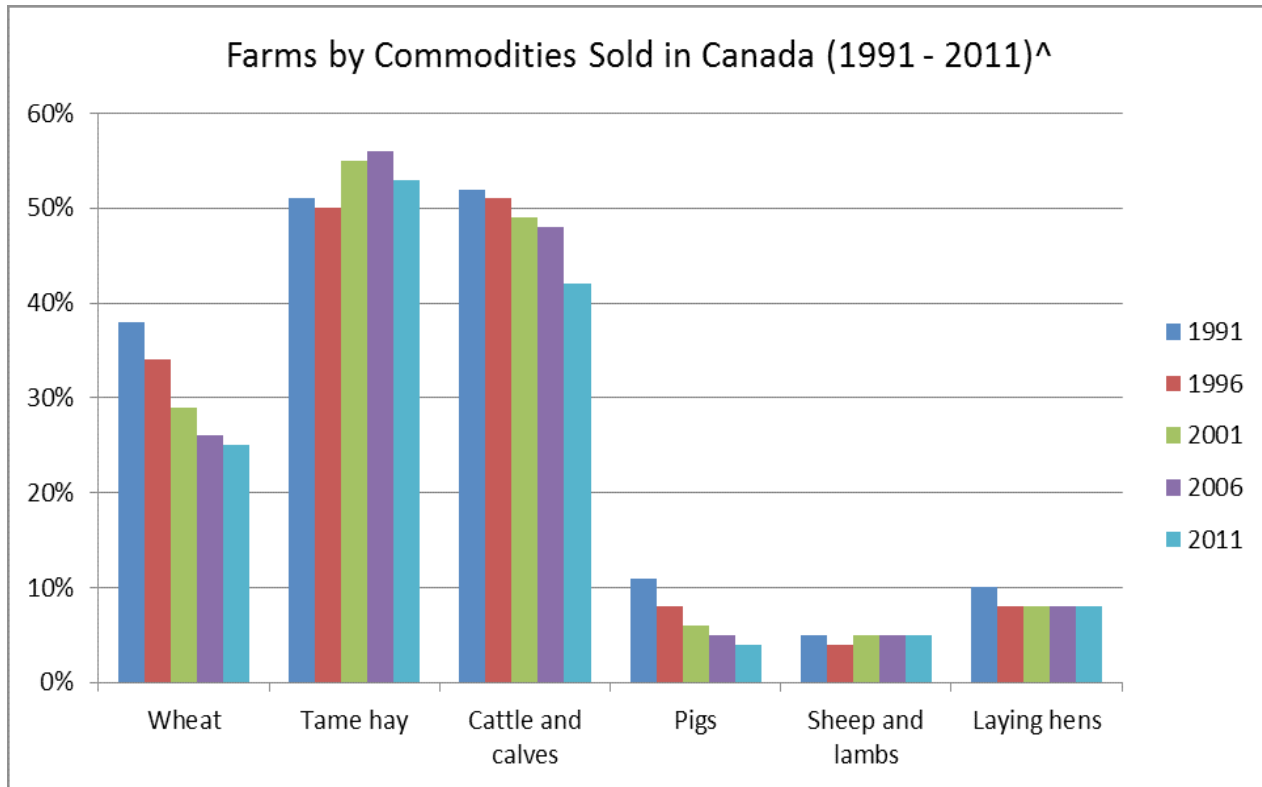
Source: Statistics Canada, Census of Agriculture
^Totals do not add up to 100% because farms could report more than one commodity sold.

Interpretation of Findings: "**Mixed**" – Between 1991 and 2011 the proportion of farms reporting the sale of wheat fell drastically from 38% in 1991 to 25% in 2011. The proportion of farms reporting the sale of cattle and calves also decreased from 52% in 1991 to 42% in 2011. In 2011, only four percent of farms reported the sale of pigs compared to 11% in 1991. The proportion of farms reporting the sale of tame hay, sheep and lambs as well as laying hens remained relatively consistent throughout this time period. This indicator reflects variation in demand and prices as well as disease (e.g. Mad Cow disease and the closing of the US borders to Canadian cattle).

Indicator 20: Farm area use of land

Use of Farm Land in Canada (1991 - 2011)
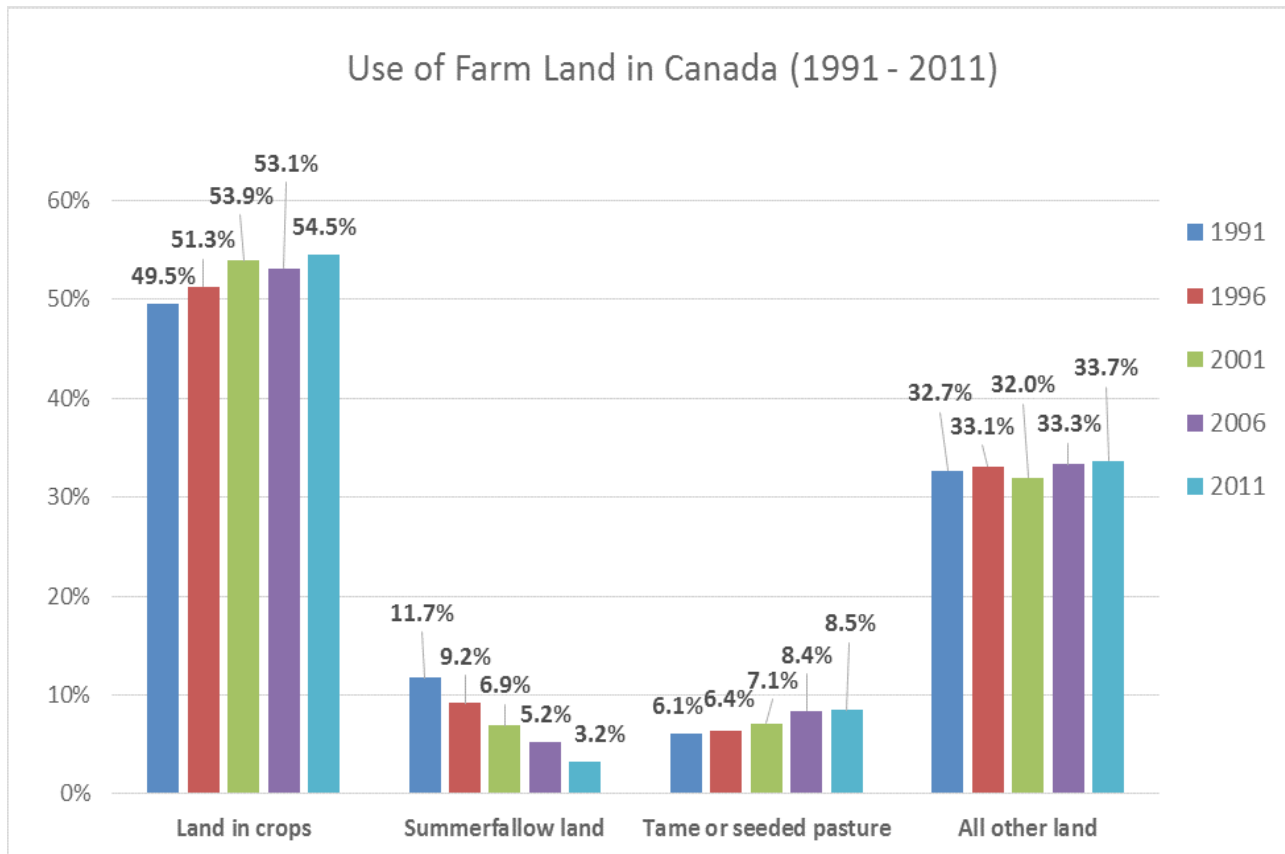
Source: Statistics Canada, Census of Agriculture

Interpretation of Findings: "**Mixed**" – There have been notable changes in farm area use of land between 1991 and 2011. The proportion of land in crops increased from 49.5% in 1991 to 54.5% in 2011 and the proportion of land used for tame or seeded pasture also increased within this time period (6.1% in 1991 to 8.5% in 2011). The proportion of summerfallow land has decreased from 11.7% in 1991 to 3.2% in 2011. The proportion of land used for all other purposes has remained relatively stable between these years. A decrease in summerfallow land suggests less land resting between planting and harvest cycles. Increased pasture means more land is not disturbed by ploughing annually and that roots under the pasture are able to sequester carbon.

Indicator 21: Production of livestock

**Total Slaughterings of Livestock in Canada (x 1,000)
(2010 - 2014)**

Legend: ■ Cattle and calves ■ Hogs ■ Sheep and lambs
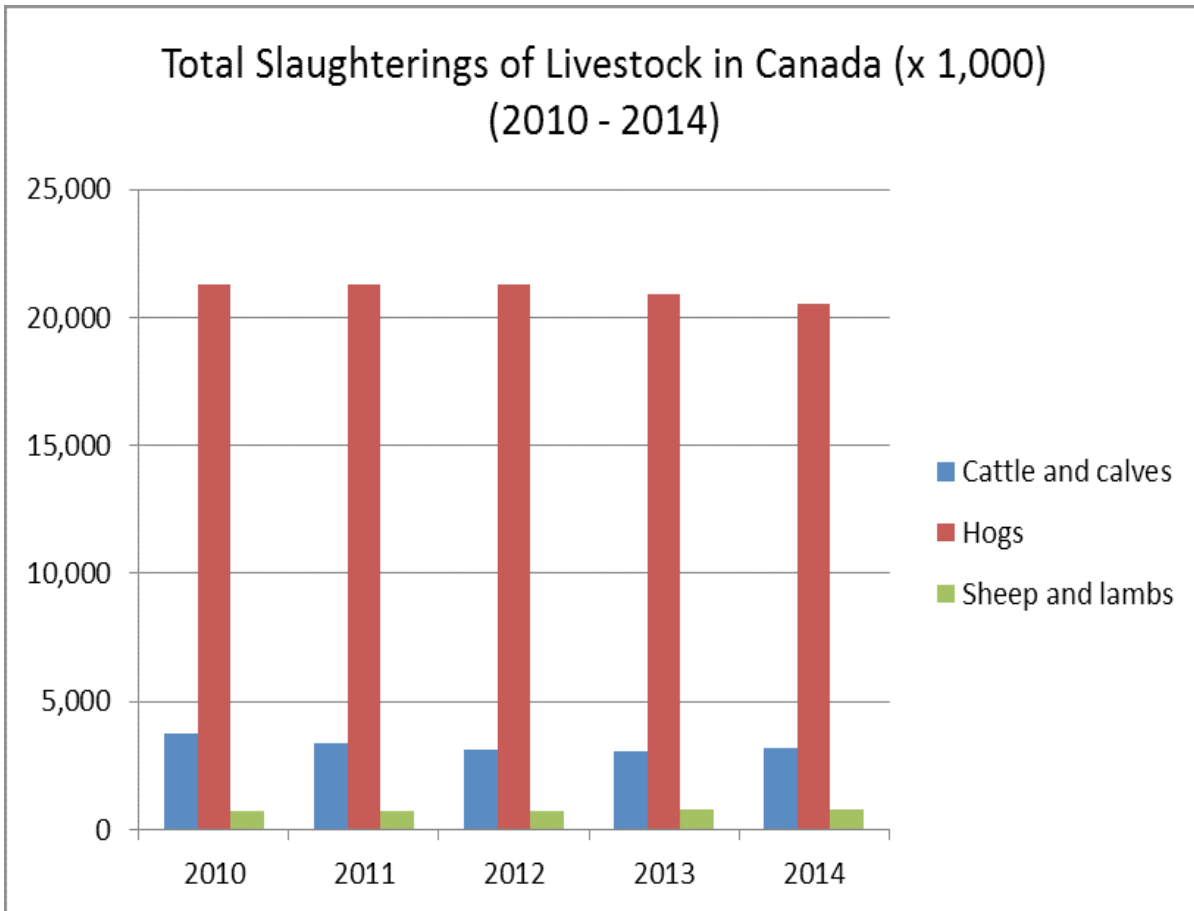
Source: Statistics Canada, Livestock Survey

Interpretation of Findings: "**Mixed**" – Cattle and calves, as well as sheep and lambs are fairly constant. Hogs declined in large part due to falling commodity prices. Given the demands of livestock for feed and as producers of manure, falling numbers can be a positive trend for more sustainable diets and environmental pressures.

Indicator 22: Production of poultry
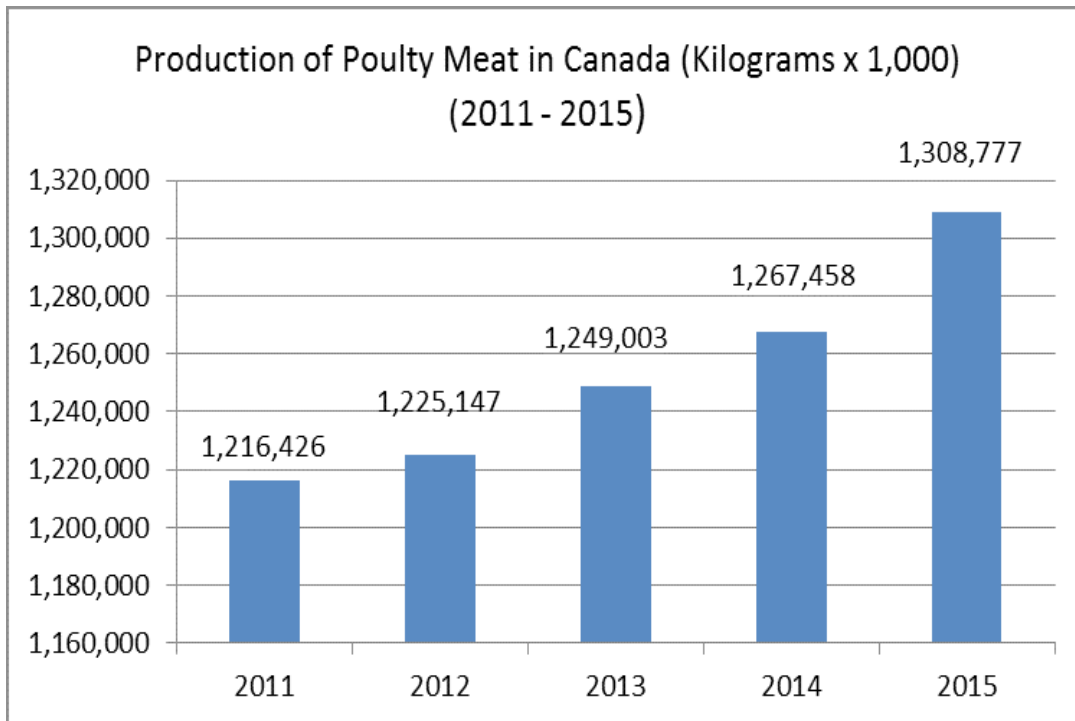
Production of Poulty Meat in Canada (Kilograms x 1,000)
(2011 - 2015)

Year	Production
2011	1,216,426
2012	1,225,147
2013	1,249,003
2014	1,267,458
2015	1,308,777

Source: Statistics Canada, Production of Poultry and Eggs

Interpretation of Findings: "**Mixed**" – While poultry production is more sustainable than beef production, poultry farming often occurs in cramped cages with low genetic diversity and the associated disease pressures. As a result, the increase in poultry production between 2011 and 2015 demonstrates both positive and negative impacts.

Indicator 23: Production of eggs
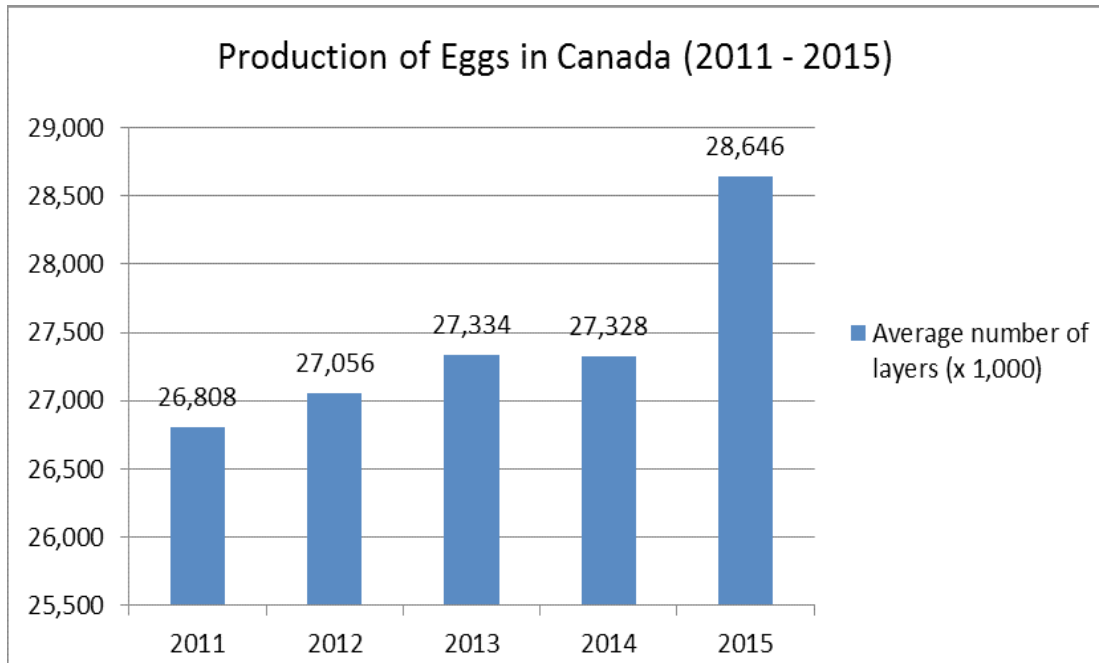
Production of Eggs in Canada (2011 - 2015)

Source: Statistics Canada, Production of Poultry and Eggs

Interpretation of Findings: "**Getting worse**" – The average number of layers per operation (registered flocks, non-registered flocks and hatchery supply flocks) has increased from 26,808 in 2011 to 28,646 in 2015. This is a cause for concern as it indicates an increased concentration of layers (i.e, more large, industrial operations).

Indicator 24: Number of people employed in agriculture

Number of People Employed in Agriculture (persons x 1,000) in Canada (2010 - 2016)^
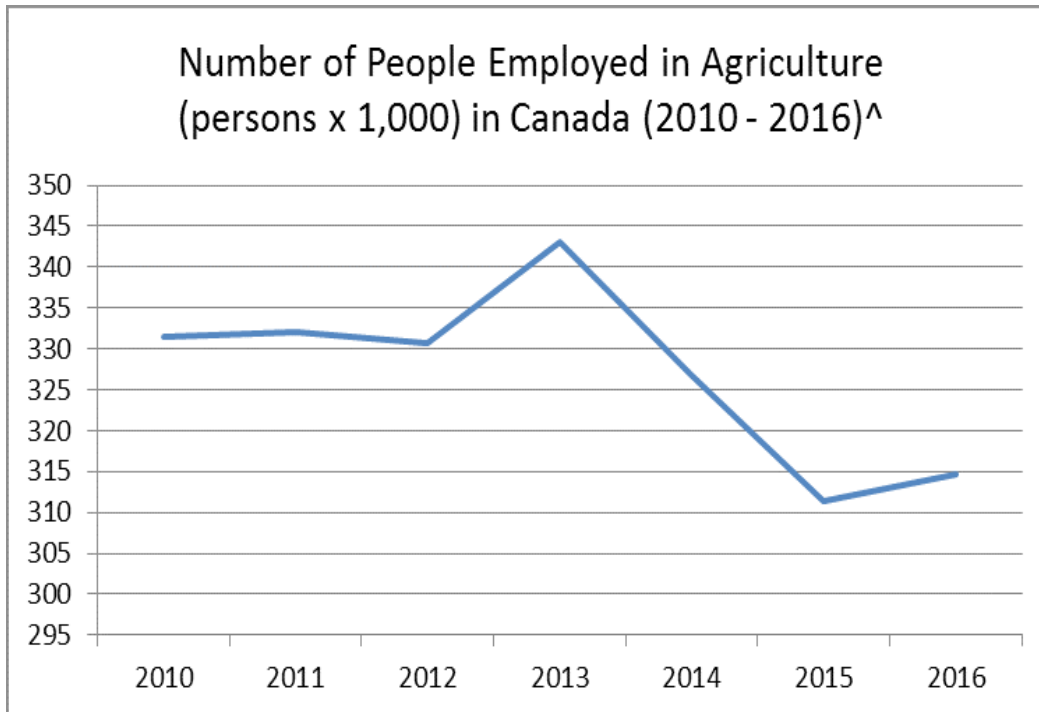
Statistics Canada, Labour Force Survey
^The data depicted represent the number of individuals employed in agriculture in the month of August of each year (unadjusted for seasonal variation)

Interpretation of Findings: "**Mixed**" – The number of people employed in agriculture has varied over the years. In 2016, there were 314,600 people employed in agriculture compared to 331,500 six years earlier in 2010. After a large decrease in the number of people working in agriculture between 2013 and 2015, we see an increase between 2015 and 2016.

Farm Profitability Indicators

Indicator 25: Proportion of farms classified by total gross farm receipts

Gross Farm Receipts in Canada (1991 - 2011)^
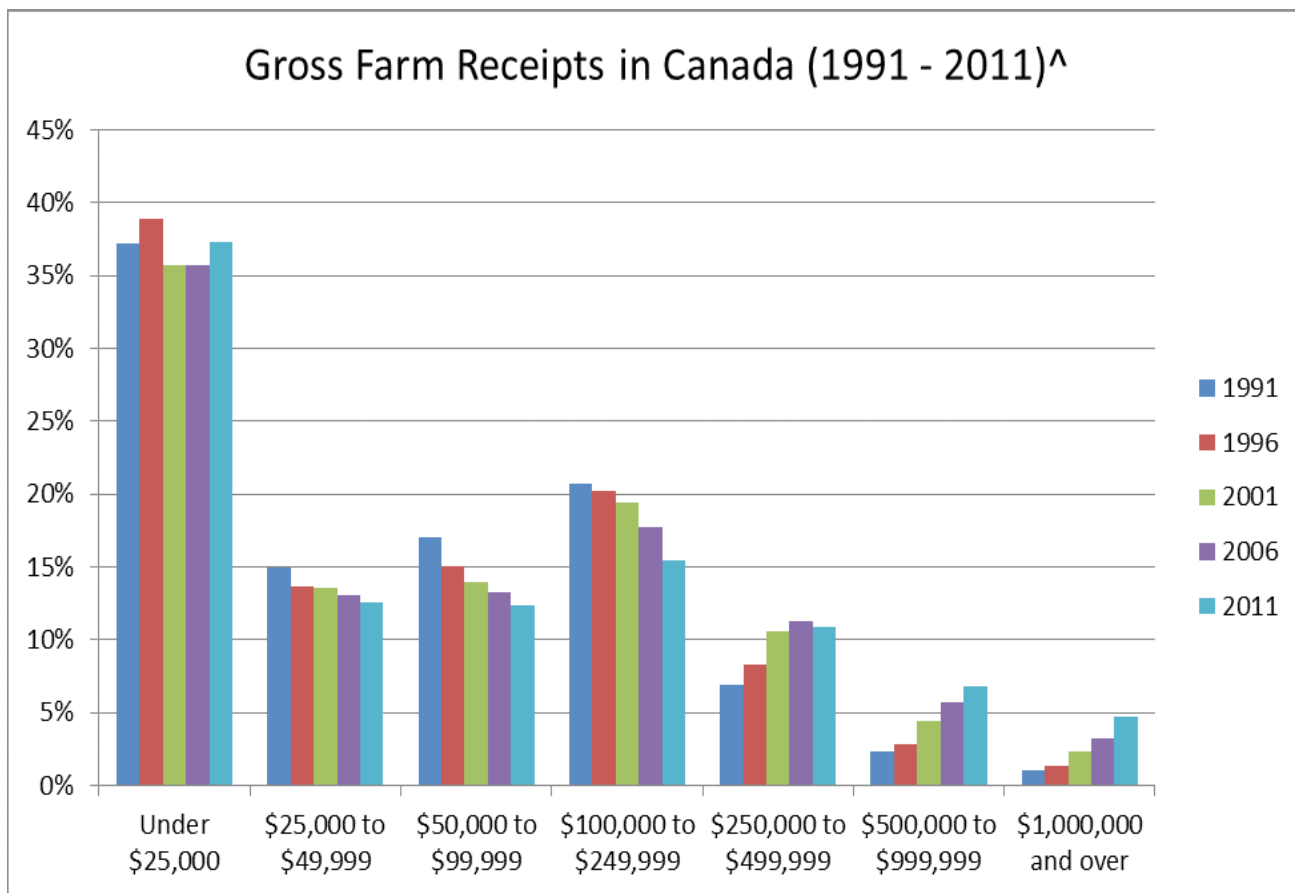
Source: Statistics Canada, Census of Agriculture
^Gross farm receipts include revenues from the sale of agricultural commodities, program payments from government agencies, and payments from private crop and livestock insurance programs.

