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# Table of Contents

Executive Summary .......................................................................................................................... 1

Introduction ...................................................................................................................................... 3

Methodology .................................................................................................................................. 5

Section 1: Demographics .................................................................................................................. 6
  Geography ........................................................................................................................................ 6
  Growth .............................................................................................................................................. 6
  Age of Regina ................................................................................................................................ 7
  Living Arrangements ..................................................................................................................... 7

Section 2: Economics, Incomes, and Housing .................................................................................. 10
  Employment and Incomes ............................................................................................................. 10
  Social Assistance ........................................................................................................................... 13
  Unemployment, and Employment Insurance Programs .............................................................. 14
  Relative Importance of EI and Social Assistance ........................................................................ 14
  Housing ........................................................................................................................................ 15
  Homelessness ............................................................................................................................... 16
  Poverty .......................................................................................................................................... 16
  Food Insecurity ............................................................................................................................. 18

Section 3: Food Consumption and Costs ....................................................................................... 20
  Basic Food Costs ............................................................................................................................ 20
  What Are We Eating? ..................................................................................................................... 20

Section 4: Farming ............................................................................................................................ 22
  Farm Incomes ............................................................................................................................... 22
  Farmers’ Prices ............................................................................................................................. 23
  Farm Numbers ............................................................................................................................. 25
  Farmland Ownership ..................................................................................................................... 26
  Farm Production ........................................................................................................................... 27
  Organic Production ........................................................................................................................ 31

Section 5: Food Processing, Wholesaling and Retailing .................................................................. 33
  Food Processing ............................................................................................................................ 33
  Food Processing: Ownership and Concentration ......................................................................... 36
  Food Wholesale ............................................................................................................................ 36
  Food Retail .................................................................................................................................... 37
  Geographic Structure and “Food Deserts” .................................................................................... 38
  Food Retail: Ownership Structure and Corporate Concentration ................................................ 39
Section 6: Indigenous Food Systems

Access to Indigenous Foods in Regina
Costs of Indigenous Foods: Prices of Game, Fish, Traditional Foods, and Medicines
Consumption of Indigenous Foods
Facilities for Processing Fish and Game and Regulatory Agencies and Policies
Access to Land and Water

Section 7: Food Waste

Section 8: Greenhouse Gas Emissions and the Environment

Section 9: Health

Conclusion

References

Appendix 1: Maps

Appendix 2: Regina Food Assessment Indicators

Appendix 3: Indigenous Food System Indicators

Appendix 4: Research Details
Executive Summary

This *Environmental Scan* is the first phase of work in the Regina Community Food Assessment, a collaborative, participatory process that brings people together from various sectors of the local food system to

- analyze the local context;
- identify the assets, gaps, and priorities of the community;
- and develop an action plan to improve community food security.

The Scan is a snapshot of our local food context at this time, and is meant to help us understand more about our local food system, including an acknowledgment about what we don’t yet know. The report examines some key elements of the Regina-and-area food system. That is, it looks at production, processing, consumption and waste disposal while also examining the social, environmental, economic, and cultural context of that food system. Clearly, all issues related to sustainability and secure access to food are functions of this larger context.

This Scan focuses on identifying and examining some indicators and ongoing datasets that can reveal the structure and dynamics of Regina’s food systems today. These can be used to monitor its development into the future and should allow us to evaluate the success or failure of policy changes.

Each section of this *Environmental Scan* examines an area of our local food system. In Section 1: Demographics, we look at Regina’s demographics by age, living arrangements, and language. Section 2: Economics, Incomes and Housing outlines relevant data on income, labour participation, including social assistance and employment insurance statistics, as well as housing and homelessness. This information, in conjunction with food insecurity statistics, helps to paint a picture of the extent of food (in)security in Regina.

Sections 3 to 5 look closer at the consumption, production, processing and distribution of food in Regina’s food system. Section 3: Food Consumption and Costs asks what people in Regina are eating by looking at the costs and availability of different food items. Information relevant to the production of food in Saskatchewan and the Regina area is outlined in Section 4: Farming. This includes data on farm income and debt levels, prices received for farm products compared to processed foods, the number of farm operators, land ownership, and the kinds of food produced in this area. Section 5: Food Processing and Wholesale and Retailing examines local food processing capacity for different agricultural products, ownership of and concentration in food processing companies, and information on Regina’s food wholesale and retail sectors. We point to the existence of food deserts in some Regina neighbourhoods.