Interpretation of Findings: "Mixed" – The proportion of farms classified by the various gross farm receipts categories has varied between 1991 and 2001, with increases in the proportion of farms in some categories (e.g., farm receipts over $1,000,000) and decreases in the proportion of farms in other categories (e.g., $100,000 to $249,999). Of note, and cause for concern, is the proportion of farms which report gross farm receipts of under $25,000 per year. At least one-third of farms have fallen within this category over the last 20 years. Specifically, in 2011, 37.4% of farms received less than $25,000 per year in gross farm receipts. It is important to note that operating expenses (i.e., business costs incurred by farm businesses for good and services used in the production of agricultural commodities) have not been deducted from gross farm receipt figures.

Indicator 26: Net farm income

Net Farm Income in Canada (2011 - 2015)
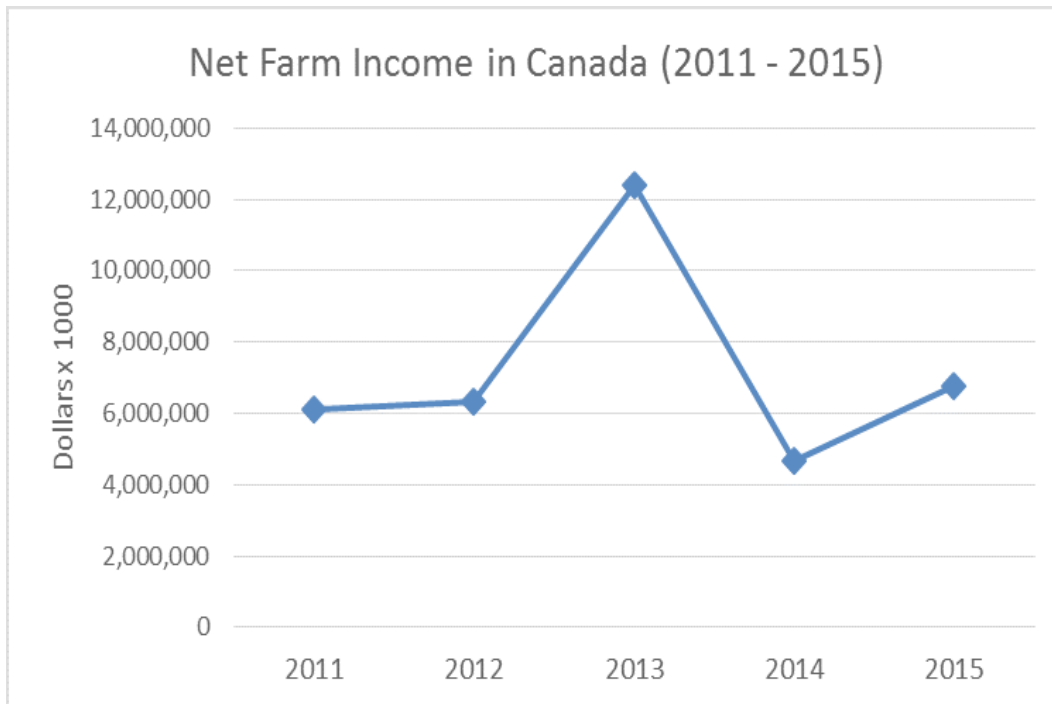
Source: Statistics Canada, Agriculture Economic Statistics

Interpretation of Findings: "**Mixed**" – Net farm income in Canada between 2011 and 2015 has varied, peaking in 2013 at just over 12 billion dollars.

For additional reading on this indicator, please see:

Qualman, D. (2011). Advancing agriculture by destroying farms? The state of agriculture in Canada. In H. Whitman, A. A. Desmarais & N. Wieb (Eds.), Food sovereignty in Canada: creating just and sustainable food systems (pp. 20-21). Halifax, Nova Scotia: Fernwood Press.

Indicator 27: Farm debt

Farm Debt in Canada (2011 - 2015)
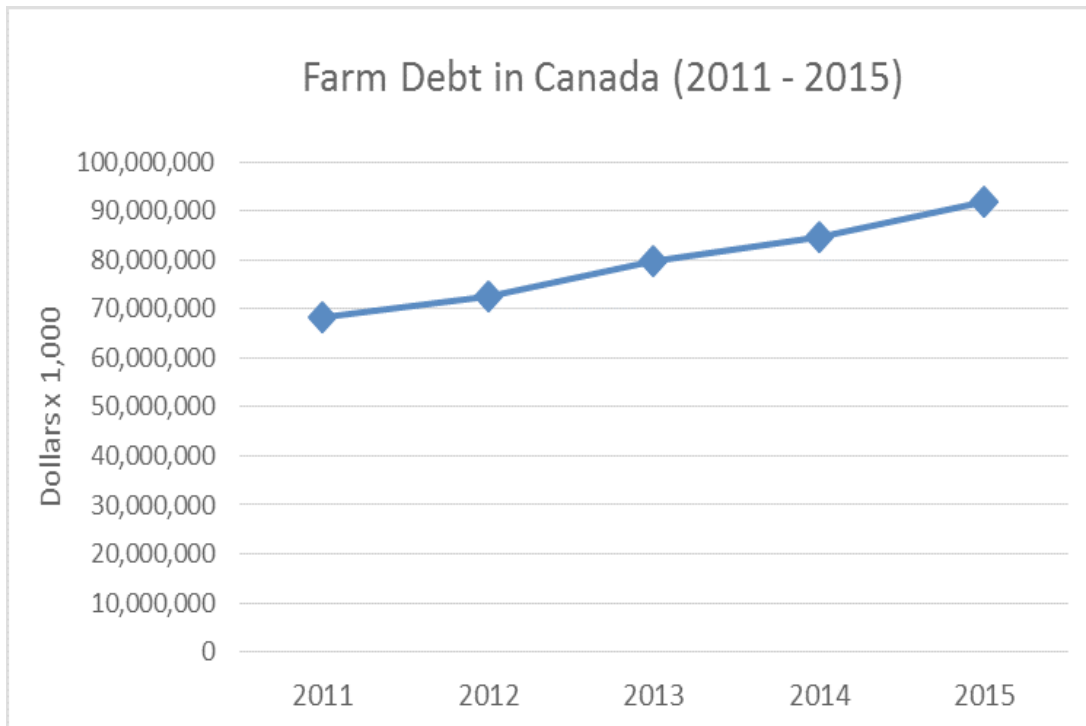
Source: Statistics Canada, Farm Debt Outstanding Survey

Interpretation of Findings: "**Getting worse**" – Farm debt in Canada has increased from about 68 billion in 2011 to just under 92 billion in 2015.

Indicator 28: Farm capital
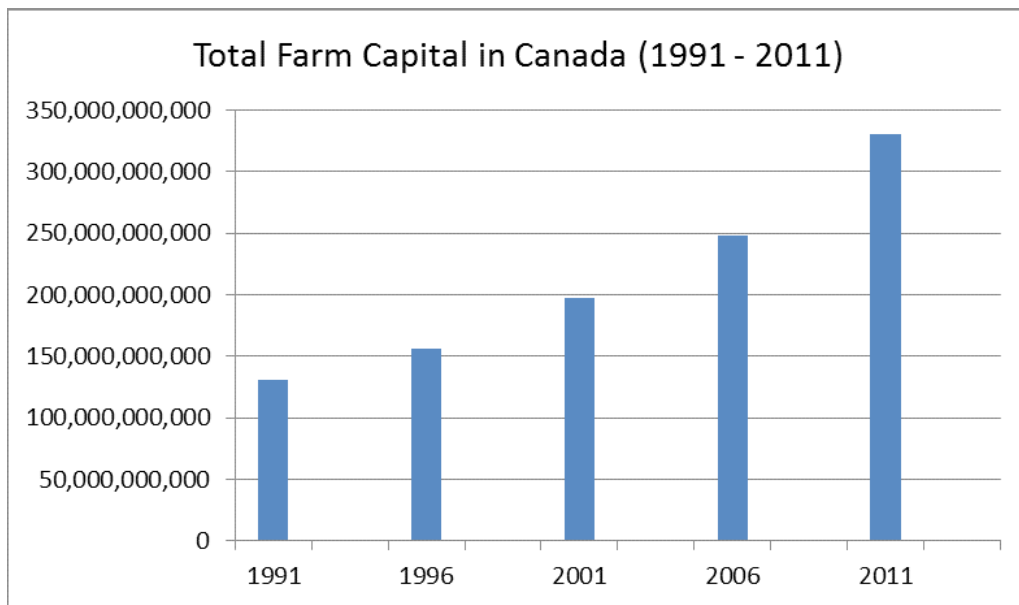
Total Farm Capital in Canada (1991 - 2011)

Source: Statistics Canada, Census of Agriculture

Interpretation of Findings: "**Getting better**" – Over the years 1991 to 2011, the total value of farm capital increased from about 131 billion in 1991 to just under 330 billion in 2011.

As shown below, the value of land and buildings owned represents the largest proportion of total farm capital (61.4% in 2011) followed by the value of land and buildings rented or leased from others (22.1%), the value of all farm machinery and equipment (12.5%), and the value of livestock and poultry (4%).
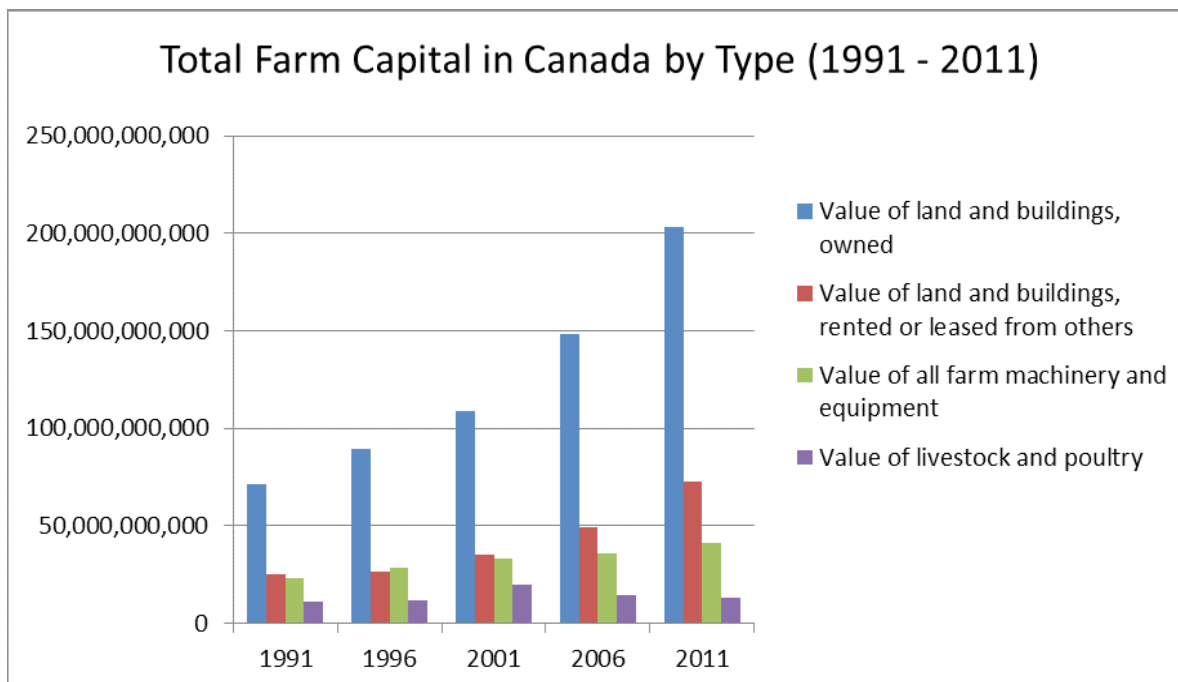
Total Farm Capital in Canada by Type (1991 - 2011)

Source: Statistics Canada, Census of Agriculture

Indicator 29: Median hourly wages of employees in agriculture

Median Hourly Wage of Employees in Agriculture (current dollars) in Canada (2010 - 2016)

Year	Median Hourly Wage
2010	12.5
2011	12.5
2012	13.8
2013	14.0
2014	14.0
2015	15.0
2016	16.0

Months of August
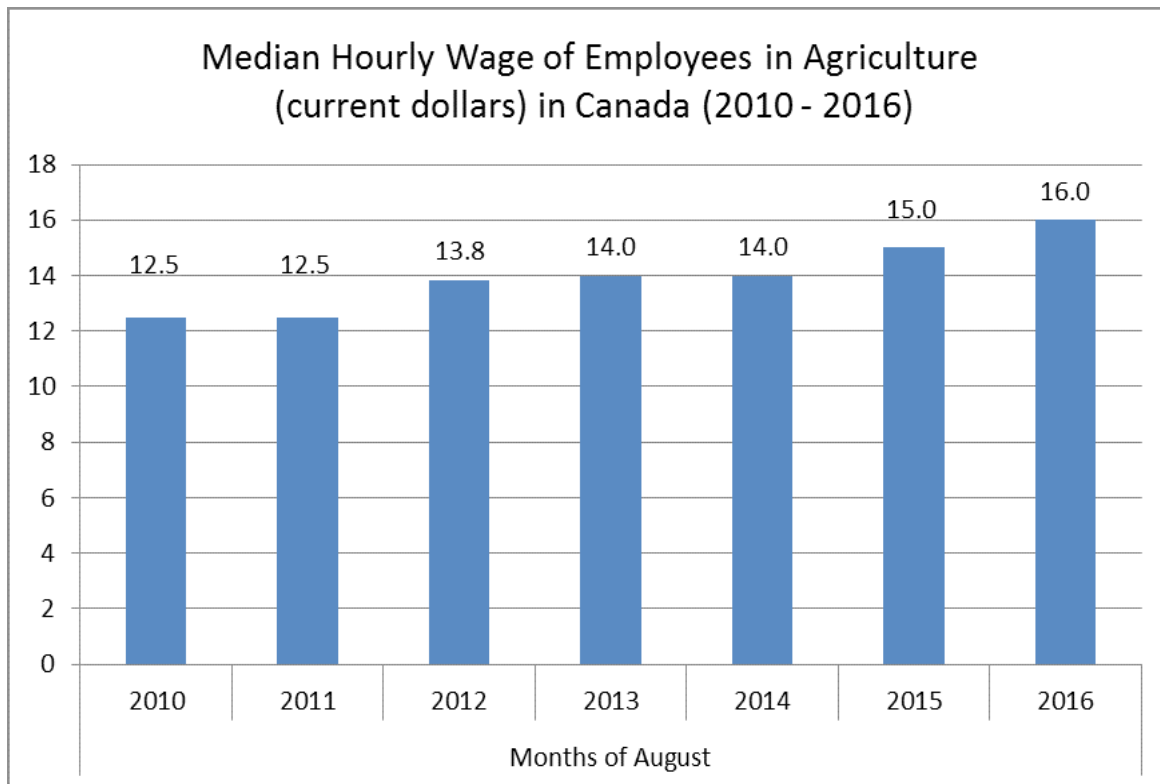
Source: Statistics Canada, Labour Force Survey

Interpretation of Findings: "**Getting better**" – The median hourly wage for employees in Agriculture in Canada has increased from $12.50 per hour 2010 to $16 per hour in 2016.

Indicator 30: Household income class for farm population
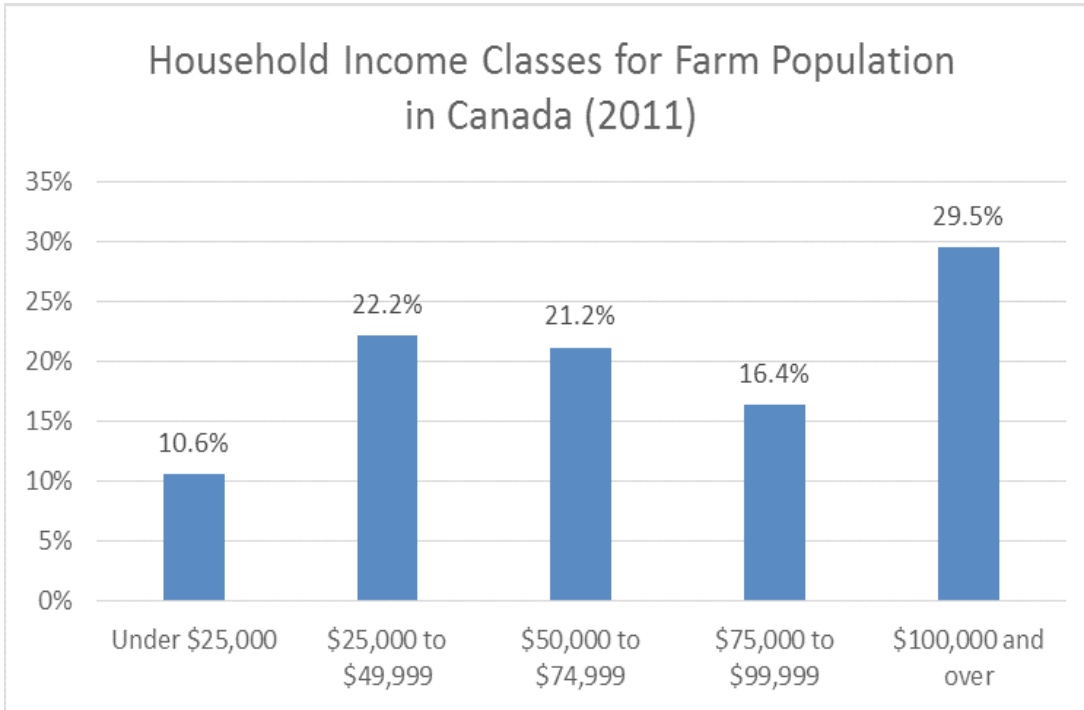
Household Income Classes for Farm Population in Canada (2011)

Income Class	Percentage
Under $25,000	10.6%
$25,000 to $49,999	22.2%
$50,000 to $74,999	21.2%
$75,000 to $99,999	16.4%
$100,000 and over	29.5%

Source: Statistics Canada, Census of Agriculture/National Household Survey Linkage

Interpretation of Findings: "**One point in time data**" – As of 2011, just under half of the farm population (45.9%) had an annual household income over $75,000. About one fifth of the population had an annual household income between $50,000 and $74,999. Another fifth had an annual household income between $25,000 and $49,999 and 10.6% had an annual household income under $25,000.

It is important to consider that this income comprises both on-farm and off-farm income. For example, among farm families in the unincorporated sector (i.e., farm families involved in a single unincorporated farm), the average total annual income in 2011 was $110,563 and $83,609 was the average off-farm annual income for these families (representing 75.6% of the average total annual income).

Farm Operator Characteristics Indicators

Indicator 31: Number of farm operators

Number of Farm Operators in Canada (1991 - 2011)

A line chart titled "Number of Farm Operators in Canada (1991 - 2011)" showing the number of farm operators declining over time. The y-axis ranges from 0 to 450,000 in increments of 50,000. The x-axis shows years: 1991, 1996, 2001, 2006, 2011. Data points are labeled: 390,875 (1991), 385,610 (1996), 346,195 (2001), 327,060 (2006), 293,925 (2011).

Source: Statistics Canada, Census of Agriculture

Interpretation of Findings: "Getting worse" The overall number of farm operators decreased from 390,875 farm operators in 1991 to 293,925 farm operators in 2011. This 24.8% decrease - or almost 100,000 farm operators - occured within the context of the decrease in the overall number of farms between the same time period.

Indicator 32: Age of farm operators
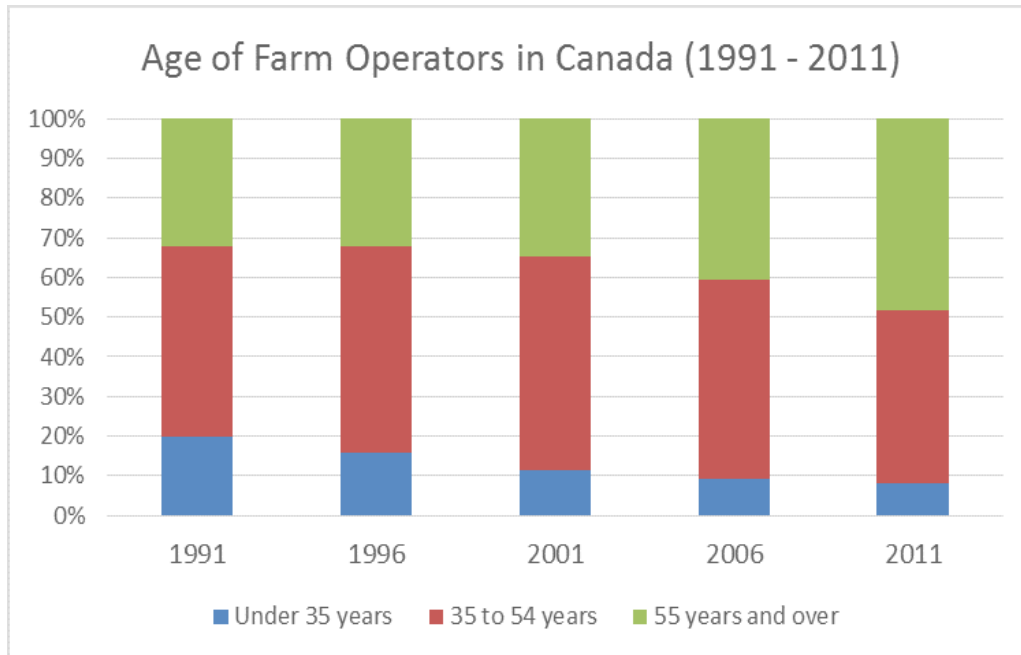
Age of Farm Operators in Canada (1991 - 2011)

Source: Statistics Canada, Census of Agriculture

Interpretation of Findings: "Getting worse" The average age of farm operators increased from 47.5 years of age in 1991 to 54 years of age in 2011. In 2011, almost half of all farm operators were 55 years of age or older, 43.5% were 35 to 54 years of age and only 8.2% were under 35 years of age. Twenty years ago, only 32.1% of farm operators were 55 years and above, 48% were 35 to 54 years and about one fifth (19.9%) were under the age of 35.
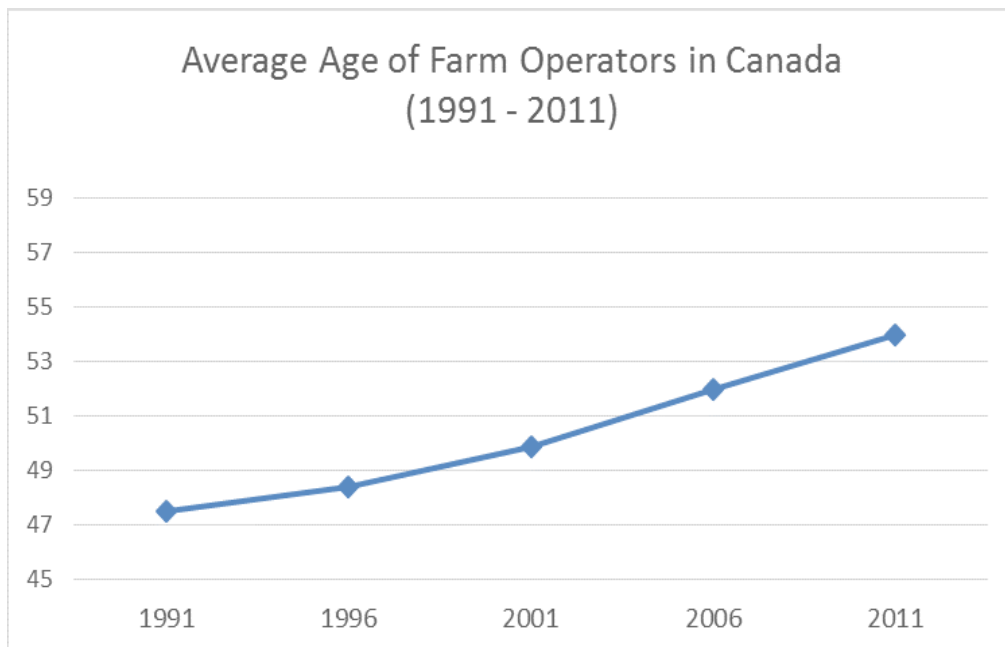
Average Age of Farm Operators in Canada (1991 - 2011)

Source: Statistics Canada, Census of Agriculture

Indicator 33: Sex of farm operators

Sex of Farm Operators in Canada (1991 - 2011)

Year	Female
1991	25.7%
1996	25.2%
2001	26.3%
2006	27.8%
2011	27.4%

Legend: ■ Male ■ Female
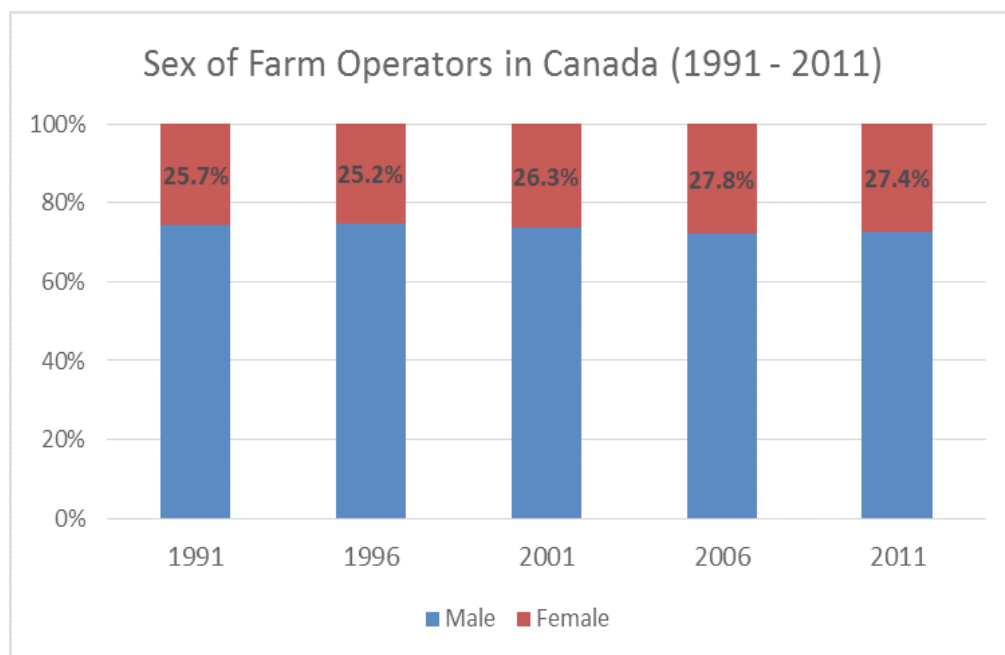
Source: Statistics Canada, Census of Agriculture

Interpretation of Findings: "**Mixed**" – Over the last two decades, the proportion of female farm operators increased slightly. In 2001, 27.4% of farm operators were female compared to 25.7% in 1991. Without information on the age categories of these farm operators, it is difficult to ascertain whether this finding should be interpreted as positive or negative. It may be the case that there are more female farmers due to an increased number of widows based on our aging farm operator population.

For additional reading on this indicator, please see:

Sachs, C., Barbercheck, M., Braiser, K., Kiernan, N. E., & Terman, A. R. (2016). The rise of women farmers and sustainable agriculture. Iowa City, Iowa: University of Iowa Press.

Desmarais, A. A., Roppel, C., & Martz, D. (2011). Transforming agriculture: Women farmers define a food sovereignty policy for Canada. In H. Whitman, A. A. Desmarais & N. Wieb (Eds.), Food sovereignty in Canada: creating just and sustainable food systems (pp. 59-60). Halifax, Nova Scotia: Fernwood Press.

Indicator 34: Country of birth of farm operators
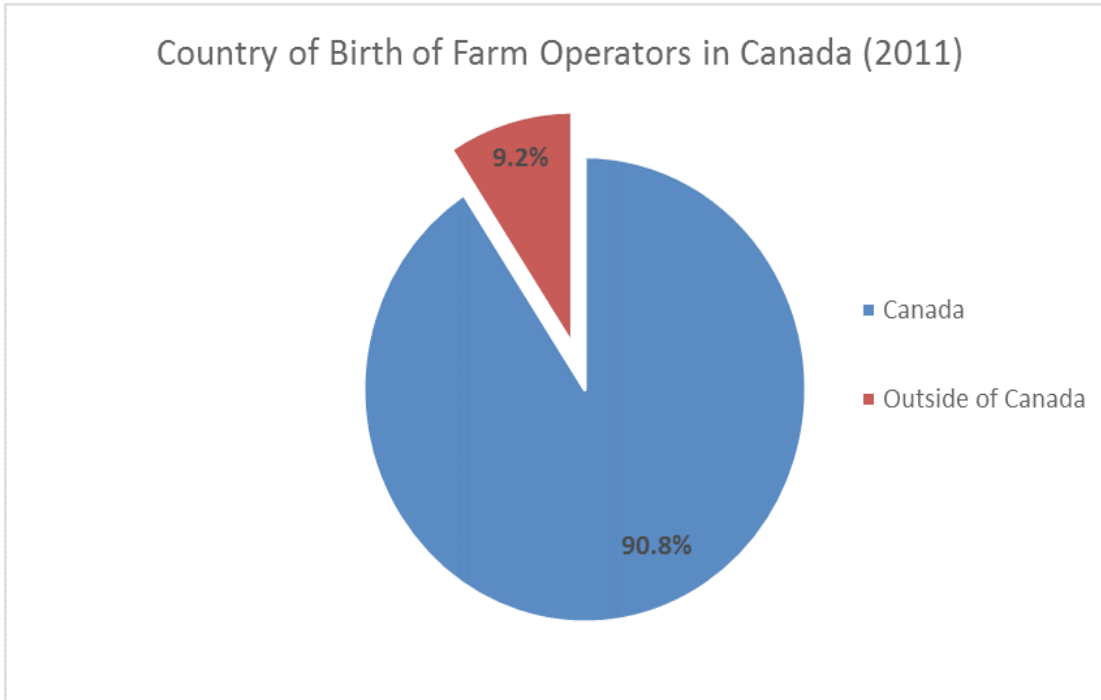
Country of Birth of Farm Operators in Canada (2011)
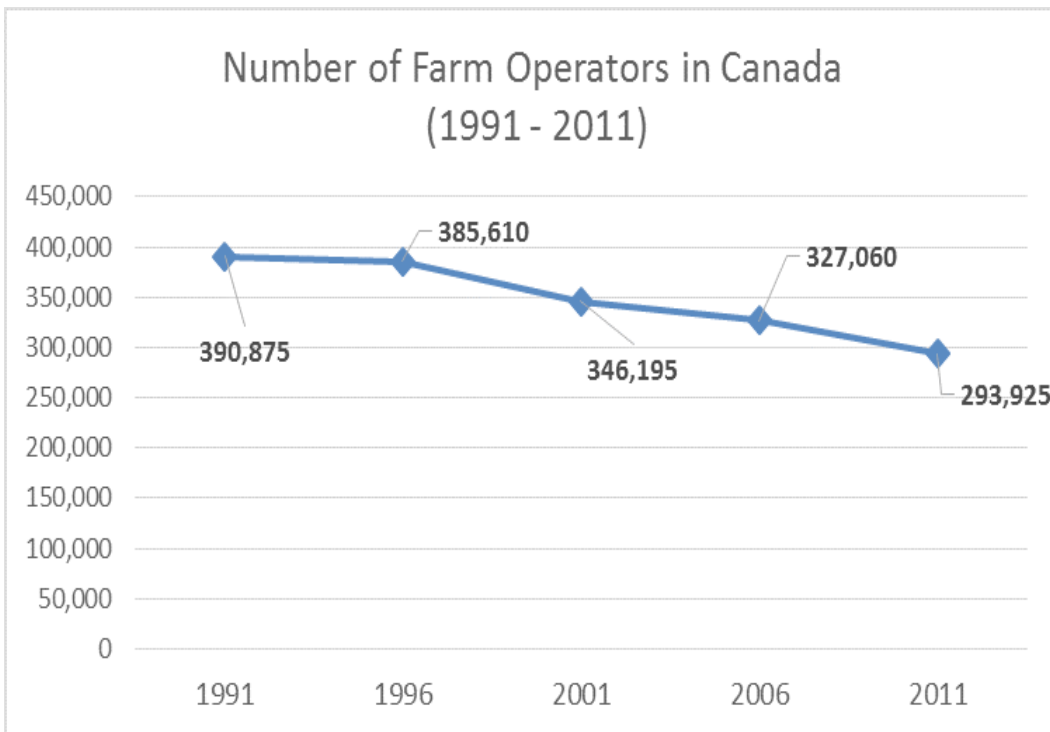

- Canada
- Outside of Canada

9.2%

90.8%

Source: Statistics Canada, Census of Agriculture/National Household Survey Linkage

Interpretation of Findings: "**One point in time data**" – Just under 10% of farm operators were born outside of Canada as of 2011.

Indicator 35: Farm operators with paid non-farm work
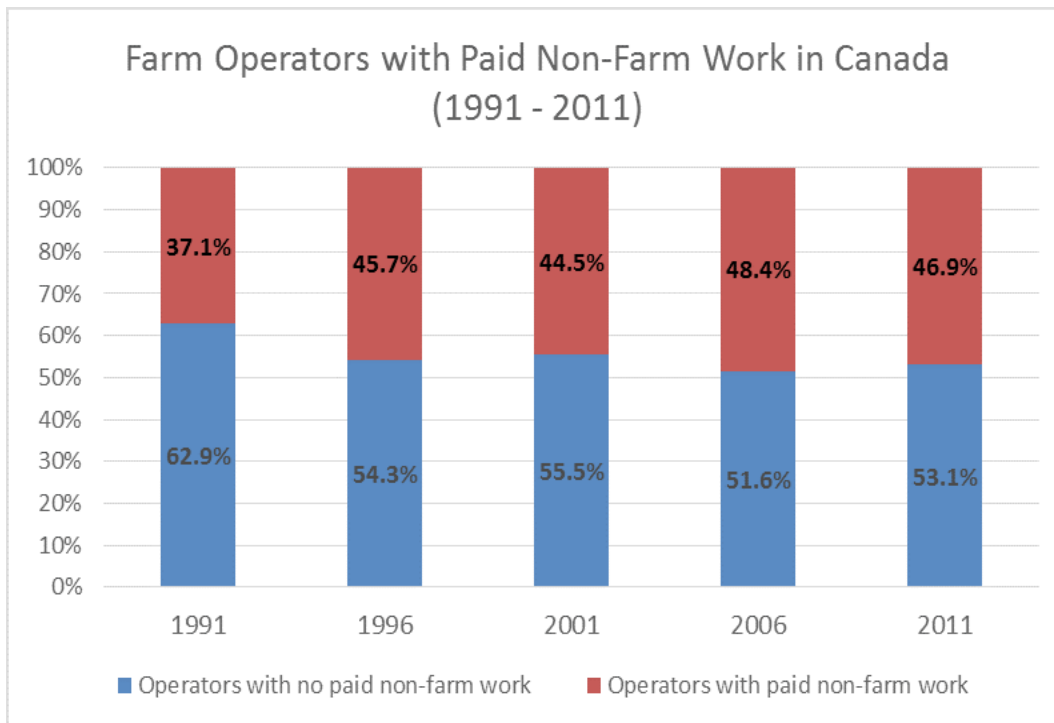
Farm Operators with Paid Non-Farm Work in Canada (1991 - 2011)

Year	Operators with no paid non-farm work	Operators with paid non-farm work
1991	62.9%	37.1%
1996	54.3%	45.7%
2001	55.5%	44.5%
2006	51.6%	48.4%
2011	53.1%	46.9%

Source: Statistics Canada, Census of Agriculture

Interpretation of Findings: "**Mixed**" – The proportion of farm operators with paid non-farm work has increased from 37.1% in 1991 to 46.9% in 2011.

Indicator 36: Farm operator labour force activity
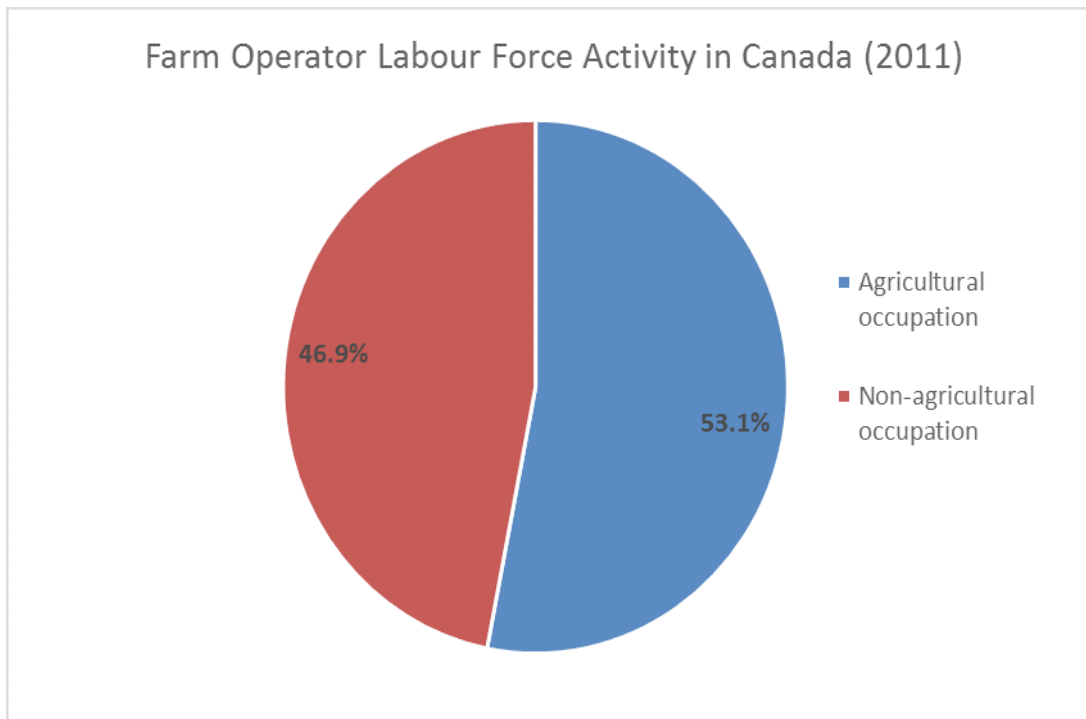
Farm Operator Labour Force Activity in Canada (2011)

- Agricultural occupation
- Non-agricultural occupation

46.9%

53.1%

Source: Statistics Canada, Census of Agriculture/National Household Survey Linkage

Interpretation of Findings: "**One point in time data**" – In 2011, 53.1% of farm operators had an agricultural occupation and the other 46.9% had a non-agricultural occupation. The average number of hours worked in the week prior to the 2011 census day was collected for both these groups. Those farm operators with a non-agricultural occupation worked an average of 35.3 hours per week where as those farm operators with an agricultural occupation worked an average of just under 50 hours per week (49.5).

Indicator 37: Average number of hours worked per week by farm operators on the farm
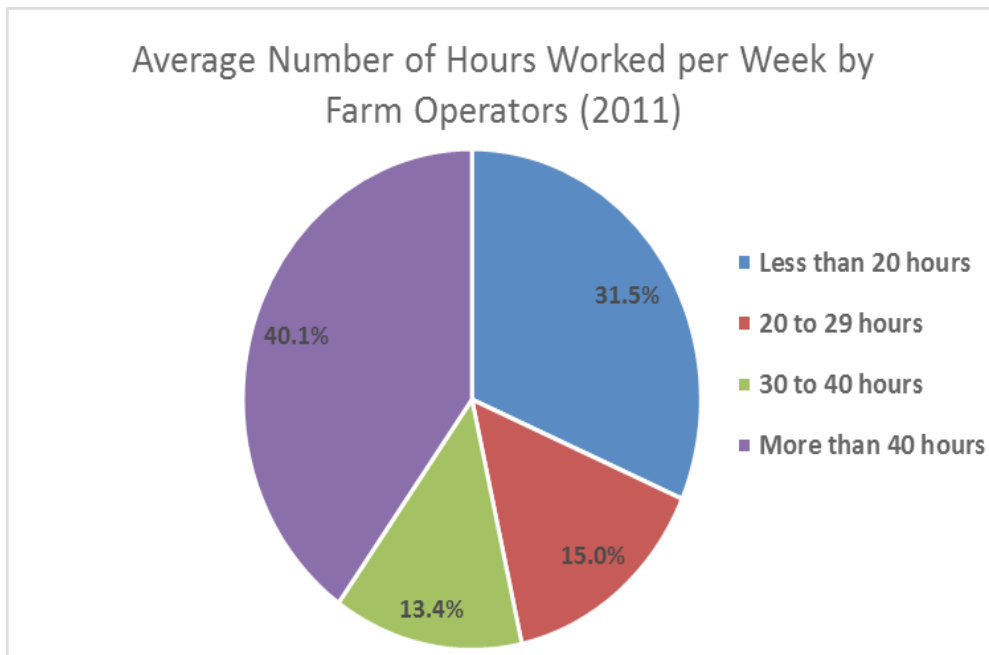
Average Number of Hours Worked per Week by Farm Operators (2011)

- Less than 20 hours: 31.5%
- 20 to 29 hours: 15.0%
- 30 to 40 hours: 13.4%
- More than 40 hours: 40.1%

Source: Statistics Canada, Census of Agriculture

Interpretation of Findings: "**One point in time data**" – In 2011, 40.1% of farm operators worked more than 40 hours per week on the farm while 13.4% worked 30 to 40 hours on the farm, 15% worked 20 to 29 hours and 31.5% worked less than 20 hours on the farm.

Indicator 38: Distribution of farm population
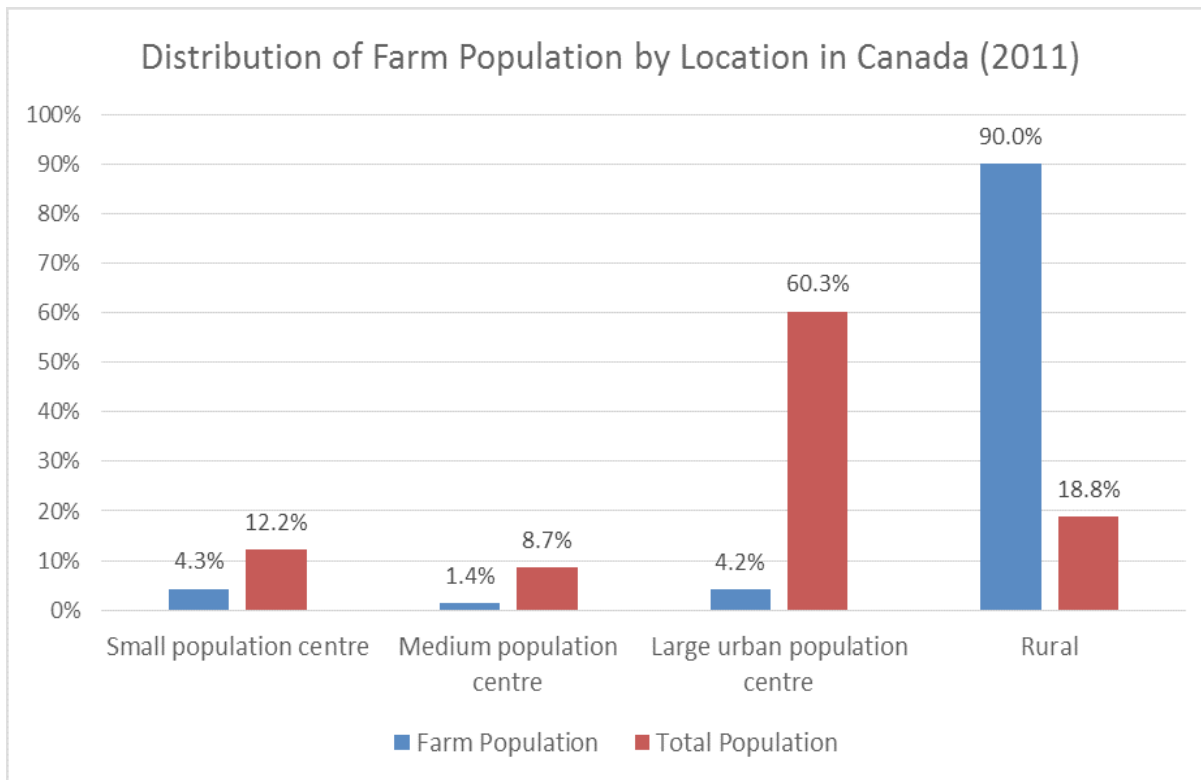
Distribution of Farm Population by Location in Canada (2011)

Source: Statistics Canada, Census of Agriculture/National Household Survey Linkage

Interpretation of Findings: "**One point in time data**" – Within Canada the vast majority of the farm population resides in rural areas (90%) compared to the majority of the total population (60.3%) which resides in large urban population centres. About 4.2% of the farm population lives in large urban centres, another 4.3% resides in small population centres and 1.4% lives in medium population centres.