Indigenous Food Systems, including the access and distribution of traditional indigenous foods, are explained in Section 6. It is notable that there is virtually no research data on urban indigenous food systems. Gaps in information on access to traditional foods in Regina are outlined. We raise questions concerning the retail of indigenous foods, including which businesses offer indigenous foods and what foods are available. We look at the barriers to accessing indigenous
foods, including policies, laws, regulation, transportation and preservation techniques. Finally, we present data and raise questions related to the cost and consumption of such foods, and available processing facilities.

Section 7: Food Waste explores various dimensions of the 40% of food waste Canadians generate each year. The energy usage and greenhouse gas emissions caused by the food and agricultural sector is outlined in Section 8: Greenhouse Gas Emissions and the Environment. Finally, Section 9: Health tracks health indicators relevant to food security and a high quality of life, including obesity, chronic diseases, infant birth weight and issues affecting vulnerable populations.

While extensive, this Scan is not comprehensive, and the gaps in information that we identified will hopefully serve as a catalyst for much needed future research. The lack of available research and data related to food systems in Regina are noted throughout the Scan. The information presented in this report will be used in the next phase of the Regina Community Food Assessment that involves holding consultations in various neighbourhoods and constituencies in Regina. These consultations are geared to engage local citizens in analyzing the larger context in which our food systems functions, and to gain a much better understanding of peoples' experiences, needs and perspectives on what is needed and how to proceed in building more socially just and environmentally sustainable food systems.
Introduction

This Environmental Scan is part of a larger and forthcoming *Regina Community Food System Assessment and Action Plan*. The Scan examines some key elements of the Regina-and-area food system including production, processing, consumption and waste disposal. Importantly, because sustainability, food production and secure access to food are largely determined by the social, economic and environmental context the Scan also provides information about that context. In addition, the Scan focuses on identifying and examining indicators and ongoing datasets that can help reveal the structures of Regina’s food system today. These indicators should assist us in monitoring changes in the food system and allow us to evaluate the success or failure of policy changes.

There are hundreds of potential food system indicators that can be used in an environmental scan. This Scan is selective and discusses only some. There are also an even greater number of data voids and information gaps. For many of the indicators one might want to create, data does not exist. Some examples of research gaps and data voids include: local food flows into Regina from the surrounding countryside; income inequality at a fine-grained, Regina level; local data on food waste; data on the structure of food wholesale in Regina or western Canada; and, as we will discuss below, there is a huge information and data void pertaining to every aspect of how traditional Indigenous foods are accessed and distributed in urban centres such as Regina.

There is a lot of data on food systems, but there is also a whole lot missing. For example, there is data on the systems that produce and supply pork and potatoes to Regina, but virtually no data on the systems that supply deer meat, dried fish and wild mushrooms. There is a day-and-night contrast between the relatively rich data available for many parts of the dominant commercial agri-food system, on the one hand, and the almost total absence of data on the informal systems for accessing and distributing traditional Indigenous foods in Regina and other cities, on the other. Similarly, there exists little or no data, or only fragmentary or anecdotal data, on direct-from-farm food supply to Regina, backyard tree-fruit production, or household or community garden production. Several of Regina’s food sub-systems are unstudied, undocumented, and, to outsiders including policy-makers, largely invisible.