Indicator 39: Number of people in SAWP program

Number of workers in SAWP and related programs in Canada (2008 - 2015)
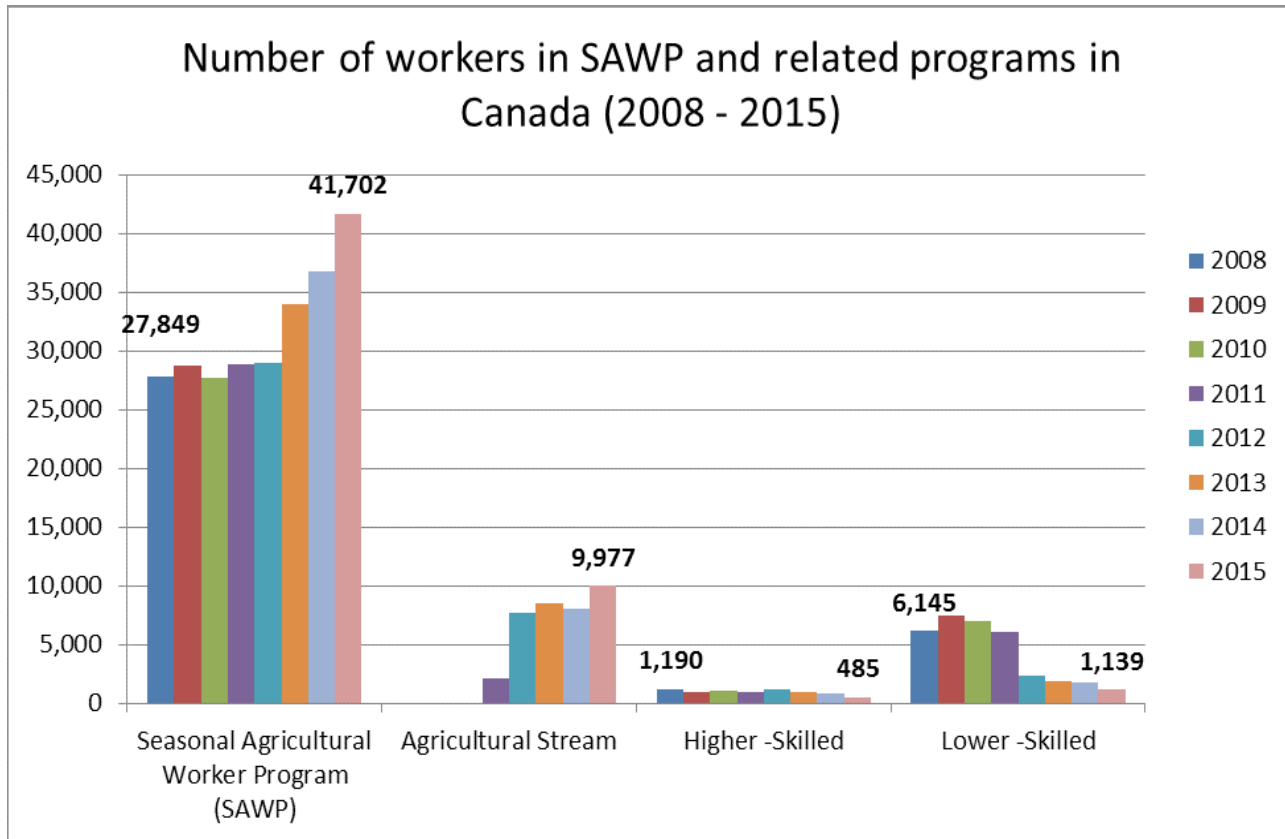
Source: Government of Canada, Annual Labour Market Impact Assessment Statistics 2008-2015

Interpretation of Findings: "**Getting worse**" – The overall number of individuals participating in the SAWP and related programs increased from 35,184 workers in 2008 to 50,303 workers in 2015. Our interpretation of these findings is that an increase in the number of temporary foreign workers over time is not a good trend for a number of reasons: 1) this means there are fewer Canadians willing or able to take on farming jobs (for several varied reasons); 2) that there are more people leaving their homes and families to come and work in Canada; and 3) that there are more people who are being treated as disposable labour to do jobs Canadians can not do without substantial reward (other than pay). This trend could be interpreted as positive if the increase in temporary foreign workers came with provisions of guarantees for protections and citizenship, which are currently lacking.

For additional reading on this indicator, please see:

McLaughlin, J. (forthcoming August 2017). Strengthening the backbone: local food, foreign labour and social justice. In I. Knezevic, C. Levkoe, E Nelson, P. Mount & A. Blay-Palmer (Eds.), Nourishing communities: From fractured food systems to transformative pathways. New York: Springer International Publishing.

Food Worker Characteristics Indicator

Indicator 40: Number of employees in food service, wholesale and manufacturing
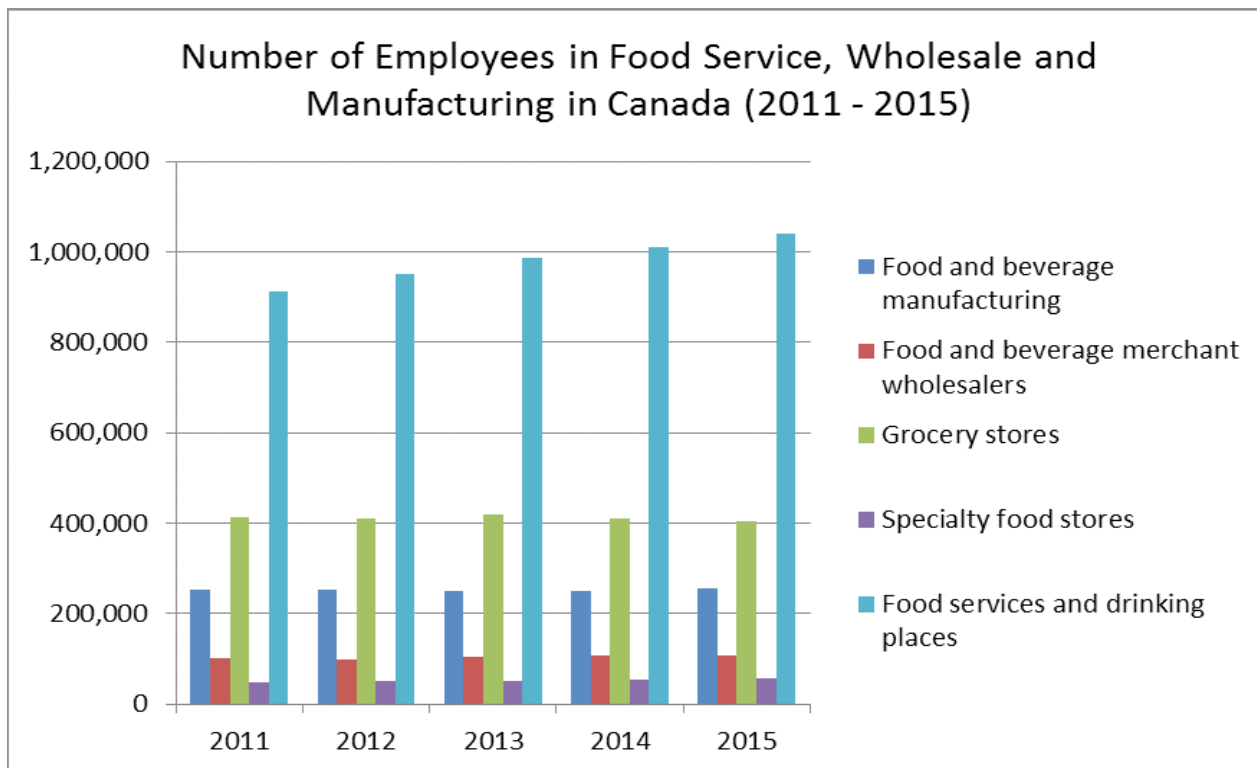
Source: Statistics Canada, Survey of Employment, Payroll and Hours

Interpretation of Findings: "**Mixed**" – The number of people employed in food and beverage manufacturing, food and beverage wholesale, specialty food stores and food services and drinking places increased between 2011 and 2015. The only category which saw a decrease in the number of employees during this same time was grocery stores (from 412,835 in 2011 to 403,796 in 2015). Our interpretation of these findings is 'mixed' since we are unsure about the relative precariousness of the jobs which have been added.

For additional reading on this indicator, please see:

Jayaraman, S. (2013). Behind the kitchen door. Ithaca, New York: Cornell University Press.

Sachs, C., Allen, P., Terman, A. R., Hayden, J., & Hatcher, C. (2013). Front and back of the house: socio-spatial inequalities in food work. Agriculture and Human Values, 31(1), 3–17.

Food Chain Workers Alliance. (2012). The hands that feed us: Challenges and opportunities for workers along the food chain. Available at http://foodchainworkers. org/?p=1973.

Farm Safety Indicator

Indicator 41: Agricultural fatalities

Agricultural Fatalities in Canada (1990 - 2012)

Year	Fatalities
1990	135
1991	120
1992	114
1993	116
1994	140
1995	121
1996	107
1997	117
1998	111
1999	97
2000	111
2001	98
2002	94
2003	105
2004	83
2005	93
2006	87
2007	81
2008	82
2009	86
2010	91
2011	75
2012	60
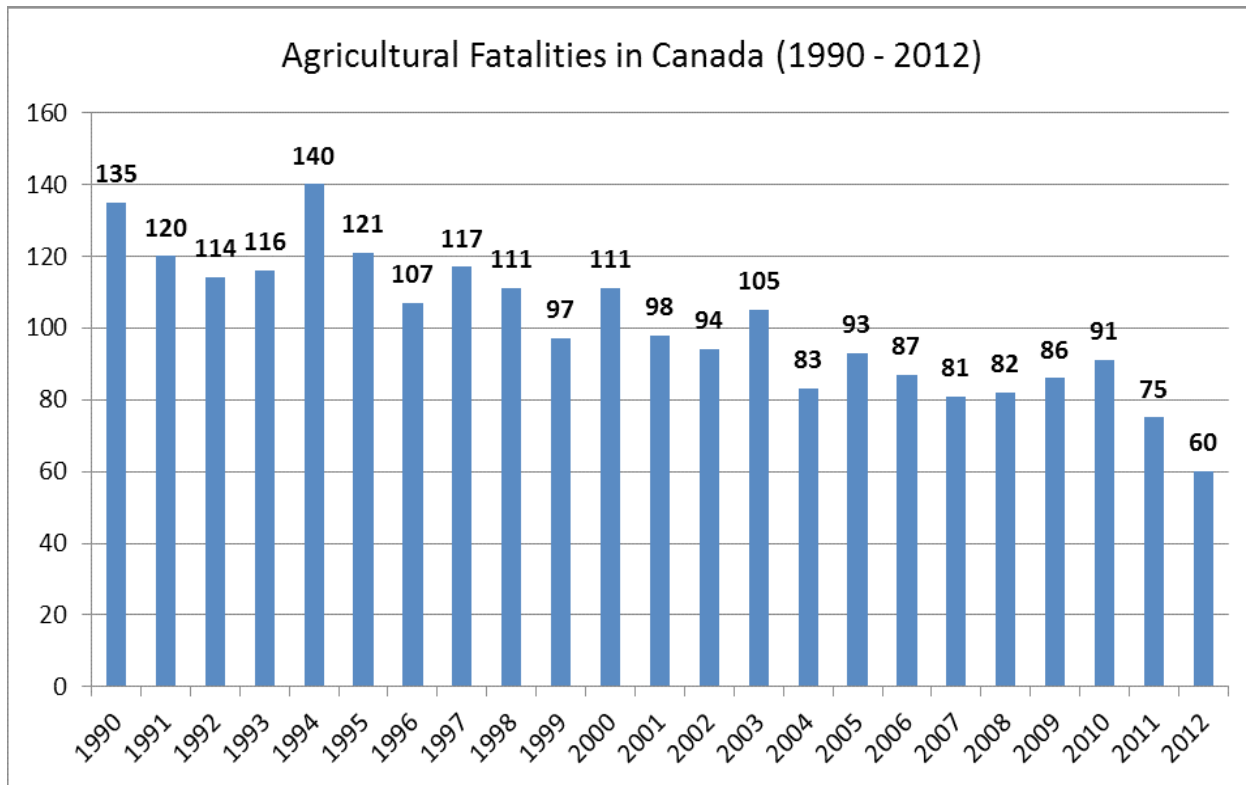
Source: Canadian Agricultural Injury Reporting (CAIR), Agriculture-Related Fatalities in Canada Report

Interpretation of Findings: "**Getting better**" – Between 1990 and 2012 there were a total of 2,324 agricultural fatalities in Canada which is an average of 101 deaths each year. From 1990 to 2001 the average was 116 fatalities each year compared to an average of 85 deaths a year between the period of 2002 to 2012.

Works with Nature

This principle speaks to optimizing the contributions of ecosystems and improving ecosystem resilience

Summary of Indicators

Theme	Indicator	Status
Agriculture-related	42. Land management inputs on farms	Getting worse
	43. Farm water conservation practices	Getting better
	44. Water use, by industry	Getting better
	45. Freshwater quality, by land use	One point in time data*
	46. Agricultural emissions	Getting worse
	47. Farms reporting organic products for sale	Getting better
	48. Households participating in composting kitchen waste	Getting better
	49. Hectares of forest deforested from agriculture	Getting better
	50. Preservation land practices	One point in time data*
Ecosystem protection	51. Protected land area	Getting better
	52. Protected marine area	Getting better
	53. Major fish stocks status	Stable
Compound indices	54. Biodiversity index	Getting better
	55. Soil quality index	Getting better
	56. Water quality index	Getting worse
	57. Air quality index	Getting better

*For this indicator we were only able to extract data from one point in time. We expect that this data will continue to be collected on a regular basis; therefore this current data point will act as the baseline for future reports.

Agriculture-related Indicators

Indicator 42: Land management inputs on farms – average acres per farm reporting
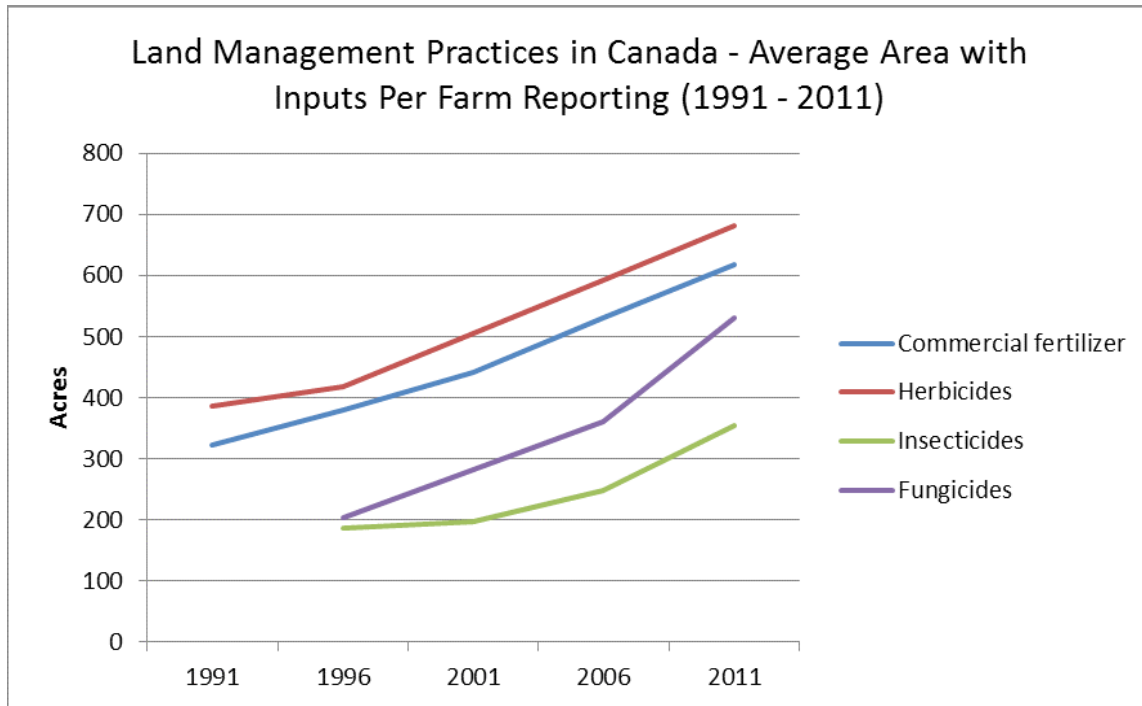
Source: Statistics Canada, Census of Agriculture

Interpretation of Findings: "Getting worse" – Of those farms reporting the use of land inputs such as commercial fertilizer, herbicides, insecticides and fungicides, the average area per farm applying these inputs increased between 1991 and 2011. Herbicides and commercial fertilizer are the most widely used land inputs.

Indicator 43: Farm water conservation practices

Farms Reporting Irrigation Water Conservation Practices in Canada (2010 - 2014)
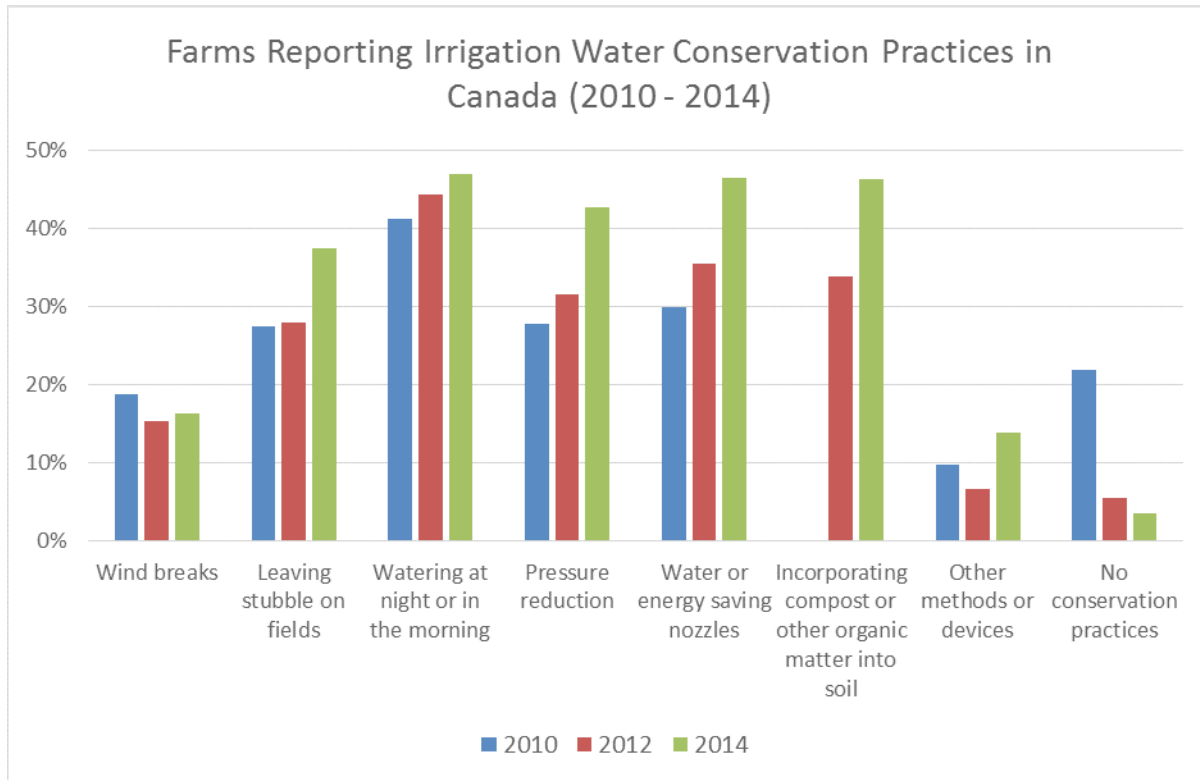
Source: Statistics Canada, Agricultural Water Survey

Interpretation of Findings: "**Getting better**" – This data captures the conservation practices of those farms who reported using irrigation. In 2014, 5,855 farms reported using irrigation compared to 7,310 farms in 2012 and 7,685 farms in 2010. Between 2010 and 2014 the proportion of farms reporting a variety of irrigation water conservation practices increased. Only 3.5% of farms reported using no conservation practices in 2014 compared to 21.9% in 2010. The practices most likely to be used in 2014 were watering at night or in the morning (47.1%), water or energy saving nozzles (46.6%) and incorporating compost or other organic matter into the soil (46.4%).

Indicator 44: Water use, by industry
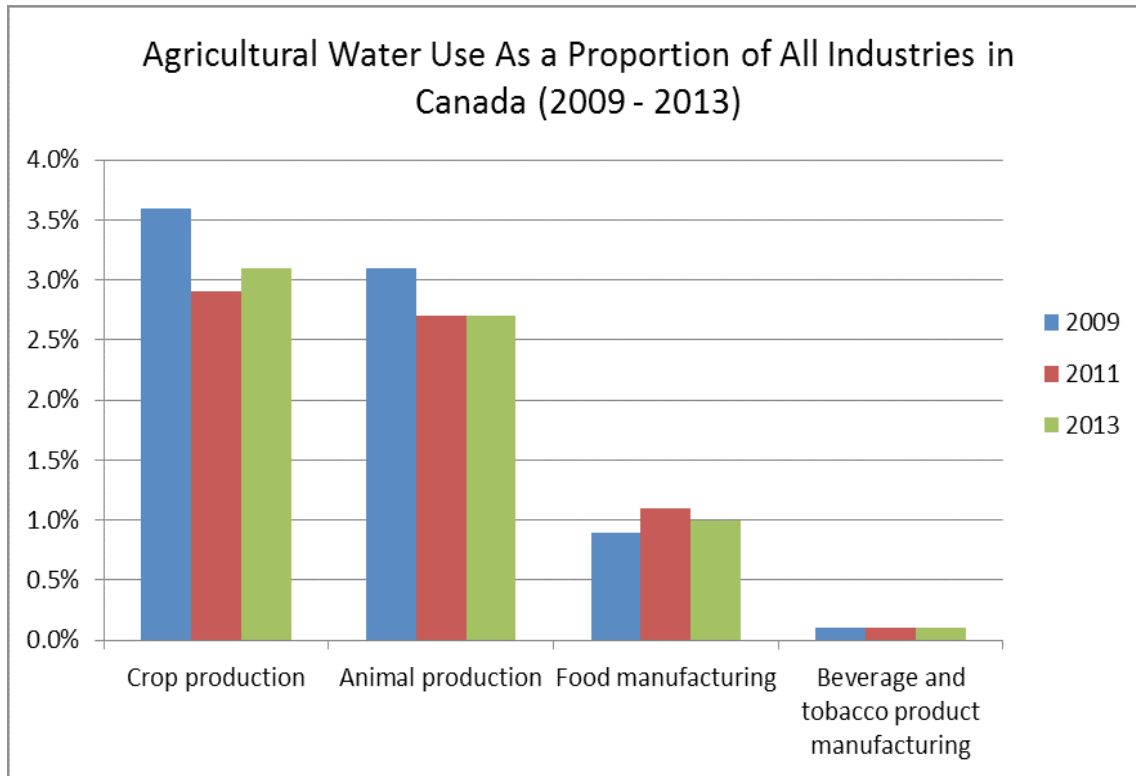
Agricultural Water Use As a Proportion of All Industries in Canada (2009 - 2013)

Source: Statistics Canada, Canadian System of Environmental-Economic Accounts

Interpretation of Findings: "**Getting better**" – The total volume of water used for all industries in Canada fell from 35,200,016,000 cubic metres in 2009 to 34,671,607,000 cubic metres in 2013. The overall water use in the agricultural sector as a proportion of all industries in Canada decreased from 8.6% in 2009 to 6.9% in 2013. Declines were seen in the areas of crop production and animal production while the overall water use for food manufacturing increased slightly within this time period and water use for beverage and tobacco product manufacturing remained consistent.

Indicator 45: Freshwater quality, by land use

Freshwater Quality by Land Use in Canada (2010 - 2012)
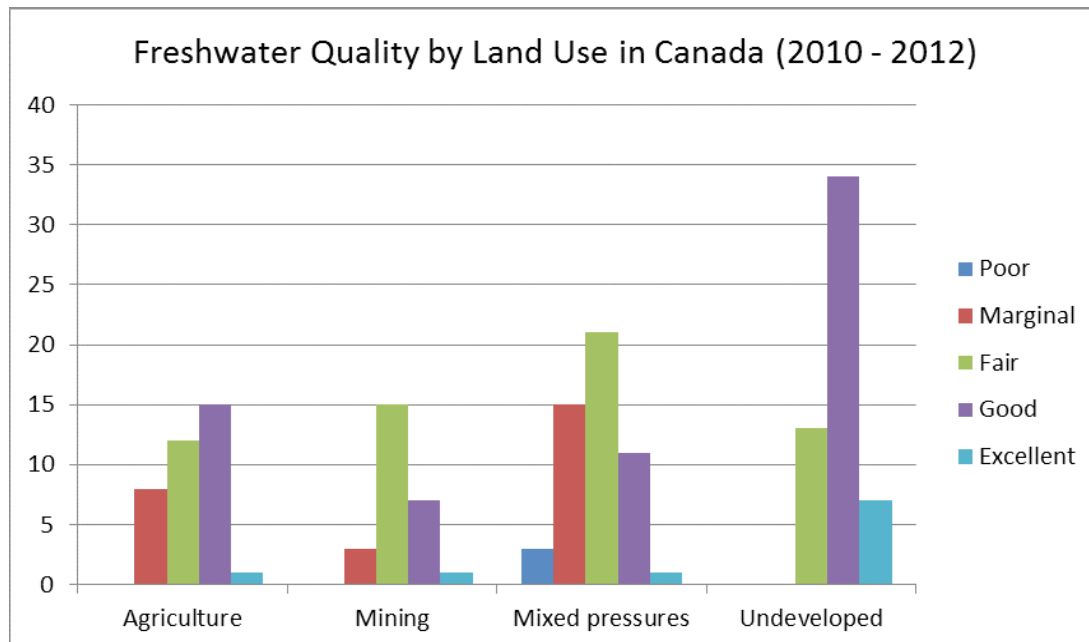
Source: Environment and Climate Change Canada

Interpretation of Findings: "**One point in time data**" – Of the 167 core sites assessed for freshwater quality between 2010 and 2012, 3 sites were categorized as poor (2%), 26 as marginal (15%), 61 as fair (37%), 67 as good (40%), and 10 as excellent (6%). Among sites classified within an agriculture land use category, 0 sites were classified as poor, 8 as marginal (22%), 12 as fair (33%), 15 as good (42%), and 1 as excellent (3%).

Indicator 46: Agricultural greenhouse gas emissions (crop and animal production)
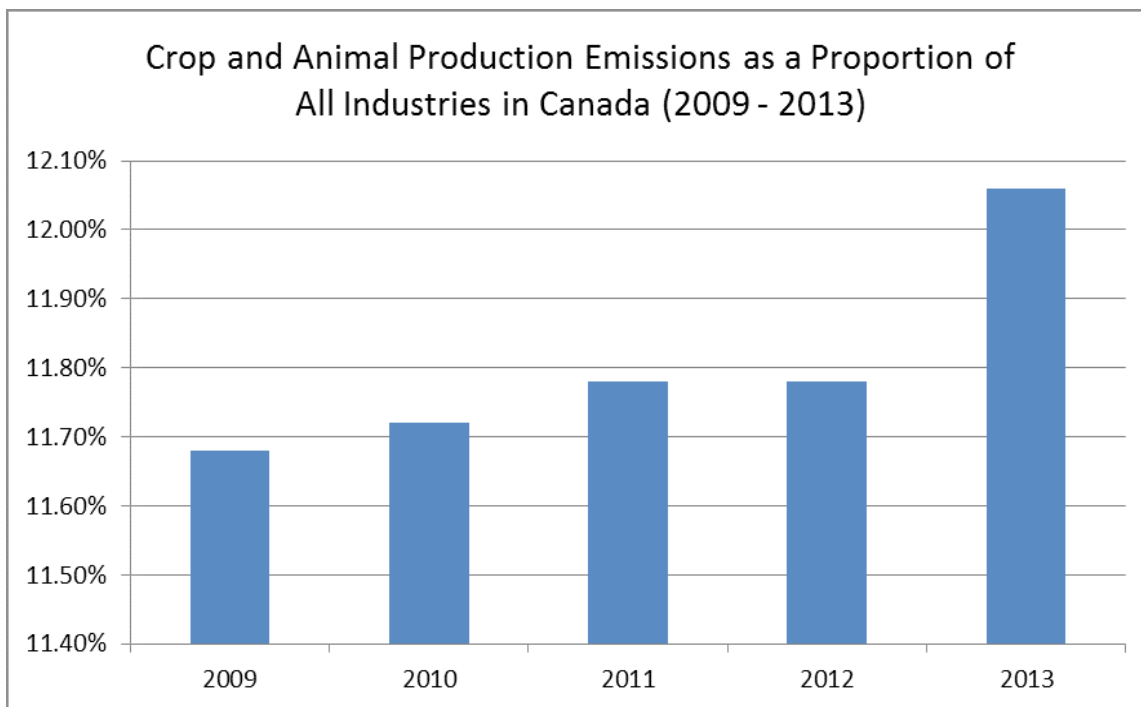
Crop and Animal Production Emissions as a Proportion of All Industries in Canada (2009 - 2013)

Source: Statistics Canada, Canadian System of Environmental-Economic Accounts

Interpretation of Findings: "**Getting worse**" – The total number of kilo tonnes of greenhouse gas emissions released into the atmosphere by all industries in Canada increased from 585,665 kilo tonnes in 2009 to 620,698 kilo tonnes in 2013. The overall greenhouse gas emissions from crop and animal production as a proportion of all industries in Canada also increased from 11.68% in 2009 to 12.06% in 2013. Specifically, there was an increase from 68,427 kilo tonnes of greenhouse gases from crop and animal production in 2009 to 74,870 kilo tonnes in 2013.

Indicator 47: Farms reporting organic products for sale
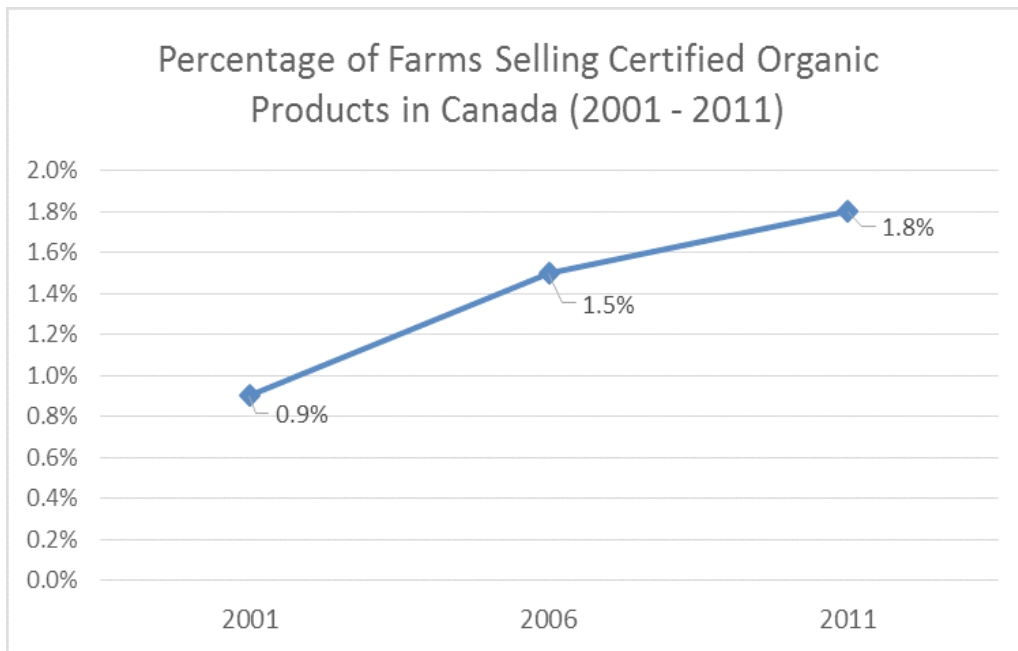
Percentage of Farms Selling Certified Organic
Products in Canada (2001 - 2011)

Source: Statistics Canada, Census of Agriculture

Interpretation of Findings: "**Getting better**" – The percentage of farms selling certified organic products increased from just less than one percent in 2001 to 1.8% in 2011. This proportion remains a very small fraction of the total farm population.

For more information on organic products in Canada, please see the reports produced by the Canadian Organic Trade Association which are available at https://www.ota.com/canada-ota/learn-about-organic-canada.

Indicator 48: Households participating in composting kitchen waste

Households Participating in Composting of Kitchen Waste
(in past 12 months) in Canada (2007 - 2013)

Year	Yes
2007	37.0%
2009	43.1%
2011	45.6%
2013	48.7%
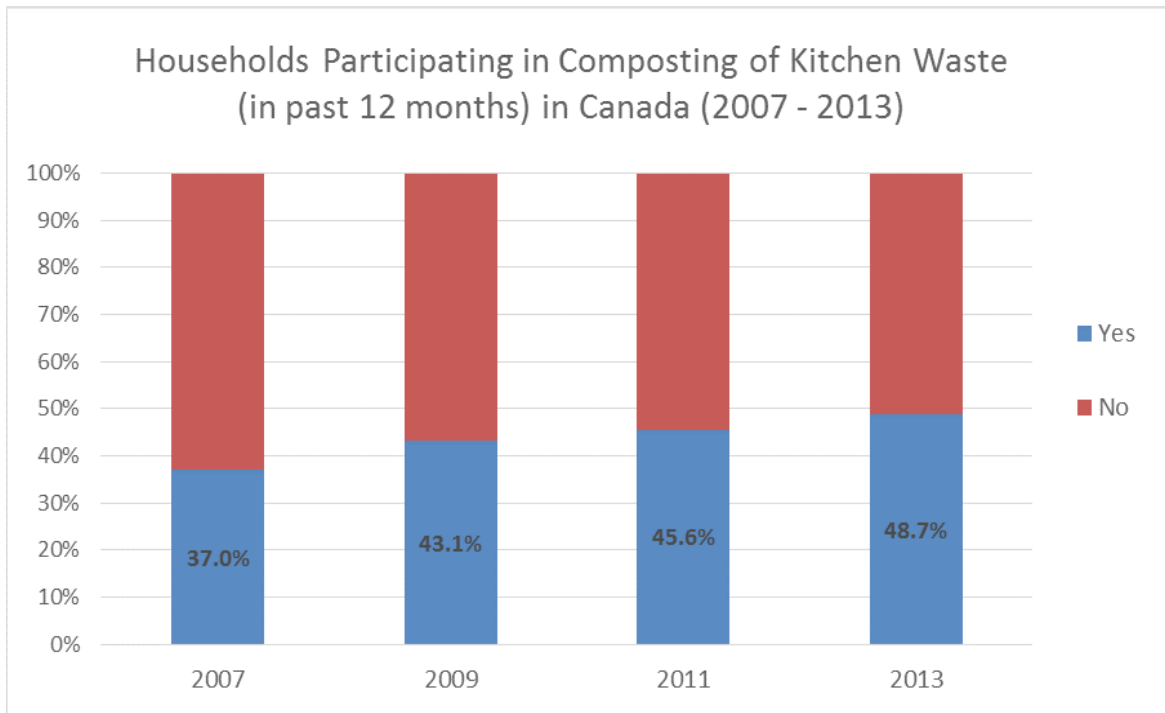
Source: Statistics Canada, Household and the Environment Survey

Interpretation of Findings: "**Getting better**" – Between 2007 and 2013, the proportion of Canadians who participated in composting their kitchen waste rose from 37% in 2007 to 48.7% of households in 2013.

Indicator 49: Hectares of forest deforested due to agriculture

Hectares of Forest Deforested From Agriculture in Canada (1990 - 2014)
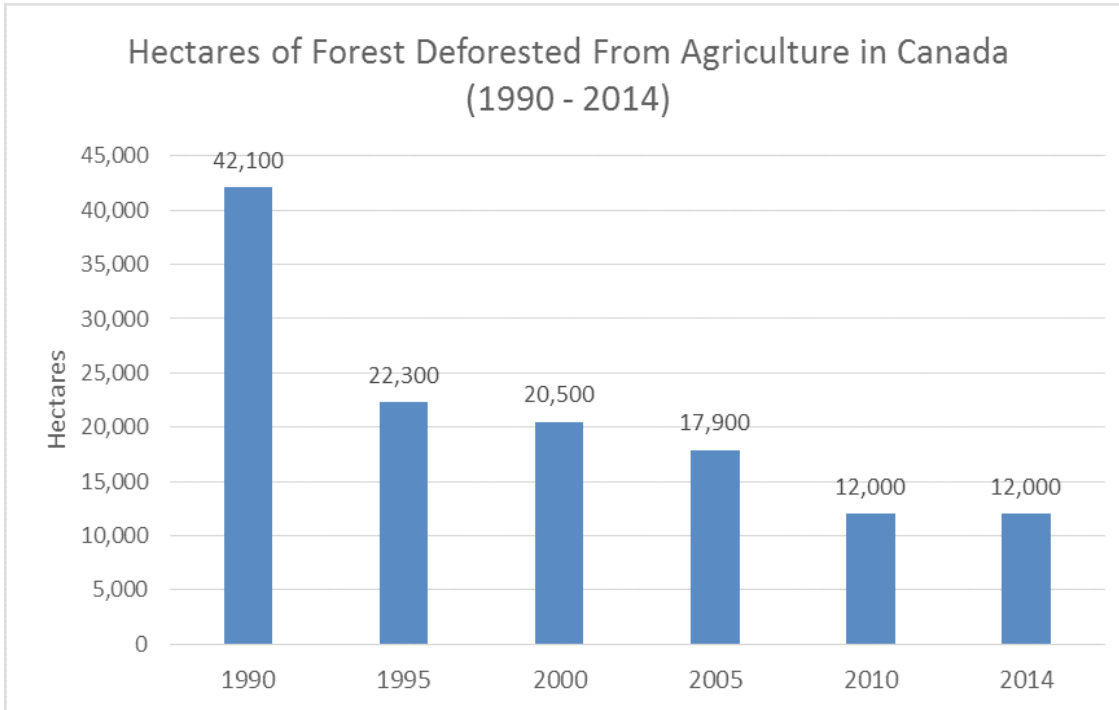
Source: Natural Resources Canada Canadian Forest Service, The State of Canada's Forests Annual Report 2016

Interpretation of Findings: "**Getting better**" – The number of estimated hectares of Canadian forests deforested from agriculture decreased from 42,100 hectares in 1990 to 12,000 hectares in 2014. Nonetheless, agriculture still remains the industrial sector responsible for the most deforestation (35% of all hectares deforested in Canada in 2014). The next highest sector is the oil and gas sector which was responsible for 29% of all deforestation in 2014. It is unknown whether the decrease in deforestation between 1990 to 2014 was due to reduced availability of forested land suitable for agriculture or to other factors.

Indicator 50: Preservation land practices
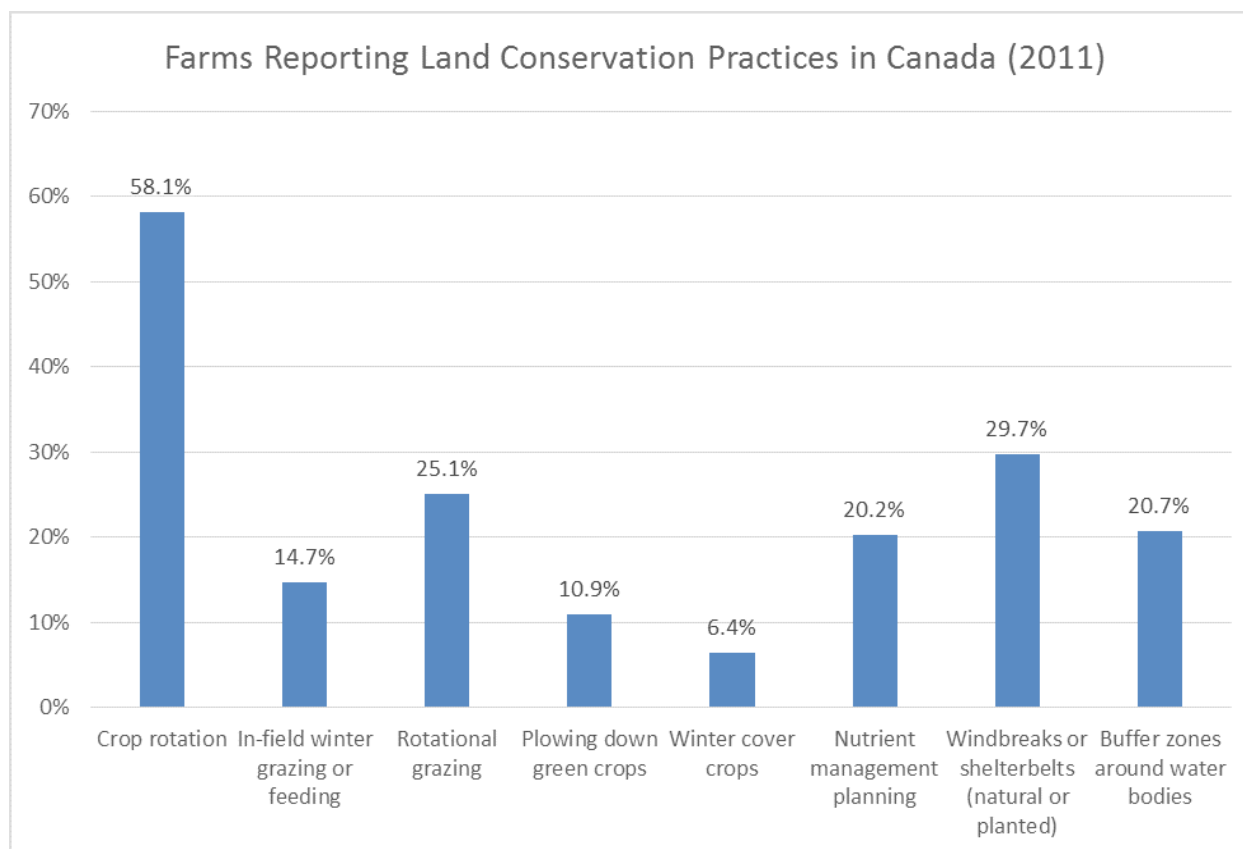
Farms Reporting Land Conservation Practices in Canada (2011)

- Crop rotation: 58.1%
- In-field winter grazing or feeding: 14.7%
- Rotational grazing: 25.1%
- Plowing down green crops: 10.9%
- Winter cover crops: 6.4%
- Nutrient management planning: 20.2%
- Windbreaks or shelterbelts (natural or planted): 29.7%
- Buffer zones around water bodies: 20.7%

Source: Statistics Canada, Census of Agriculture

Interpretation of Findings: "**One point in time data**" – Canadian farms reported a variety of land conservation practices as of 2011. The most frequently used practice was crop rotation (58.1% of farms) followed by using windbreaks or shelterbelts (29.7%), employing rotational grazing (25.1%), keeping buffer zones around water bodies (20.7%) and exercising nutrient management planning (20.2%). Practices such as in-field inter grazing or feeding, plowing down green crops and using winter cover crops were reported less frequently.

For additional reading on this indicator, please see:

Blay-Palmer, A. (2012). Alternative land use services (ALUS) and the case for multifunctional policy in Canada. In R. MacRae & E. Abergel (Eds.), Health and sustainability in the Canadian food system: Advocacy and Opportunity for civil society (pp. 39-69). Vancouver, British Columbia: UBC Press.

Allan, L. (2015). The Ontario East Alternative Land Use Services (ALUS) program; A case study. Available at http://nourishingontario.ca/wp-content/uploads/2016/01/ON-East-ALUS-Social-Economy-of-Food.pdf.

Ecosystem Protection Indicators

Indicator 51: Protected land area
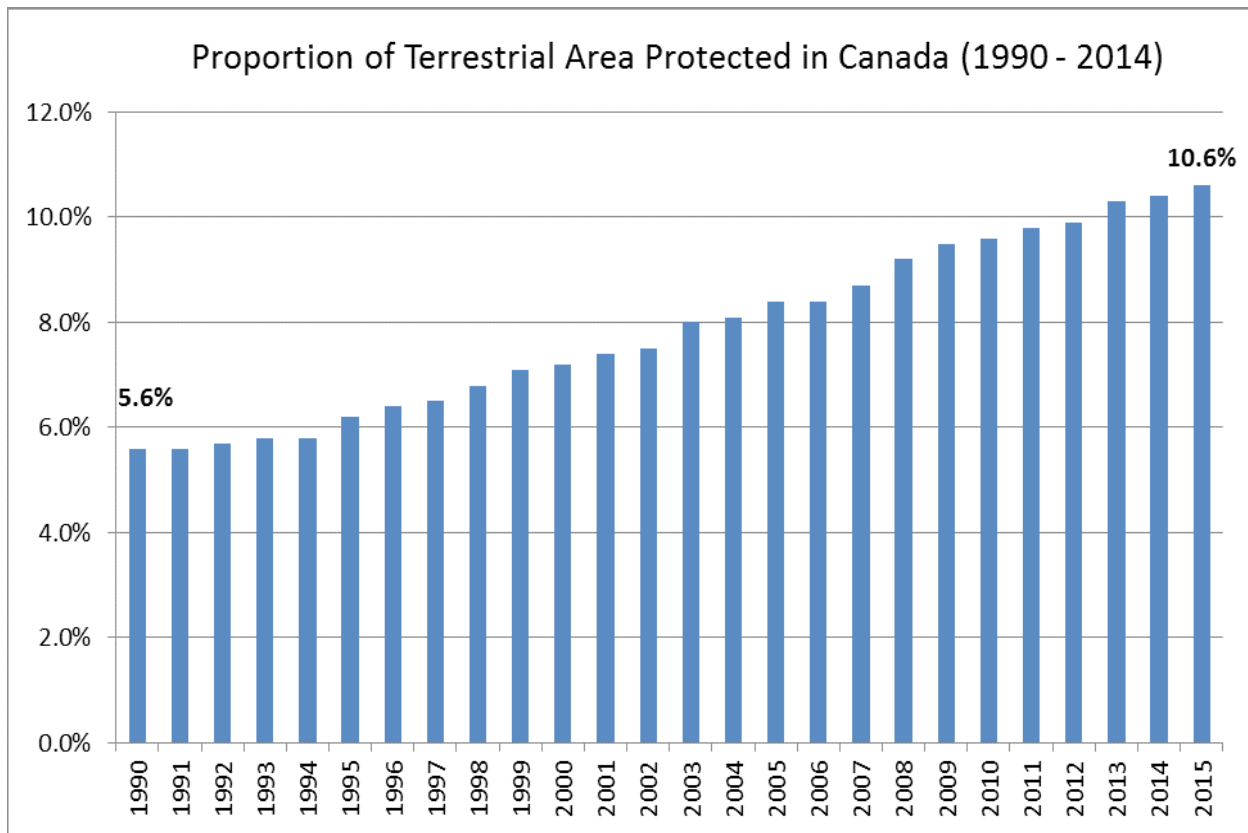
Proportion of Terrestrial Area Protected in Canada (1990 - 2014)

Source: Canadian Council on Ecological Areas data which was accessed through Environment and Climate Change Canada

Interpretation of Findings: "**Getting better**" – Between 1990 and 2015 the proportion of terrestrial area protected increased gradually from 5.6% in 1990 to 10.6% in 2015.