It is important to highlight the gaps and reflect upon what is missing to ensure that we are looking at the whole food system. The bulk of data regarding food systems in Regina is focused upon the production, processing and retail of agriculture-based foods. Thus, there exist knowledge and data micro-gaps (retail food company sales data for Regina, for example) but we must also keep in mind that there are macro-gaps: entire chapters of the story that will be left out unless we piece together the fragments of information that we are forced to rely upon for these inadequately studied parts of our food system. There is a pressing need for researchers, academics, and policymakers to focus on the less-documented and under-researched aspects of our food systems and to create the data and analyses that can enable effective and positive policymaking for the entire food system, not just the dominant commercial portions, or the food system of the dominant culture. Policy and program development must take into account the diverse food needs of all peoples in Regina.
Indigenous people make up a large and growing portion of the Regina population and they have the right to culturally-based foods. Urban access to wild game, gathered foods, “country foods,” and other culturally-based foods is not well understood or documented, nor are the systems and flows that may deliver these foods into urban areas, or that may fail to do so. Going beyond Regina, there exists a nearly unbroken horizon of research gaps regarding Indigenous food systems within Canadian cities. In preparing this scan we found that there are no reports and journal articles detailing how Indigenous foods are distributed and accessed in Canadian cities, and there exists almost no statistical data on this topic. Despite the paucity of analysis and data, much can be said about both conventional and Indigenous food systems in the Regina area. This scan provides a framework for beginning to understand these systems, and identifies gaps in knowledge for further research.
Methodology

To provide a more detailed picture of the diverse food needs, processes and gaps in knowledge needed for future planning and research, two environmental scans on food systems (conducted in 2013) were combined to produce this document. The first environmental scan was of conventional Regina food systems, requisitioned by the Regina Community Food Systems Steering Committee (CFSSC), funded by the University of Regina Community Research Unit (CRU) and Regina Qu'Appelle Health Region. The second environmental scan was of Indigenous Food Systems (IFS) in Regina, which was soon expanded to provincial then national scale, requisitioned and funded by Dr. Dawn Marsden, and hosted by the First Nations University of Canada (FNUNIV).

Under the supervision of CFSSC representative Tracy Sanden (Regina Qu'Appelle Health Region), Dr. Annette Desmarais (University of Regina and now at University of Manitoba) and Dr. Dawn Marsden (FNUNIV), Darren Qualman was hired to conduct a search of published literature, website and network publications, and to draft each of the scans. Additional research, writing and editing was completed by the supervisors.

A total of 225 (150 + 75) research hours were dedicated to the conventional and Indigenous food system scans (respectively). To assist in this process, both the Regina Community Food Systems Steering Committee and First Nations University of Canada Indigenous Food Systems Project developed lists of indicators (see Appendix 2 for RFA Indicators and Appendix 3 for IFS Indicators) for assessing the state of conventional and Indigenous food systems in Regina. Databases searched included: Academic Search Complete, Google Scholar, Bibliography of Native North Americans, University of Saskatchewan’s Indigenous Studies Portal, Web of Knowledge, and the internet more generally.

In searching these research-paper databases, it soon became clear that there are few or no reports detailing how Indigenous foods are distributed and accessed in Canadian cities. Thus, a second, supplementary approach was adopted to identify additional sources of information. 60 emails were sent to Canadian academics, researchers, experts, organizations, and agencies with expertise in Indigenous food systems. Those emails asked for details on any papers, research or information that may exist. See Appendix 4 for a list of the institutions and agencies contacted. Statistical databases at Statistics Canada and detailed reports from the First Nations Information Governance Centre (First Nations Regional Longitudinal Health Survey, RHS) were also examined to see whether they held data that could illuminate the specifics of how Indigenous food is distributed and accessed in urban centres.
GEORGRAPHY

The city of Regina (Figure 1) is situated in the southeast quadrant of the province of Saskatchewan. It covers an area of 3,408.28 km squared and has a population density of 61.8 persons/km squared. This is higher than the national census metropolitan area population density of 249.58 persons/km squared over a total of 8,965,121.42 square kilometers (Statistics Canada, 2012a).

GROWTH

Regina is one of Canada’s leaders in population growth. According to the 2011 National Household Survey, the population of Regina was 207,215; 21,735 or 10.5% identified as immigrant and 19,785 or 9.5% identified as Aboriginal (56.5% First Nations, 41.6% Métis) (Statistics Canada, 2013a). Regina has seen an increase of 7.7% between the years of 2006 and 2011 for the general population (Figure 2) and Statistics Canada reported an increase of 20.1% for the Aboriginal population across Canada, between 2006 and 2011 (Statistic Canada, 2012b). Prior to 2006, Regina’s population remained virtually unchanged since 1996 due to a balance between natural growth and inward migration flows and outflow to other provinces. Regina also experienced a growth in bedroom communities between these periods. For example, White city grew by 70.2% (Statistics Canada, 2012a). The population for Regina and surrounding
census tract is expected to continue to increase (Figure 3) due to an increase in international migration and interprovincial migration; the majority of people moving into Regina are older adults and families resulting in an increased birth rate for Regina (Elliot, 2013).