Indicator 52: Protected marine area
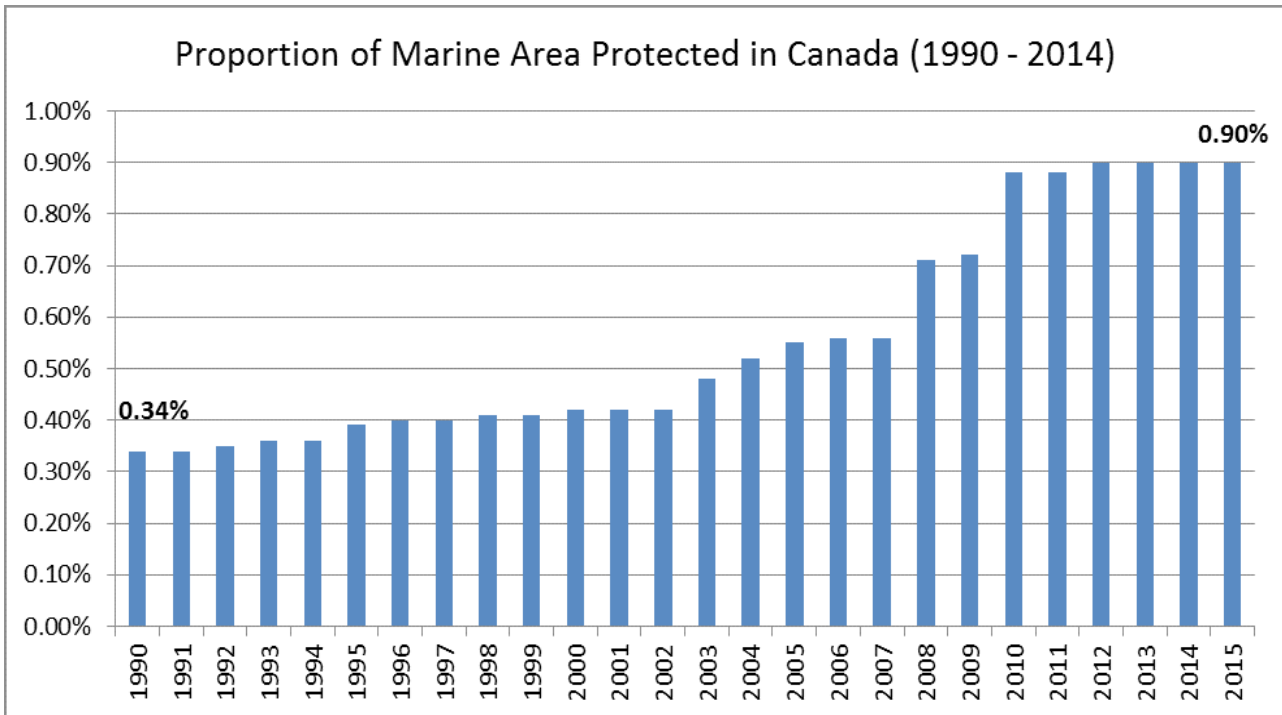
Proportion of Marine Area Protected in Canada (1990 - 2014)

(Bar chart showing values from 0.34% in 1990 rising to 0.90% in 2015, with 1990 labeled "0.34%" and 2015 labeled "0.90%")

Source: Canadian Council on Ecological Areas data which was accessed through Environment and Climate Change Canada

Interpretation of Findings: "**Getting better**" - Between 1990 and 2015 the proportion of marine area protected increased gradually from 0.34% in 1990 to 0.9% in 2015. While the proportion of protected marine area has increased over time, it remains very low.

Indicator 53: Major fish stocks status

Status of Major Fish Stocks in Canada (2011 - 2014)
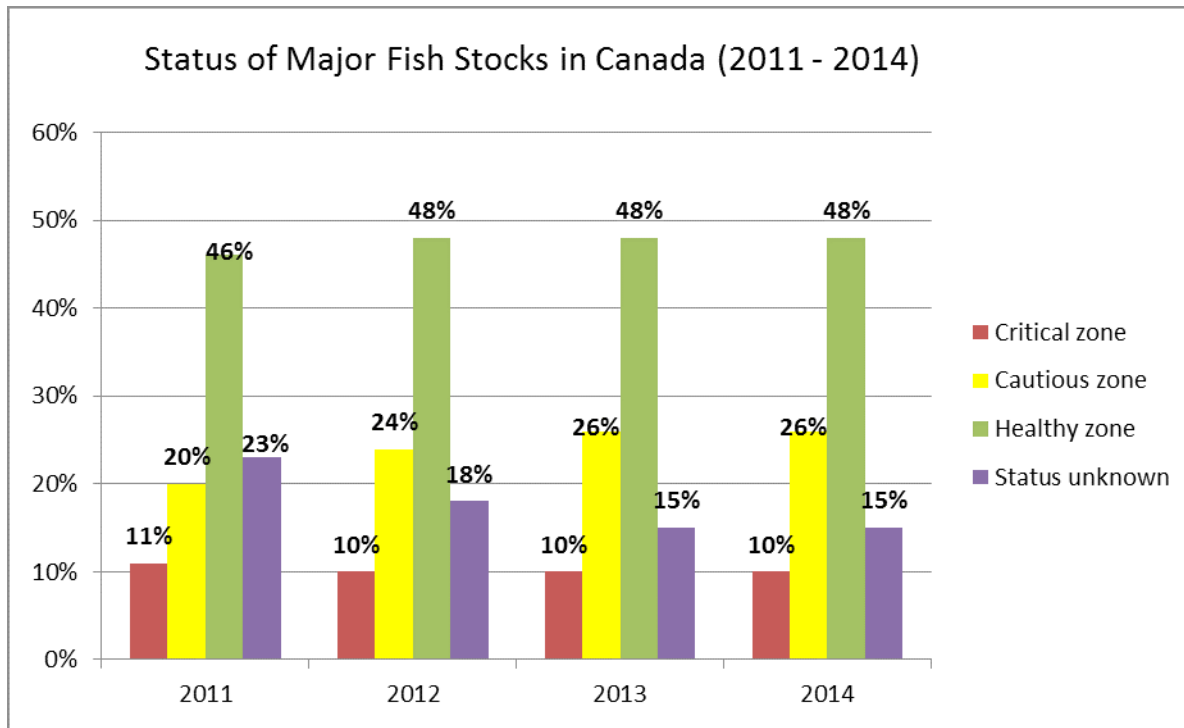
Source: Fisheries and Oceans Canada data accessed through Environment and Climate Change Canada

Interpretation of Findings: "**Stable**" – In 2014, of the 155 major fish stocks assessed, 75 stocks (48%) were classified as healthy, 40 stocks (26%) were classified in the cautious zone, and 16 stocks (10%) were classified in the critical zone. The status of 24 stocks (15%) which were assessed was unknown. This proportion represents an almost identical pattern seen for the previous years. While the state of fish stocks in Canada remains stable, it is important to note that less than half of assessed stocks are classified as healthy.

Compound Indices Indicators[1]

Indicator 54: Biodiversity index
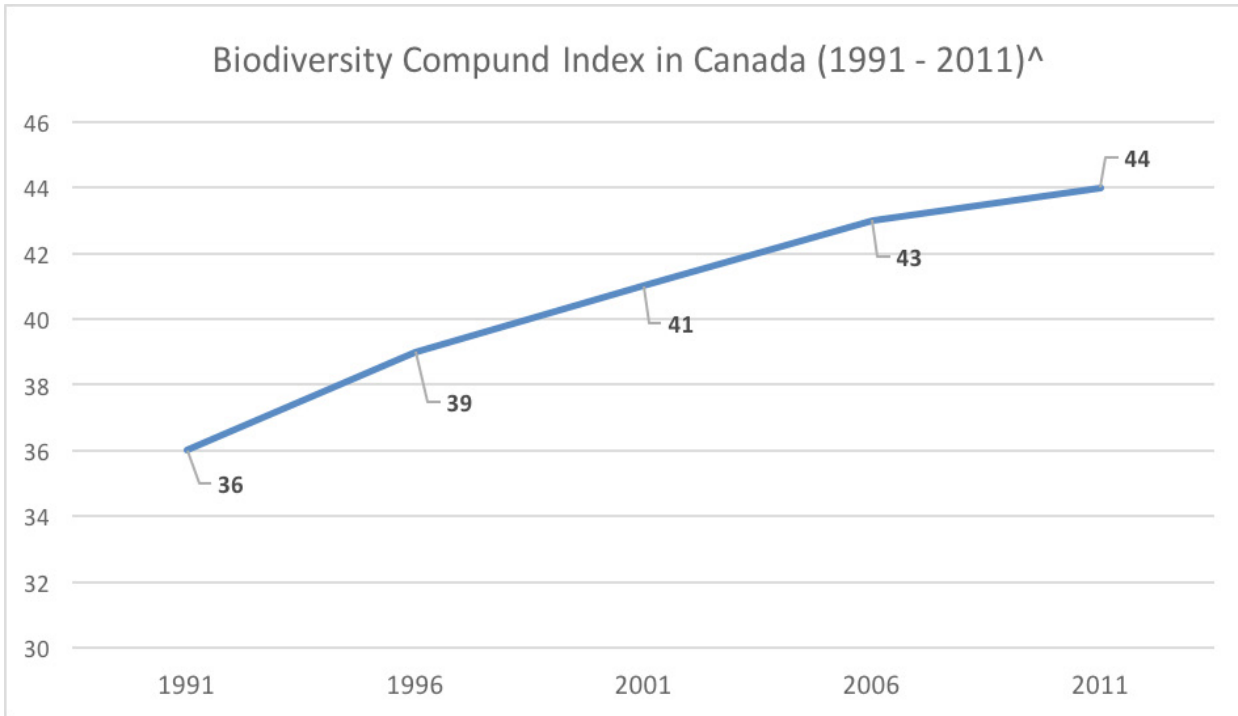
Biodiversity Compund Index in Canada (1991 - 2011)^

Source: Agriculture and Agri-Food Canada, Environmental Sustainability of Canadian Agriculture Report #4
^ The performance index scale is operationalized as follows: 0-19 = at risk, 20-39 = poor, 40-59 = moderate, 60-79 = good, 80-100 = desired.

Interpretation of Findings: "**Getting better**" - Between 1991 and 2011 there has been a consistent improvement in the biodiversity index across Canada from a 'poor' status in 1991 to a 'moderate' status in 2011.

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1 Results from multiple agri-environmental indicators related to soil, water, air quality and biodiversity were incorporated into performance indices by Agriculture and Agri-Food Canada. These indices (indicators 54 to 57) draw broad, national-level observations on the status and trends of agri-environmental sustianbility of the agriculture and agri-food sector. Please see full report for more detailed information about data collection methods.

Indicator 55: Soil quality index

Soil Quality Compound Index in Canada (1991 - 2011)^

Source: Agriculture and Agri-Food Canada, Environmental Sustainability of Canadian Agriculture Report #4
^ The performance index scale is operationalized as follows: 0-19 = at risk, 20-39 = poor, 40-59 = moderate, 60-79 = good, 80-100 = desired.

Interpretation of Findings: "**Getting better**" - The soil quality index has improved over time between 1991 and 2011 from 67 to 77 ('good' status).

Indicator 56: Water quality index
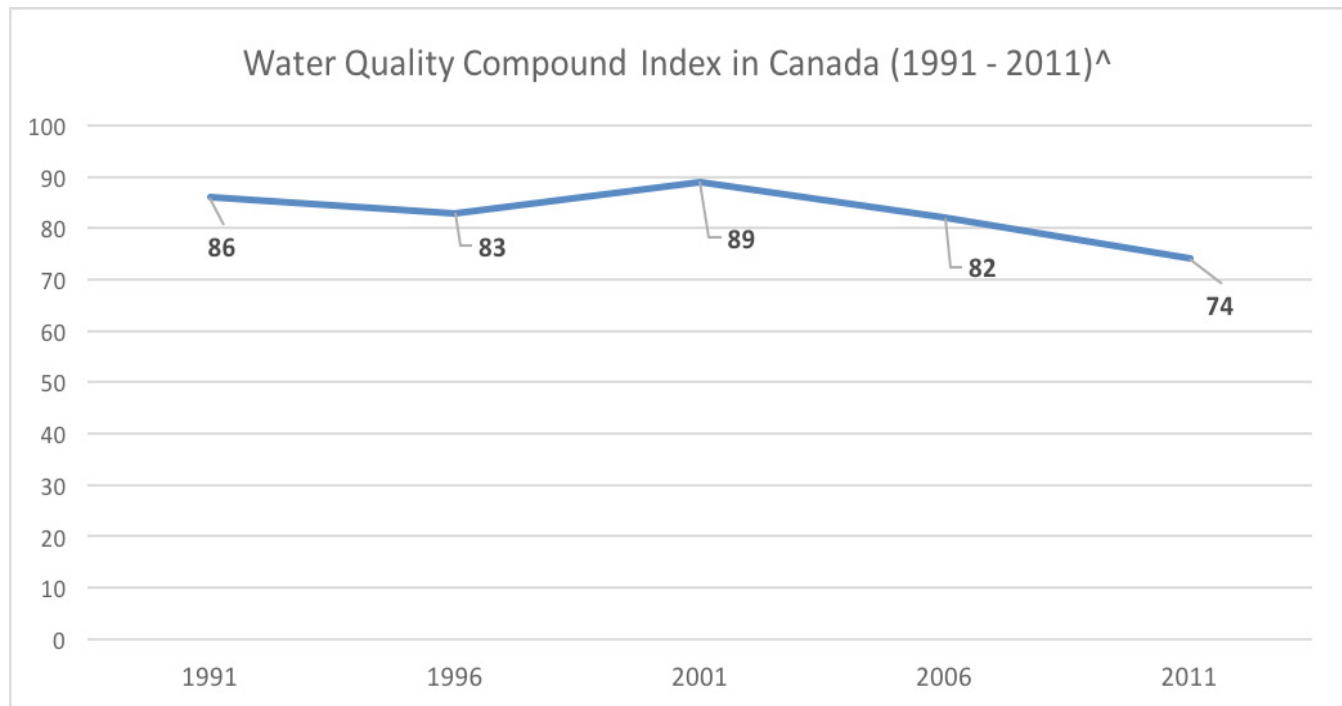
Water Quality Compound Index in Canada (1991 - 2011)^

[Chart showing Water Quality Compound Index values over time:
- 1991: 86
- 1996: 83
- 2001: 89
- 2006: 82
- 2011: 74

Y-axis ranges from 0 to 100 in increments of 10]

Source: Agriculture and Agri-Food Canada, Environmental Sustainability of Canadian Agriculture Report #4
^ The performance index scale is operationalized as follows: 0-19 = at risk, 20-39 = poor, 40-59 = moderate, 60-79 = good, 80-100 = desired.

Interpretation of Findings: "**Getting worse**" - Between 1991 and 2011 there was a decline in the water quality index across Canada from a 'desired' status in 1991 to a 'good' status in 2011.

Indicator 57: Air quality index
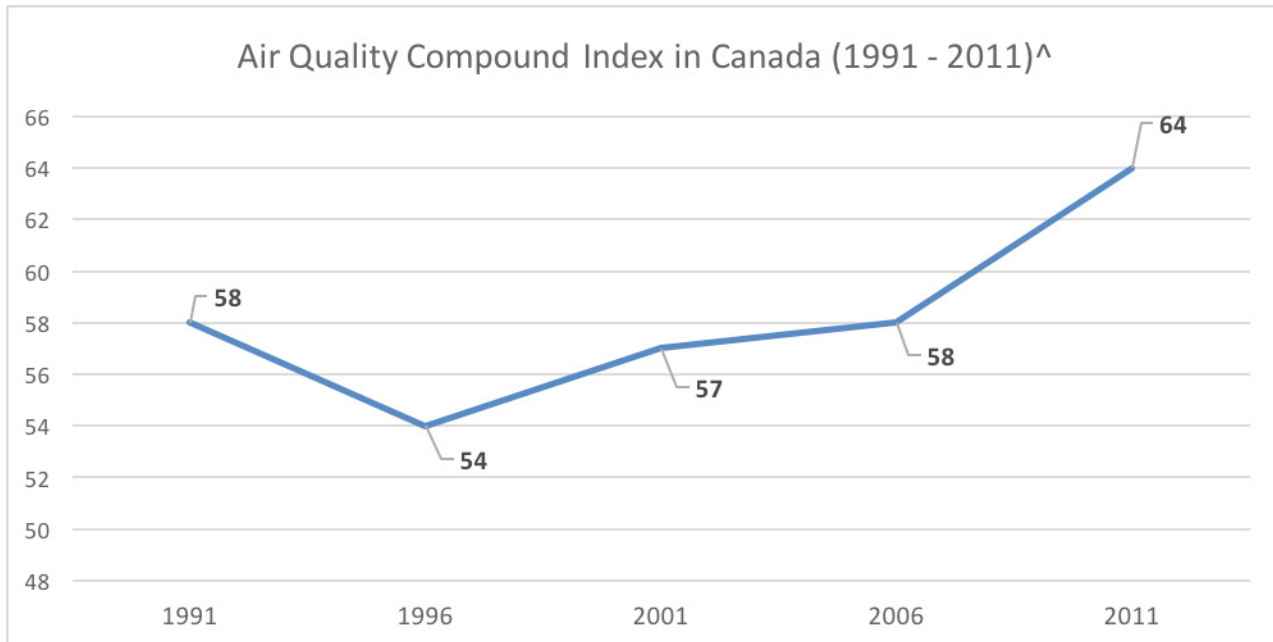
Air Quality Compound Index in Canada (1991 - 2011)^

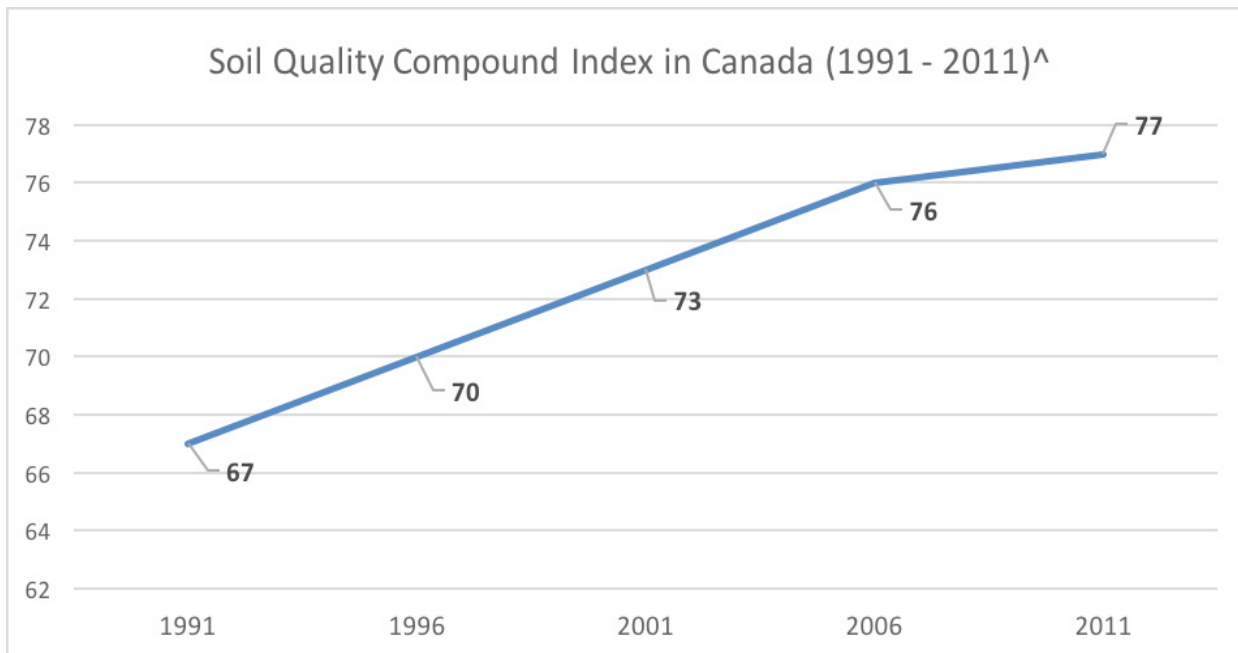| Year	Value
1991	58
1996	54
2001	57
2006	58
2011	64

Source: Agriculture and Agri-Food Canada, Environmental Sustainability of Canadian Agriculture Report #4
^ The performance index scale is operationalized as follows: 0-19 = at risk, 20-39 = poor, 40-59 = moderate, 60-79 = good, 80-100 = desired.

Interpretation of Findings: "**Getting better**" - Between 1991 and 2011 there was an improvement in the air quality index from a 'moderate' status in 1991 to a 'good' status in 2011.

Localizes Food Systems and Puts Control Locally

The localizes food systems principle speaks to reducing the distance between food providers and consumers, resisting dependency on remote and unaccountable corporations and rejecting dumping and inappropriate food aid. The puts control locally principle speaks to placing control in the hands of local food providers, recognizing the need to inhabit and to share territories and rejects the privatization of natural resources

Summary of Indicators

Theme	Indicator	Status
Networks and policy initiatives	58. Number of municipal food policy initiatives	**One point in time data***
	59. Number of food system networks	**One point in time data***
Breastfeeding	60. Breastfeeding initiation and maintenance	**Mixed**

*For this indicator we were only able to extract data from one point in time. We expect that this data will continue to be collected on a regular basis; therefore this current data point will act as the baseline for future reports.

Networks and Policy Initiatives Indicators

Indicator 58: Number of municipal food policy initiatives

"**One point in time data**" – As of 2013, there were 64 food policy initiatives across Canada (MacRae & Donahue, 2013).

For additional reading on this indicator, please see:

Clancy, K., Hammer, J., & Lippoldt, D. (2007). Food policy councils: past, present and future. In C. Henrichs & T. Lyson (Eds.), Remaking the North American food system: Strategies for sustainability (144-162). Nebraska: University of Nebraska Press.

Schiff, R. (2008). The role of food policy councils in developing sustainable food systems. Journal of Hunger & Environmental Nutrition, 3(2-3), 206-228.

Indicator 59: Number of food system networks

"**One point in time data**" – There are currently 16 provincial or territorial food system networks in Canada representing all provinces in Canada and two of the three territories (i.e., Nunavut and Yukon) (Food Secure Canada, 2016).

For additional reading on this indicator, please see:

Levkoe, C. Z. (2015). Strategies for forging and sustaining social movement networks: A case study of provincial food networking organizations in Canada. Geoforum, 58, 174-183.