AGE OF REGINA

The majority of the population is aged 15-64 years. Two age groups that make up the majority of the population are those aged 45-59 years and heading into retirement age, and 20-34 year olds (Statistics Canada 2006a; 2006b; 2012a; 2012b). The reason for the large number of 20-34 years olds is due to children of the baby boomers, the large number of young Aboriginal adults living in the city and the age of the people moving to the city from other countries and provinces (Elliot, 2013). The proportion of working age people is expected to decrease. As the population ages, there will be increased requirements for seniors’ housing, age friendly communities and health care. For every 100 people in Regina, there are 43 people who would be dependent on those people that are of working age. This dependency ratio considers the number of socially or economically dependent individuals (under 15 years and over 65 years) compared to those in the working age group (15-64 years) per 100 individuals (Statistics Canada, 2006a). It is anticipated that the number of young people will decrease and the number of older adults will increase resulting in [fewer] workers to finance the pension of retirees (RQHR, 2011). It also results in a decrease in the number of people eligible to work and the number of children in schools.

LIVING ARRANGEMENTS

In 2011, 3 our of 10 households were comprised of persons living alone and another third had only 2 persons. This was an increase in household size from 2006 partly due to the number of larger households (4 or more persons) that increased by 7.6% (Elliot, 2013). The average household in Regina has 2.43 persons (Figure 6). The number of dwellings is increasing more slowly than the population. 30% of the household are comprised of people living alone (Figure 7 & 8).

For the first time in decades, the population grew more quickly than the number of households. While our population grew by 7.7%, the number of private dwellings increased by 6.4%. This means that there was a slight increase in the average number of persons per household, a reversal of a long-standing trend towards fewer persons per household (Elliot, 2013).
According to Elliot (2013), 36% of Regina households held married couples with children, and 32% were married couples without children. There are almost as many married couples with children as there are married couples without children (Figure 9). 29% of children living at home are 10 years of age or older (Figure 10). The age of children living at home is also increasing. In 2011 29% of the children living at home were eighteen years of age or older and single. This compares with 26% ten years ago. The fastest growing groups of children living at home were those under 5 years of age (24%) and those 25 years and older (15%). The majority of those 25 years and older are male (Elliot, 2013).

Lone parent families account generally for one in five families in Regina, and 57.6% of Aboriginal families. An additional 12% of Aboriginal children (14 yrs and under) live with grandparents, relatives, step parents or in foster care (Elliot, 2013).

Of the young people who are no longer living with their parents, the majority are living with non-relatives such as university students sharing an apartment with friends or alone. Among those
Regina residents 15-29 years of age, 14% are living with relatives, 51% living with non-relatives and 25% are living alone. The 20% of Regina’s population that do not live in the typical single-family households tend to be either seniors or young adults. One third of Regina seniors live alone (Statistics Canada, 2006b; Elliot, 2013).

**Language**

According to the 2011 census, 85.9% of Regina residents reported English as their mother tongue, 1.2% reported French and 11.6% reported a non-official language. However, 92.2% spoke English most often in their home, 0.4% spoke French, and 5.3% spoke a non-official language. Cree and Ojibway were the two most common Indigenous languages spoken in Regina (Statistics Canada, 2012a).