Indicator 60: Breastfeeding initiation and maintenance

Breastfeeding in Canada (2010 - 2012)^

Year	Breastfeeding initiation	Exclusive breastfeeding, at least 6 months
2010	87.2%	27.7%
2011	88.4%	27.8%
2012	90.3%	24.2%
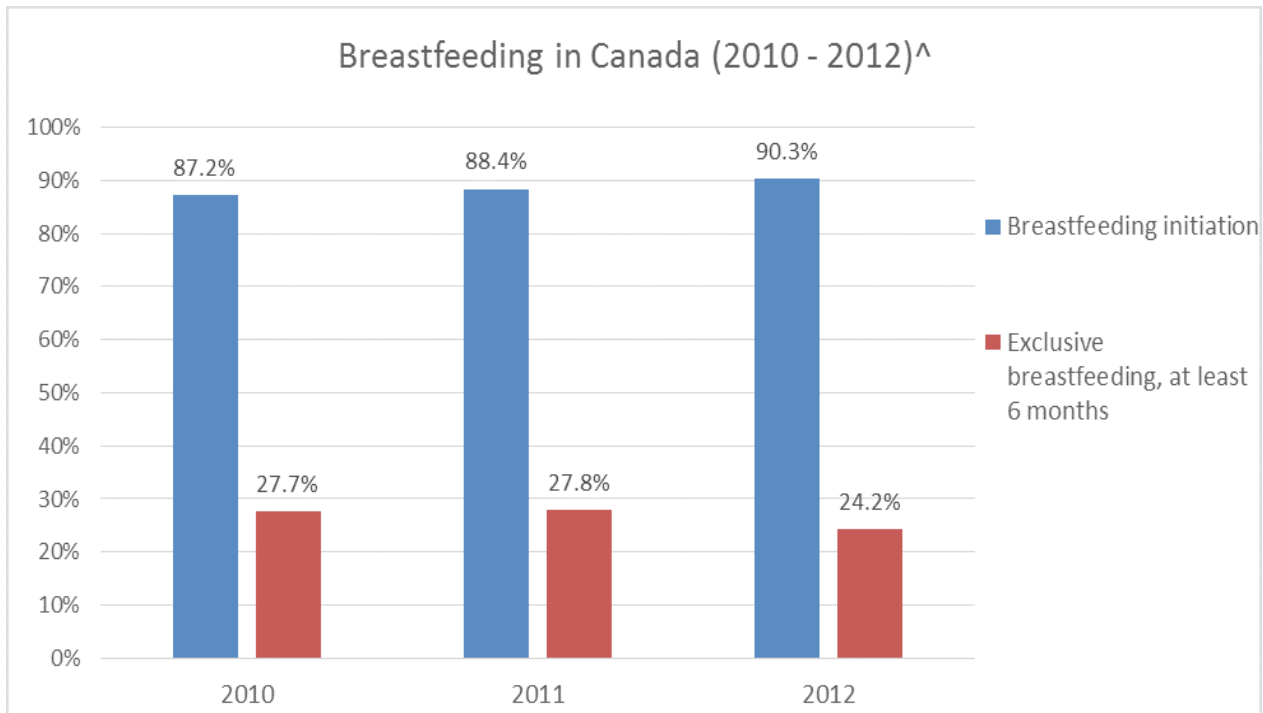
Source: Statistics Canada, Canadian Community Health Survey
^ Certain exclusions apply to this data (please see 'data specifics' for this indicator in Appendix B).

Interpretation of Findings: "**Mixed**" – The proportion of mothers initiating breastfeeding rose from 87.2% in 2010 to 90.3% in 2012. During this same time period, the proportion of mothers who exclusively breastfed for at least 6 months decreased from 27.7% in 2010 to 24.2% in 2012.

Builds Knowledge and Skills

This principle speaks to building on traditional knowledge, using research to support and pass on this knowledge to future generations and the rejection of technologies that undermine or contaminate local food systems

Summary of Indicators

Theme	Indicator	Status
Funded projects	61. Number of food system related awarded grants through federal government granting agencies	Mixed

Funded Projects Indicator

Indicator 61: Number of food system awarded grants through the Social Sciences and Humanities Research Council (SSHRC)

Number of Awarded 'Food System' Projects (1998-2015) by SSHRC^
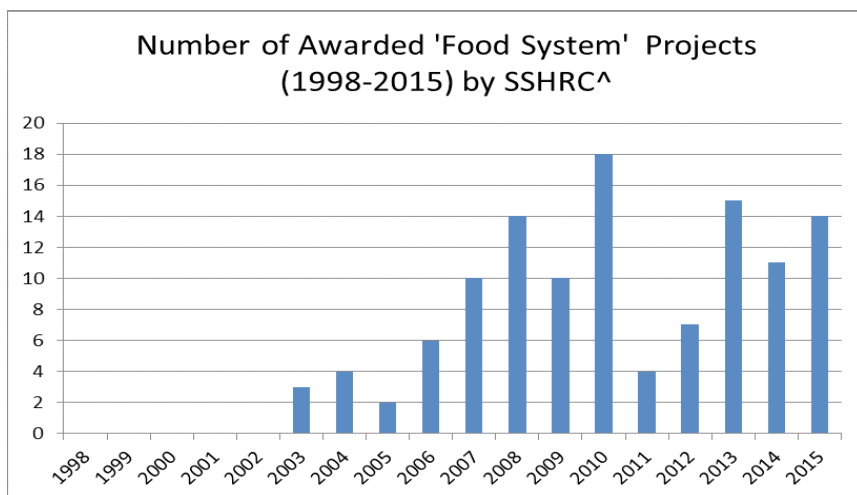
Source: Social Sciences and Humanities Research Council of Canada, Awards Search Engine
^ This data was collected by searching the SSHRC awards search engine for projects which had the term 'food system' in either the title of the grant or the associated grant keywords.

Interpretation of Findings: "**Mixed**" – Between 1998 to 2015, the number of 'food system' projects awarded grant funding through the Social Sciences and Humanities Research Council of Canada increased from 0 projects in 1998 to 14 projects in 2015. As shown in the graph below, the total funding awarded for these projects also increased during this time period. In 2015, just under a million dollars in funding was awarded to 'food system' grants ($964,818). While the overall dollar value of funding has increased, the proportion of total funding allocated to food system grants is less than 1 million out of 353.3 million dollars in SSHRC funding allocated in 2015, and the amount of funding granted varies considerably from year to year.
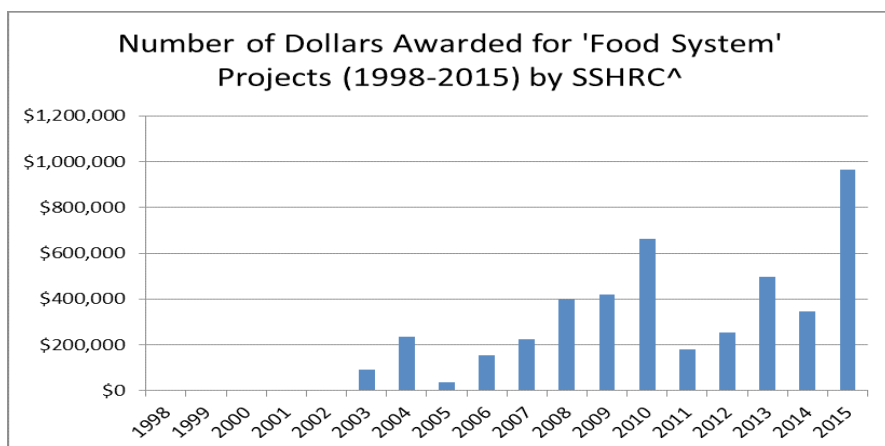
Number of Dollars Awarded for 'Food System' Projects (1998-2015) by SSHRC^

Source: Social Sciences and Humanities Research Council of Canada, Awards Search Engine
^ These values represent the amount of money paid out to each grant in each individual year.

Food is Sacred

This principle speaks to recognizing that food is a gift of life, and should not be squandered. It asserts that food cannot be commodified

We did not find any indicators which we felt could represent this principle.

Section 4: Data Gaps

There were a number of indicators which we wanted to include in this Food Counts Report Card, but could not because sufficient data was not available or it required primary or secondary data collection and/or analysis to include.

We have listed these indicators below as "wish list" indicators. Our wish list outlines knowledge gaps that, if filled, could support a more comprehensive understanding of our food system.

Summary of Wish List Indicators

Theme	Indicator
Food access	Cost of public transportation
	Monthly cost of a nutritious food basket per person
	Number of school meal programs
Poverty/income	Social assistance rates
	Social housing availability/waitlists
Agriculture-related	Farm animal welfare certification
	Proportion of energy used for growing, storing, processing food that is renewable
	Proportion of various crops which are genetically modified
	Area dedicated to urban agriculture
Local food processing	Various measures of local food processing (e.g., number of abattoirs, number of businesses milling flour)
	Number of food hubs
Local food purchasing	Direct farm-to-consumer sales
	Percentage of consumers buying local food
	Institutional local food procurement
	Redundant trade
Participatory initiatives	Number of community supported agriculture partnerships (CSAs)
	Number of farmer markets
	Number of farm to school programs
	Number of school gardens and community gardens
	Number of student nutrition programs
	Number of community kitchens
	Number of seed banks and seed libraries
	Number of urban food harvesting projects
	Number of food and farming co-operatives

Summary of Wish List Indicators Continued

Theme	Indicator
Networks and policy initiatives	Number of food systems organizations/associations
Access to primary food production resources	Land for small scale producers and industries related to agriculture
	Access/control of seeds
	Incidence of land grabbing
Food literacy	Food skills and food literacy programs
Farmer education	Funding for farmer led research
	Federal training and support programs for new farmers
	Participatory plant research and breeding
Elementary/ secondary education	Number of food system education programs, courses, curriculum

It would also be important to operationalize indicators to assess the following areas within the Canadian food system: wild food resources, wild fisheries and aquaculture, cultural dimensions of food, corporate concentration in the food system, recycling of food packaging, food labelling and advertising.

For the following wish list indicators below, the data currently available did not meet our selection criteria for this report, but we have provided references/links to this data for those who wish to access what is available.

Social assistance rates

Please see the following "Welfare in Canada" reports:

Caledon Institute of Social Policy. (2016). Welfare in Canada, 2015. Available at: http://www.caledoninst.org/Publications/PDF/1109ENG.pdf.

Caledon Institute of Social Policy. (2015). Welfare in Canada, 2014. Available at: http://www.caledoninst.org/Publications/PDF/1086ENG.pdf.

Caledon Institute of Social Policy. (2014). Welfare in Canada, 2013. Available at: http://www.caledoninst.org/Publications/PDF/1057ENG.pdf.

Caledon Institute of Social Policy. (2013). Welfare in Canada, 2012. Available at: http://www.caledoninst.org/Publications/PDF/1031ENG.pdf.

Number of CSAs

The following resources provide information on CSA farms across some of the provinces, but national-level data is not yet available.

Atlantic Canadian Organic Regional Network (ACORN)

Ontario CSA Directory

CSA Manitoba

Farm Folk City Folk BC List

Number of Farmers Markets

The following organizations below provide information on farmers markets throughout some of the provinces:

Association des Marchés publics du Québec

Alberta Farmers' Markets Association

British Columbia Association of Farmers' Markets

Direct Farm Manitoba

Farmers' Markets Ontario

New Brunswick Tourism – Farmers' Markets Listing

Nova Scotia Farmers' Markets

Saskatchewan Farmers' Markets

St John's Newfoundland – Farmers' Market

Genetically modified organisms (GMOs)

For information on genetically modified organisms (GMOs) in Canada, please see the GMO Inquiry reports.

Statistics Canada currently provides some statistics for GMOs in Quebec and Ontatio. We would like this information for all of Canada and for other crops.

Next Steps

The next step for this report card is to engage in an ongoing collaborative peer-review process as it is disseminated to various audiences. We see this report card as a working document which can be updated and revised based on feedback from academics, practitioners, community members and policy makers. If you have comments, questions, or would like to suggest additional data sources or indicators, please fill out the Food Counts Report Card Feedback Form available at: https://fledgeresearch.ca/foodcounts/.

Moreover, during the process of finalizing this report, more recent data points have become available for some indicators (e.g., 2016 Census of Agriculture data) and it is expected that further data points will become available shortly. This report card will act as a benchmark and future versions will include updated data as it becomes available.

Agricultural stream: the temporary foreign worker can be from any country and the production must be included on the National Commodities List

Class I food recall: a situation in which there is a reasonable probability that the use of, or exposure to, a violative product will cause serious adverse health consequences or death.

Class II food recall: a situation in which the use of, or exposure to, a violative product may cause temporary adverse health consequences or where the probability of serious adverse health consequences is remote.

Class III food recall: a situation in which the use of, or exposure to, a violative product is not likely to cause any adverse health consequences.

Consumer price index: the CPI is not a cost-of-living index. The objective behind a cost-of-living index is to measure changes in expenditures necessary for consumers to maintain a constant standard of living. The idea is that consumers would normally switch between products as the price relationship of goods changes. If, for example, consumers get the same satisfaction from drinking tea as they do from coffee, then it is possible to substitute tea for coffee if the price of tea falls relative to the price of coffee. The cheaper of the interchangeable products may be chosen. We could compute a cost-of-living index for an individual if we had complete information about that person's taste and spending habits. To do this for a large number of people, let alone the total population of Canada, is impossible. For this reason, regularly published price indexes such as the Consumer Price Index are based on the fixed-basket concept rather than the cost-of-living concept.

Couple family: a couple family consists of a couple living together (married or common-law, including same-sex couples) living at the same address with or without children. Same-sex couples reporting as couples are counted as couple families (as of 2001).

Farm operator: those persons responsible for the management decisions in operating an agricultural operation. They can be owners, tenants or hired managers of the agricultural operation, including those responsible for management decisions pertinent to particular aspects of the farm — planting, harvesting, raising animals, marketing and sales, and making capital purchases and other financial decisions. Not included are accountants, lawyers, veterinarians, crop advisors, herbicide consultants, etc. who make recommendations affecting the agricultural operation but are not ultimately responsible for management decisions.

Gross farm receipts: gross farm receipts include receipts from all agricultural products sold and program payments and custom work receipts. Sales of capital items (fe.g., quota, land, machinery) and receipts from the sale of any goods bought only for retail sales are not included in gross farm receipts.

Hatchery supply flocks: operations that produce hatching eggs for both egg and meat type birds. Layers in hatchery supply flocks are estimated by Statistics Canada based on the number of birds (broilers) provided by Canadian

Broiler Hatching Egg Marketing Agency, information on egg sets from Canadian Egg Marketing Agency (CEMA) and an average rate of lay for each type of bird.

LIM: the LIM is a fixed percentage (50%) of median adjusted household income, where "adjusted" indicates that household needs are taken into account. Adjustment for household sizes reflects the fact that a household's needs increase as the number of members increases.

Lone-parent family: a lone-parent family is a family with only one parent, male or female, and with at least one child.

Moderate food insecurity: households experiencing moderate food insecurity reported compromise in quality and/or quantity of food consumed among adults and/or children on Statistics Canada's Household Food Security Survey Module.

Net farm income: the net farm income accounts are designed to provide an annual measure of income returned to the operators of agricultural businesses from the production of agricultural commodities. The numbers are used to assess the state of the agricultural industry and to form the basis of various policy options.

Non-registered flocks: operations with fewer birds than the limits set by the provincial egg marketing boards. These limits vary by province and can range from 100 to 500 birds. Layer numbers for the non-registered flocks are estimated using Census data.

North American Industry Classification System (NAICS): the NAICS is used by businesses and governments to classify business establishments according to the type of economic activity (process of production) in Canada, Mexico and the United States.

Person not in census family: a person not in census families is an individual who is not part of a census family, couple family or lone-parent family. Persons not in census families may live with their married children or with their children who have children of their own. They may be living with a family to whom they are related or unrelated. They may also be living alone or with other non-family persons.

Registered flocks: operations that have to be registered with and provide information to provincial egg marketing boards. Layer numbers in registered flocks are supplied by the Canadian Egg Marketing Agency (CEMA), the regulatory board for the egg producing industry. The agency, in turn, receives data from the provincial egg marketing boards. These data are used directly in the estimates without adjustments.

Seasonal Agricultural Worker Program: the temporary foreign worker must be from Mexico or the participating Caribbean countries and the production must be included on the National Commodities List.

Severe food insecurity: households experiencing severe food insecurity reported reduced food intake and disrupted eating patterns among adults and/or children on Statistics Canada's Household Food Security Survey Module.

Stream for high-wage positions: the production is not included on the National Commodities List and the temporary foreign worker can be hired for any high-wage agricultural position.

Stream for low-wage positions: the production is not included on the National Commodities List and the temporary foreign worker can be hired for a low-wage agricultural position.

Appendix B: Full Citation Details

Indicator 1: Fruits and vegetable consumption, 5 times or more per day

Full Source Citation: Statistics Canada. *Table 105-0501 Health indicator profile, annual estimates, by age group and sex, Canada, provinces, territories, health regions (2013 boundaries) and peer groups, occasional*. CANSIM (database). http://www5.statcan. gc.ca/cansim/a26?lang=eng&id=1050501 (accessed July 4, 2016).

Data Specifics: This data is from Statistics Canada's Canadian Community Health Survey (CCHS). The CCHS covers the population 12 years of age and over living in the ten provinces and three territories. The following groups are excluded from the survey's coverage: persons living on reserves and other Aboriginal settlements in the provinces; full-time members of the Canadian Forces; the institutionalized population and persons living in the Quebec health regions of Région du Nunavik and Région des Terres-Cries-de-la-Baie-James. Altogether, these exclusions represent less than 3% of the Canadian population aged 12 and over.

Indicator 2: Fruits and vegetable consumption, 5 times or more per day by Aboriginal Identity

Full Source Citation: Statistics Canada. *Table 105-0512 - Health indicator profile, by Aboriginal identity, age group and sex, four year estimates, Canada, provinces and territories, occasional (rate)*. CANSIM (database). http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=1050512 (accessed July 4, 2016).

Data Specifics: This data is from Statistics Canada's Canadian Community Health Survey (CCHS). The CCHS covers the population 12 years of age and over living in the ten provinces and three territories. The following groups are excluded from the survey's coverage: persons living on reserves and other Aboriginal settlements in the provinces; full-time members of the Canadian Forces; the institutionalized population and persons living in the Quebec health regions of Région du Nunavik and Région des Terres-Cries-de-la-Baie-James. Altogether, these exclusions represent less than 3% of the Canadian population aged 12 and over.

Indicator 3: Food availability (select categories)

Full Source Citation: Statistics Canada. *Table 002-0011 - Food available in Canada, annual (kilograms per person, per year unless otherwise noted)*. http://www5.statcan. gc.ca/cansim/a26?lang=eng&id=20011 (accessed July 15, 2016).

Data Specifics: This data is compiled by Statistics Canada through various survey sources.

Indicator 4: Food expenditures

Full Source Citation: Statistics Canada. *Table 203-0021 - Survey of household spending (SHS), household spending, Canada, regions and provinces, annual (dollars)*. CANSIM (database). http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=2030021 (accessed July 4, 2016).

Data Specifics: This data is from Statistics Canada's <u>Survey of Household Spending</u>.

Indicator 5: Consumer price index

Full Source Citation: Statistics Canada. *Table 326-0021 - Consumer Price Index, annual (2002=100)*. CANSIM (database). <u>http://www5.statcan.gc.ca/cansim/ a26?id=3260021 </u>(accessed July 7, 2016).

Data Specifics: This data is from Statistics Canada's <u>Consumer Price Index</u>.

Indicator 6: Food waste

Full Source Citation: Value Chain Management International. (2014). *"$27 billion" revisited: The cost of Canada's annual food waste*. Retrieved from: <u>http://vcm-international.com/wp-content/uploads/2014/12/Food-Waste-in-Canada-27-Billion-Revisited-Dec-10-2014.pdf</u>.

Indicator 7: Food safety

Full Source Citation: Canadian Food Inspection Agency. (2016). *Complete listing of all recalls and allergy alerts*. Data retrieved from: <u>http://www.inspection.gc.ca/about-the-cfia/newsroom/food-recall-warnings/complete-listing/eng/1351519587174/1351519588 221</u>.

Data Specifics: Data was collected on the number of food recall warnings distributed to the public per year between 2013 and 2016, under all three class warnings.

Indicator 8: Families living below the low income measure

Full Source Citation: Statistics Canada. *Table 111-0015 - Family characteristics, Low Income Measures (LIM), by family type and family type composition, annual (number unless otherwise noted)*. CANSIM (database). <u>http://www5.statcan.gc.ca/cansim/ a26?lang=eng&id=1110015</u> (accessed July 4, 2016).

Data Specifics: This data is from Statistics Canada's <u>Annual Income Estimates for Census Families and Individuals</u>.

Indicator 9: Median annual family income

Full Source Citation: Statistics Canada. *Table 111-0015 - Family characteristics, Low Income Measures (LIM), by family type and family type composition, annual (number unless otherwise noted)*. CANSIM (database). <u>http://www5.statcan.gc.ca/cansim/ a26?lang=eng&id=1110015</u> (accessed July 4, 2016).

Data Specifics: This data is from Statistics Canada's <u>Annual Income Estimates for Census Families and Individuals</u>.

Indicator 10: Unemployment rate

Full Source Citations:
Statistics Canada. *Table 109-5334 - Unemployment rate, Canada, provinces, health regions (2014 boundaries) and peer groups, annual (percent)*. CANSIM (database). <u>http:// www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=1095334&&pattern=&st-ByVal=1&p1=1&p2=31&tabMode=dataTable&csid=</u> (accessed July 4, 2016).

Statistics Canada. *Table 282-0002 11 - Labour force survey estimates (LFS), by sex and detailed age group, annual*. CANSIM (database). http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=2820002 (accessed January 25, 2017).

Data Specifics: This data is from Statistics Canada's Labour Force Survey.

Indicator 11: Moderate and severe food insecurity by household composition

Full Source Citation: Statistics Canada. *Table 105-0545 - Household food insecurity measures, by living arrangement, Canada, provinces and territories, occasional (number unless otherwise noted)*. CANSIM (database). http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=1050545 (accessed July 4, 2016).

Data Specifics: This data is from Statistics Canada's Canadian Community Health Survey (CCHS). The CCHS covers the population 12 years of age and over living in the ten provinces and three territories. The following groups are excluded from the survey's coverage: persons living on reserves and other Aboriginal settlements in the provinces; full-time members of the Canadian Forces; the institutionalized population and persons living in the Quebec health regions of Région du Nunavik and Région des Terres-Cries-de-la-Baie-James. Altogether, these exclusions represent less than 3% of the Canadian population aged 12 and over.

Indicator 12: Moderate and severe food insecurity by Aboriginal identity

Full Source Citation: Statistics Canada. *Table 577-0009 - Aboriginal peoples survey, food security, by Aboriginal identity, age group, sex, and number of persons in household, population aged 6 years and over, Canada, provinces and territories, occasional*. CANSIM (database). http://www5.statcan.gc.ca/cansim/a26;jsessionid=00DE59590FBB2DEBD7FDF4BF1C061391?lang=eng&retrLang=eng&id=5770009&tabMode=dataTable&srchLan=-1&p1=-1&p2=9 (accessed July 7, 2016).

Data Specifics: This data is from Statistics Canada's Canadian Community Health Survey (CCHS). The CCHS covers the population 12 years of age and over living in the ten provinces and three territories. The following groups are excluded from the survey's coverage: persons living on reserves and other Aboriginal settlements in the provinces; full-time members of the Canadian Forces; the institutionalized population and persons living in the Quebec health regions of Région du Nunavik and Région des Terres-Cries-de-la-Baie-James. Altogether, these exclusions represent less than 3% of the Canadian population aged 12 and over.

Indicator 13: Number of individuals assisted by food banks

Full Source Citations:

Food Banks Canada. (2008). *HungerCount 2008*. Available at https://www.foodbankscanada.ca/getmedia/35265e3e-e325-472e-925b-595ef1732206/hunger-count-2008.pdf.aspx?ext=.pdf.

Food Banks Canada. (2009). *HungerCount 2009*. Available at https://www.foodbankscanada.ca/getmedia/a4a749bb-1019-49a1-9210-9f0ebe5e081b/hunger-count-2009.pdf.aspx?ext=.pdf.

Food Banks Canada. (2010). *HungerCount 2010*. Available at https://www.foodbankscanada.ca/getmedia/12a3e485-4a4e-47d9-9b90-ff8eff0ef89d/hunger-

count-2010.pdf.aspx?ext=.pdf.

Food Banks Canada. (2011). *HungerCount 2011*. Available at https://www.foodbankscanada.ca/getmedia/3f717aba-27f7-4ea0-9b78-36da94dcfe4e/HungerCount_2011_EN-REV.pdf.aspx?ext=.pdf.