**Recent Immigration**

According to the 2011 National Household Survey 21,735 people in Regina identified as immigrants, which is 10.5% of the total population of Regina (Statistics Canada, 2013a). The largest number of immigrants indicated their origin as the Philippines, China and the UK. 21,955 of the Regina population identified as visible minorities and of these, the largest populations (>1000) identified themselves as follows:

<table>
<thead>
<tr>
<th>Minority</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Asian</td>
<td>4900</td>
</tr>
<tr>
<td>Filipino</td>
<td>4155</td>
</tr>
<tr>
<td>Chinese</td>
<td>3705</td>
</tr>
<tr>
<td>Black</td>
<td>3110</td>
</tr>
<tr>
<td>Southeast Asian</td>
<td>2500</td>
</tr>
<tr>
<td>Latin American</td>
<td>1290</td>
</tr>
</tbody>
</table>

*Table 1: Regina’s largest visible minorities. (Statistics Canada, 2013a)*
EMPLOYMENT AND INCOMES

The following table excerpts were copied from 2006 Census Community Profiles (Statistics Canada, 2007a) and are the most recent labor and income data relevant to Regina, SK. The next Regina labour and income reports, will be released by Statistics Canada on August 14, 2013, from the 2011 National Household Survey (Statistics Canada, 2013a).

<table>
<thead>
<tr>
<th>Labour force activity</th>
<th>Total</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total population 15 years and over</td>
<td>145,415</td>
<td>69,200</td>
<td>76,215</td>
</tr>
<tr>
<td>In the labour force</td>
<td>102,625</td>
<td>51,835</td>
<td>50,790</td>
</tr>
<tr>
<td>Employed</td>
<td>97,490</td>
<td>49,050</td>
<td>48,440</td>
</tr>
<tr>
<td>Unemployed</td>
<td>5,140</td>
<td>2,790</td>
<td>2,345</td>
</tr>
<tr>
<td>Not in the labour force</td>
<td>42,790</td>
<td>17,360</td>
<td>25,430</td>
</tr>
<tr>
<td>Participation rate</td>
<td>70.6</td>
<td>74.9</td>
<td>66.6</td>
</tr>
<tr>
<td>Employment rate</td>
<td>67.0</td>
<td>70.9</td>
<td>63.6</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>5.0</td>
<td>5.4</td>
<td>4.6</td>
</tr>
</tbody>
</table>

*Table 2: Labour force activity. (Statistic Canada, 2007a)*

According to the 2006 Census Profile: Wascana Campus (City of Regina) compiled in 2009, food related personnel trends can be partially derived from the employee counts in Table 3 (Government of Saskatchewan, 2009). While direct participation in agriculture, forestry and fishing has been cut in half, preparation and service of foods has stayed roughly the same. These figures do not include home-based employees or business owners who may donate or sell food privately to food banks, community kitchens, restaurants or stores, or through the Regina Market.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, forestry, fishing</td>
<td>1,595</td>
<td>1,330</td>
<td>870</td>
<td>780</td>
</tr>
<tr>
<td>Chefs, cooks, servers</td>
<td>-</td>
<td>3,690</td>
<td>3,675</td>
<td>3,620</td>
</tr>
<tr>
<td>Accommodation and food services</td>
<td>6,860</td>
<td>7,495</td>
<td>7,490</td>
<td>7,820</td>
</tr>
</tbody>
</table>

*Table 3: Employee counts (Government of Saskatchewan, 2009)*
Many Regina families have seen their incomes rise over the past decade (Figure 11). “Median” means middle value. In this case, it indicates the income that falls in the middle of the range. That is, half the households in a given category will have an income above the median, and half below. A rising median indicates that, overall, incomes are rising, but it gives no indication of what is happening to particular families. Moreover, some groups may be doing better than others. For instance, in this graph (Figure 11) we see that the median income for female seniors living alone is low and not rising.

Though incomes are up for some, inequality is high and rising (Organization for Economic Cooperation and Development, 2011a, p. 39).

Figure 12 splits the Saskatchewan population into five equal-sized groups and it shows the portion of total income that goes to each fifth. The top fifth of income earners split between themselves almost half of all income—46%. That is, the one-fifth of all families with the highest incomes receives 46% of all the income. But the one-fifth of Saskatchewan families earning the lowest incomes split between them just 4% of total income. As is evident in the graph, each family in the top fifth received a piece of the pie eleven times larger than each family in the bottom fifth. (Statistics Canada, 2011a)

Saskatchewan mirrors the rest of the country. According to the Organization of Economic Cooperation and Development (OECD), in 1990, the top 1% of income earners in Canada received 9% of all income. By 2007, the top 1% had increased their share to 13% of all income. (OECD 2011, p. 39)
Neighbourhood Income

While it is common speculation that a large number of low income and/or Aboriginal people live in the north central part of Regina, a more in-depth study of population demographics (by neighborhood, identity, ethnicity and family type) remains to be completed to identify the most food insecure neighborhoods and population groups. Figure 13, below shows a breakdown of income groups, by neighbourhood.