Food Banks Canada. (2012). *HungerCount 2012*. Available at https://www.foodbankscanada.ca/getmedia/4a77c6ac-a479-4fd0-8b78-950e709c14f6/HungerCount2012_revised.pdf.aspx?ext=.pdf.

Food Banks Canada. (2013). *HungerCount 2013*. Available at https://www.foodbankscanada.ca/getmedia/29523a26-6f50-4c60-903d-458c9e7fece4/HungerCount2013_revised2015_1.pdf.aspx?ext=.pdf.

Food Banks Canada. (2014). *HungerCount 2014*. Available at https://www.foodbankscanada.ca/getmedia/d8b36130-cc83-46ba-8183-d33d484c7591/HungerCount2014_revised.pdf.aspx?ext=.pdf.

Food Banks Canada. (2015). *HungerCount 2015*. Available at https://www.foodbankscanada.ca/getmedia/cd7534f7-e411-4aed-bbe4-ea72e791dfd6/HungerCount2015_singles_1.pdf.aspx?ext=.pdf.

Food Banks Canada. (2016). *HungerCount 2016*. Available at https://www.foodbankscanada.ca/getmedia/6173994f-8a25-40d9-acdf-660a28e40f37/HungerCount_2016_final_singlepage.pdf.aspx?ext=.pdf.

Data Specifics: Please see individual HungerCount reports for data collection methods.

Indicator 14: Number of farms

Full Source Citation: Statistics Canada. *Table 004-0005 - Census of Agriculture, farms classified by size of farm, Canada and provinces, every 5 years (number)*. CANSIM (database). http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=40005 (accessed June 30, 2016).

Data Specifics: This data is from Statistics Canada's Census of Agriculture.

Indicator 15: Number of farms by size

Full Source Citation: Statistics Canada. *Table 004-0005 - Census of Agriculture, farms classified by size of farm, Canada and provinces, every 5 years (number)*. CANSIM (database). http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=40005 (accessed June 30, 2016).

Data Specifics: This data is from Statistics Canada's Census of Agriculture.

Indicator 16: Number of farms by operating arrangement

Full Source Citation: Statistics Canada. *Table 004-0007 - Census of Agriculture, farms classified by operating arrangements, Canada and provinces, every 5 years (number)*. CANSIM (database). http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=40007 (accessed June 30, 2016).

Data Specifics: This data is from Statistics Canada's Census of Agriculture.

Indicator 17: Farm land tenure

Full Source Citation: Statistics Canada. *Table 004-0001 - Census of Agriculture, number and area of farms and farmland area by tenure, Canada and provinces, every 5 years (number unless otherwise noted)*. CANSIM (database). http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=40001 (accessed June 30, 2016).

Data Specifics: This data is from Statistics Canada's Census of Agriculture. While this information is available since 1991, land tenure data prior to 2006 is not directly comparable due to conceptual changes to data collection in 2006.

Indicator 18: Type of farm

Full Source Citation: Statistics Canada. *Table 004-0014 - Census of Agriculture, farms classified by the North American Industry Classification System (NAICS), Canada and provinces, every 5 years (number)*. CANSIM (database). http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=40014 (accessed June 30, 2016).

Data Specifics: This data is from Statistics Canada's Census of Agriculture.

Indicator 19: Farms by commodities sold

Full Source Citation: Statistics Canada. *Table 004-0015 - Census of Agriculture, focus on selected commodities, Canada and provinces, every 5 years (number)*. CANSIM (database). http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=40015 (accessed June 30, 2016).

Data Specifics: This data is from Statistics Canada's Census of Agriculture.

Indicator 20: Farm area use of land

Full Source Citation: Statistics Canada. *Table 004-0002 - Census of Agriculture, total area of farms and use of farm land, Canada and provinces, every 5 years (number unless otherwise noted)*. CANSIM (database). http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=40002 (accessed June 30, 2016).

Data Specifics: This data is from Statistics Canada's Census of Agriculture.

Indicator 21: Production of livestock

Full Source Citations:

Statistics Canada. *Table 003-0026 - Cattle and calves, farm and meat production, annual (head unless otherwise noted)*. CANSIM (database). http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=30026 (accessed June 30, 2016).

Statistics Canada. *Table 003-0028 - Hogs, sheep and lambs, farm and meat production, annual (head unless otherwise noted)*. CANSIM (database). http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=30028 (accessed June 30, 2016).

Data Specifics: This data is from Statistics Canada's Livestock Survey.

Indicator 22: Production of poultry

Full Source Citation: Statistics Canada. *Table 003-0018 - Production, disposition and*

farm value of poultry meat, annual. CANSIM (database). http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=0030018 (accessed June 30, 2016).

Data Specifics: This data is from Statistics Canada's Production of Poultry and Eggs.

Indicator 23: Production of eggs

Full Source Citation: Statistics Canada. *Table 003-0020 - Production and disposition of eggs, annual (layers unless otherwise noted)*. CANSIM (database). http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=30020 (accessed June 30, 2016).

Data Specifics: This data is from Statistics Canada's Production of Poultry and Eggs.

Indicator 24: Number of people employed in agriculture

Full Source Citation: Statistics Canada. *Table 282-0088 - Labour force survey estimates (LFS), employment by North American Industry Classification System (NAICS), seasonally adjusted and unadjusted, monthly (persons x 1,000)*. CANSIM (database). http://www5.statcan.gc.ca/cansim/a26?id=2820088 (accessed January 25, 2017).

Data Specifics: This data is from Statistics Canada's Labour Force Survey. The data used in this indicator represents the number of individuals employed in agriculture in the month of August of each year (unadjusted for seasonal variation).

Indicator 25: Proportion of farms classified by total gross farm receipts

Full Source Citation: Statistics Canada. *Table 004-0006 - Census of Agriculture, farms classified by total gross farm receipts at 2010 constant dollars, Canada and provinces, every 5 years (number)*. CANSIM (database). http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=40006 (accessed July 16, 2016).

Data Specifics: This data is from Statistics Canada's Census of Agriculture.

Indicator 26: Net farm income

Full Source Citation: Statistics Canada. *Table 002-0009 - Net farm income, annual (dollars x 1,000)*. CANSIM (database). http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=20009 (accessed July 16, 2016).

Data Specifics: This data is from Statistics Canada's Agriculture Economic Statistics.

Indicator 27: Farm debt

Full Source Citation: Statistics Canada. *Table 002-0008 - Farm debt outstanding, classified by lender, annual (dollars x 1,000)*. CANSIM (database). http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=20008 (accessed July 16, 2016).

Data Specifics: This data is from Statistics Canada's Farm Debt Outstanding Survey.

Indicator 28: Farm capital

Full Source Citations: Statistics Canada. 1991, 1996, 2001, 2006, 2011. Census of Agriculture [Canada] (public-use microdata file). Statistics Canada (producer). Using ODESI (distributor) through the University of Toronto Map & Data Library (accessed

August 12, 2017). All computations, use and interpretation of these data are entirely those of the author.

Data Specifics: This data is from Statistics Canada's <u>Census of Agriculture</u>.

Indicator 29: Median hourly wages of employees in agriculture

Full Source Citation: Statistics Canada. *Table 282-0071 - Labour force survey estimates (LFS), wages of employees by type of work, North American Industry Classification System (NAICS), sex and age group, unadjusted for seasonality, monthly (current dollars unless otherwise noted)*. CANSIM (database). <u>http://www5.statcan. gc.ca/cansim/a26?id=2820071</u> (accessed July 19, 2016).

Data Specifics: This data is from Statistics Canada's <u>Labour Force Survey</u>.

Indicator 30: Household income class for farm population

Full Source Citation: Statistics Canada. *Table 004-0100 - Socioeconomic overview of the farm population, farms with one or more operators by household income classes in the year prior to the census, every 5 years (number)*. CANSIM (database). <u>http://www5. statcan.gc.ca/cansim/a26?lang=eng&id=40100</u> (accessed July 16, 2016).

Data Specifics: This data is from Statistics Canada's <u>Agriculture–National Household Survey Linkage database</u>.

Indicator 31: Number of farm operators

Full Source Citation: Statistics Canada. *Table 004-0017 - Census of Agriculture, number of farm operators by sex, age and paid non-farm work, Canada and provinces, every 5 years (number)*. CANSIM (database). <u>http://www5.statcan.gc.ca/cansim/ a26?lang=eng&id=40017</u> (accessed July 4, 2016).

Data Specifics: This data is from Statistics Canada's <u>Census of Agriculture</u>.

Indicator 32: Age of farm operators

Full Source Citation: Statistics Canada. *Table 004-0017 - Census of Agriculture, number of farm operators by sex, age and paid non-farm work, Canada and provinces, every 5 years (number)*. CANSIM (database). <u>http://www5.statcan.gc.ca/cansim/ a26?lang=eng&id=40017</u> (accessed July 4, 2016).

Data Specifics: This data is from Statistics Canada's <u>Census of Agriculture</u>.

Indicator 33: Sex of farm operators

Full Source Citation: Statistics Canada. *Table 004-0017 - Census of Agriculture, number of farm operators by sex, age and paid non-farm work, Canada and provinces, every 5 years (number)*. CANSIM (database). <u>http://www5.statcan.gc.ca/cansim/ a26?lang=eng&id=40017</u> (accessed July 4, 2016).

Data Specifics: This data is from Statistics Canada's <u>Census of Agriculture</u>.

Indicator 34: Country of birth of farm operators

Full Source Citation: Statistics Canada. *Table 004-0129 - Socioeconomic overview*

of the farm population, farm operators and persons in the labour force by country of birth, every 5 years (number)*. CANSIM (database). http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=40129 (accessed July 16, 2016).

Data Specifics: This data is from Statistics Canada's Agriculture–National Household Survey Linkage database.

Indicator 35: Farm operators with paid non-farm work

Full Source Citation: Statistics Canada. *Table 004-0017 - Census of Agriculture, number of farm operators by sex, age and paid non-farm work, Canada and provinces, every 5 years (number)*. CANSIM (database). http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=40017 (accessed July 4, 2016).

Data Specifics: This data is from Statistics Canada's Census of Agriculture.

Indicator 36: Farm operator labour force activity

Full Source Citation: Statistics Canada. *Table 004-0125 - Socioeconomic overview of the farm population, characteristics of farm operators by sex and activity in the labour force, every 5 years (number unless otherwise noted)*. CANSIM (database). http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=40125 (accessed July 16, 2016).

Data Specifics: This data is from Statistics Canada's Agriculture–National Household Survey Linkage database.

Indicator 37: Average number of hours worked per week by farm operators on the farm

Full Source Citation: Statistics Canada. *Table 004-0241 - Census of Agriculture, number of farm operators by average number of hours per week worked for the agricultural operation in the calendar year prior to the census, every 5 years (number)*. CANSIM (database). http://www5.statcan.gc.ca/cansim/a26;jsessionid=4EECF76712CC0BF8EB14F249AE8E2B70?lang=eng&retrLang=eng&id=0040241&tabMode=dataTable&srchLan=-1&p1=-1&p2=9 (accessed July 16, 2016).

Data Specifics: This data is from Statistics Canada's Census of Agriculture.

Indicator 38: Distribution of farm population

Full Source Citation: Statistics Canada. *Table 004-0127 - Socioeconomic overview of the farm population, distribution in the total population and the farm population for the rural and urban centres population by sex and age, every 5 years (number unless otherwise noted)*. CANSIM (database). http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=40127 (accessed July 16, 2016).

Data Specifics: This data is from Statistics Canada's Agriculture–National Household Survey Linkage database.

Indicator 39: Number of people in SAWP program

Full Source Citation: Government of Canada, Annual Labour Market Impact Assessment Statistics 2008-2015. (2016). *Temporary Foreign Worker Program Labour Market Impact Assessment (LMIA) statistics: Annual statistics 2008-2015*.

Retrieved from: https://www.canada.ca/en/employment-social-development/services/foreign-workers/reports/2014/lmia-annual-statistics/agricultural.html?=undefined&wbdisable=true.

Indicator 40: Number of employees in food service, wholesale and manufacturing

Full Source Citation: Statistics Canada. *Table 281-0024 - Survey of Employment, Payrolls and Hours (SEPH), employment by type of employee and detailed North American Industry Classification System (NAICS), annual (persons)*. CANSIM (database). http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=2810024 (accessed July 16, 2016).

Data Specifics: This data is from Statistics Canada's Survey of Employment, Payrolls and Hours.

Indicator 41: Agricultural fatalities

Full Source Citation: Canadian Agricultural Injury Reporting (CAIR). (2016). *Agriculture-related fatalities in Canada*. Retrieved from: http://www.cair-sbac.ca/wp-content/uploads/2017/02/CASA-CAIR-Report-English-FINAL-Web.pdf.

Data Specifics: Please see Chapter 2 in the full report for data collection methods.

Indicator 42: Land management inputs on farms – average acres per farm reporting

Full Source Citation: Statistics Canada. *Table 004-0010 - Census of Agriculture, selected land management practices and tillage practices used to prepare land for seeding, Canada and provinces, every 5 years (number unless otherwise noted)*. CANSIM (database). http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=40010 (accessed July 7, 2016).

Data Specifics: This data is from Statistics Canada's Census of Agriculture.

Indicator 43: Farm water conservation practices

Full Source Citation: Statistics Canada. *Table 153-0144 - Number of farms by water and energy conservation practices, province and drainage region, occasional (number)*. CANSIM (database). http://www5.statcan.gc.ca/cansim/a26;jsessionid=F0AA8028B73F12283E310671A5CA989E?lang=eng&retrLang=eng&id=1530144&tabMode=dataTable&srchLan=-1&p1=-1&p2=9 (accessed July 15, 2016).

Data Specifics: This data is from Statistics Canada's Agricultural Water Survey.

Indicator 44: Water use, by industry

Full Source Citation: Statistics Canada. *Table 153-0116 - Physical flow account for water use, every 2 years (cubic metres)*. CANSIM (database). http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=1530116 (accessed July 15, 2016).

Data Specifics: This data is from Statistics Canada's Canadian System of Environmental-Economic Accounts - Physical Flow Accounts (PFA).

Indicator 45: Freshwater quality, by land use

Full Source Citation: Environment and Climate Change Canada. (2016). *Land use impacts on freshwater quality*. Retrieved from: https://www.ec.gc.ca/indicateurs-indicators/default.asp?lang=En&n=88872F95-1.

Data Specifics: Water quality data were assembled by Environment Canada from existing federal, provincial, territorial and joint water quality monitoring programs. Freshwater quality by land use category was assessed at 167 core sites throughout Canada's 16 drainage regions where human activity is most intensive using the Canadian Council of Ministers of the Environment's Water Quality Index. Five core sites have not had their land use categorized and are not included in this indicator. For further information on data collection methods, please see: https://www.ec.gc.ca/indicateurs-indicators/default.asp?lang=En&n=5D193531-1.

Indicator 46: Agricultural greenhouse gas emissions (crop and animal production)

Full Source Citation: Statistics Canada. *Table 153-0114 - Physical flow account for greenhouse gas emissions, annual (kilotonnes)*. CANSIM (database). http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=1530114 (accessed July 15, 2016).

Data Specifics: This data is from Statistics Canada's Canadian System of Environmental-Economic Accounts - Physical Flow Accounts (PFA).

Indicator 47: Farms reporting organic products for sale

Full Source Citation: Statistics Canada. *Table 004-0211- Census of Agriculture, organic products for sale every 5 years (number)*. CANSIM (database). http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=40211 (accessed July 16, 2016).

Data Specifics: This data is from Statistics Canada's Census of Agriculture.

Indicator 48: Households participating in composting kitchen waste

Full Source Citations: Statistics Canada. 2007, 2009, 2011, 2013. Household and the Environment Survey [Canada] (public-use microdata file). Statistics Canada (producer). Using ODESI (distributor) through the University of Toronto Map & Data Library (accessed August 24, 2017). All computations, use and interpretation of these data are entirely those of the author.

Data Specifics: This data is from Statistics Canada's Census of Agriculture.

Indicator 49: Hectares of forest deforested due to agriculture

Full Source Citation: Natural Resources Canada, Canadian Forest Service. (2016). *The state of Canada's forests: Annual report 2016*. Retrieved from: http://cfs.nrcan.gc.ca/pubwarehouse/pdfs/37265.pdf.

Data Specifics: Please see full report for data collection methods.

Indicator 50: Preservation land practices

Full Source Citation: Statistics Canada. *Table 004-0208 - Census of Agriculture, land practices and land features, every 5 years (number)*. CANSIM (database). http://www5.

statcan.gc.ca/cansim/a26?lang=eng&id=40208 (accessed July 15, 2016).

Data Specifics: This data is from Statistics Canada's Census of Agriculture.

Indicator 51: Protected land area

Full Source Citation: Canadian Council on Ecological Areas. (2016). *Trends in proportion of area protected, Canada, 1990 to 2015*. Made available through Environment and Climate Change Canada and retrieved from https://www.ec.gc.ca/indicateurs-indicators/default.asp?lang=en&n=478A1D3D-1.

Indicator 52: Protected marine area

Full Source Citation: Canadian Council on Ecological Areas. (2016). *Trends in proportion of area protected, Canada, 1990 to 2015*. Made available through Environment and Climate Change Canada and retrieved from: https://www.ec.gc.ca/indicateurs-indicators/default.asp?lang=en&n=478A1D3D-1.

Indicator 53: Major fish stocks status

Full Source Citation: Fisheries and Oceans Canada. (2016). *Status of major fish stocks, Canada, 2011 to 2015*. Made available through Environment and Climate Change Canada and retrieved from: https://www.ec.gc.ca/indicateurs-indicators/default.asp?lang=en&n=1BCD421B-1.

Indicator 54: Biodiversity index

Full Source Citation: Clearwater, R. L., Martin, T., & Hoppe, T. (2016). *Environmental sustainability of Canadian Agriculture: Agri-environmental indicator report series - Report #4.* Ottawa, Ontario: Agriculture and Agri-Food Canada.

Data Specifics: The agri-environmental performance index shows environmental performance state and trends over time, based on weighting the percentage of land in each indicator class, such that the index ranges from 0 (all agricultural land in the most undesirable category) to 100 (all land in the most desirable category). The performance index scale is operationalized as follows: 0-19 = at risk, 20-39 = poor, 40-59 = moderate, 60-79 = good, 80-100 = desired. Please see full report for data collection methods. An electronic copy of the report can be requested at: http://www.agr.gc.ca/eng/science-and-innovation/agricultural-practices/environmental-sustainability-of-canadian-agriculture-agri-environmental-indicator-report-series-report-4/?id=1467307820931.

Indicator 55: Soil quality index

Full Source Citation: Clearwater, R. L., Martin, T., & Hoppe, T. (2016). *Environmental sustainability of Canadian Agriculture: Agri-environmental indicator report series - Report #4.* Ottawa, Ontario: Agriculture and Agri-Food Canada.

Data Specifics: The agri-environmental performance index shows environmental performance state and trends over time, based on weighting the percentage of land in each indicator class, such that the index ranges from 0 (all agricultural land in the most undesirable category) to 100 (all land in the most desirable category). The performance index scale is operationalized as follows: 0-19 = at risk, 20-39 = poor, 40-59 = moderate, 60-79 = good, 80-100 = desired. Please see full report for data

collection methods. An electronic copy of the report can be requested at: http://www.agr.gc.ca/eng/science-and-innovation/agricultural-practices/environmental-sustainability-of-canadian-agriculture-agri-environmental-indicator-report-series-report-4/?id=1467307820931.

Indicator 56: Water quality index

Full Source Citation: Clearwater, R. L., Martin, T., & Hoppe, T. (2016). *Environmental sustainability of Canadian Agriculture: Agri-environmental indicator report series - Report #4.* Ottawa, Ontario: Agriculture and Agri-Food Canada.

Data Specifics: The agri-environmental performance index shows environmental performance state and trends over time, based on weighting the percentage of land in each indicator class, such that the index ranges from 0 (all agricultural land in the most undesirable category) to 100 (all land in the most desirable category). The performance index scale is operationalized as follows: 0-19 = at risk, 20-39 = poor, 40-59 = moderate, 60-79 = good, 80-100 = desired. Please see full report for data collection methods. An electronic copy of the report can be requested at: http://www.agr.gc.ca/eng/science-and-innovation/agricultural-practices/environmental-sustainability-of-canadian-agriculture-agri-environmental-indicator-report-series-report-4/?id=1467307820931.

Indicator 57: Air quality index

Full Source Citation: Clearwater, R. L., Martin, T., & Hoppe, T. (2016). *Environmental sustainability of Canadian Agriculture: Agri-environmental indicator report series - Report #4.* Ottawa, Ontario: Agriculture and Agri-Food Canada.

Data Specifics: The agri-environmental performance index shows environmental performance state and trends over time, based on weighting the percentage of land in each indicator class, such that the index ranges from 0 (all agricultural land in the most undesirable category) to 100 (all land in the most desirable category). The performance index scale is operationalized as follows: 0-19 = at risk, 20-39 = poor, 40-59 = moderate, 60-79 = good, 80-100 = desired. Please see full report for data collection methods. An electronic copy of the report can be requested at: http://www.agr.gc.ca/eng/science-and-innovation/agricultural-practices/environmental-sustainability-of-canadian-agriculture-agri-environmental-indicator-report-series-report-4/?id=1467307820931.

Indicator 58: Number of municipal food policy initiatives

MacRae, R., & Donahue, K. (2013). *Municipal food policy entrepreneurs: A preliminary analysis of how Canadian cities and regional districts are involved in food system change*. Retrieved from: http://tfpc.to/wordpress/wp-content/uploads/2013/05/Report-May30-FINAL.pdf.

Indicator 59: Number of food system networks

Food Secure Canada. (2016). *Provincial/Territorial networks*. Retrieved from: https://foodsecurecanada.org/community-networks/provincial-territorial-networks.

Indicator 60: Breastfeeding initiation and maintenance

Full Source Citation: Statistics Canada. *Table 105-0501 - Health indicator profile,*

annual estimates, by age group and sex, Canada, provinces, territories, health regions (2013 boundaries) and peer groups, occasional. CANSIM (database). http://www5. statcan.gc.ca/cansim/a05?searchTypeByValue=1&lang=eng&id=1050501 (accessed July 4, 2016).

Data Specifics: This data is from Statistics Canada's Canadian Community Health Survey (CCHS). The CCHS covers the population 12 years of age and over living in the ten provinces and three territories. The following groups are excluded from the survey's coverage: persons living on reserves and other Aboriginal settlements in the provinces; full-time members of the Canadian Forces; the institutionalized population and persons living in the Quebec health regions of Région du Nunavik and Région des Terres-Cries-de-la-Baie-James. Altogether, these exclusions represent less than 3% of the Canadian population aged 12 and over.

Indicator 61: Number of food system awarded grants through the Social Sciences and Humanities Research Council (SSHRC)

Full Source Citation: Social Sciences and Humanities Research Council of Canada - Awards Search Engine. Available at: http://www.outil.ost.uqam.ca/CRSH/RechProj. aspx?vLangue=Anglais.

Data Specifics: This data is from Statistics Canada's Canadian Community Health Survey (CCHS). The CCHS covers the population 12 years of age and over living in the ten provinces and three territories. The following groups are excluded from the survey's coverage: persons living on reserves and other Aboriginal settlements in the provinces; full-time members of the Canadian Forces; the institutionalized population and persons living in the Quebec health regions of Région du Nunavik and Région des Terres-Cries-de-la-Baie-James. Altogether, these exclusions represent less than 3% of the Canadian population aged 12 and over.