![Figure 13: Income groups by Regina neighbourhood, 2006 census (City of Regina).](image)
SOCIAL ASSISTANCE

Many Regina families have to rely on Social Assistance payments—payments that, in many cases, aren’t keeping up with rising costs of food and housing.

In 2010, 10,120 persons living in Regina received Social Assistance payments. By 2011 that number had decreased only slightly to 10,120. (Statistics Canada, 2011b).

Adjusted for inflation, Social Assistance payments for two-child families and for persons with disabilities are lower today than they were 25 years ago. Further, these inflation-adjusted numbers probably don’t tell the whole story. For example, Regina rents have gone up faster than the inflation rate (5% annual rent increases in Regina), and energy cost increases are excluded from many measures of inflation (National Council of Welfare, 2010).

Saskatchewan residents who rely on Social Assistance receive a “basic allowance” to cover food, clothing, personal, and household items. The basic allowance in Saskatchewan was $195 per month in 1980 (Kerr, Frost & Bignell, 2004). The allowance has risen only slightly in the intervening 33 years, to $255 per month (Government of Saskatchewan, 2012). That $255 per month, $8.39 per day, is often all the money that Social Assistance recipients have to buy food, clothes, shoes, bus transport or gasoline, house-wares, toiletries, and the dozens of other necessities many higher-income Canadians take for granted.

Figure 14: Regina, number of Social Assistance recipients, 2000-2010. (Statistics Canada, 2011b).

Figure 15: Saskatchewan, Social Assistance payment amounts, various categories, adjusted for inflation, 1986-2011 (National Council of Welfare, 2010).
UNEMPLOYMENT AND EMPLOYMENT INSURANCE PROGRAMS

Many Regina families have to rely on Employment Insurance (EI), but that program is being reduced in scope and effectiveness.

Despite a relatively buoyant economy for some in the city, more than 5,000 Regina citizens are officially listed as unemployed at any given time. In an average year, approximately 10,000 Regina families are affected by unemployment and collect Employment Insurance benefits for at least part of the year. Job-loss can create sudden and acute food insecurity for a family (Statistics Canada, 2011d and Statistics Canada, 2013b).

RELATIVE IMPORTANCE OF EI AND SOCIAL ASSISTANCE

Social Assistance has replaced Employment Insurance as the main means by which governments provide supplementary income to jobless and/or low-income Canadians.

Governments have reduced the amount of money that flows through EI programs by reducing the number of recipients and payment amounts. Governments have correspondingly increased the relative flow of money through Social Assistance programs. Statistics Canada tells us:

“Legislation enacted since 1981 changed the relative importance of the various transfers received from governments. Reforms to the Employment Insurance program in the early 1990s affected eligibility, and the wage replacement rate was lowered from 60% to 55%. Employment Insurance benefits fell during the decade both in absolute terms and as a share of transfers received by households” (Statistics Canada, 2012c)

In a related publication, Statistics Canada (2012d) tells us:

“Social security benefits have eclipsed Employment Insurance benefits as the primary source of government transfers to households. In 1991, social security benefits accounted for 24% of transfers...”
received by households, while Employment Insurance benefits accounted for 22%. In 2010, social security benefits amounted to 29% of transfers received by households, while Employment Insurance benefits accounted for 11%.”

Thirty years ago, for every dollar that flowed to citizens through Social Assistance payments, nearly two dollars flowed through EI payments. Today, the ratio is reversed, with Social Assistance flowing more than twice as much money as EI. There has been a national move to reduce the relative scope of EI, and to have citizens rely more on Social Assistance. This must be kept in mind when assessing Regina incomes, poverty, and food security (Statistics Canada, 2012c).

**HOUSING**

Rental accommodation is hard to find and expensive, and house prices are rising rapidly. For the past five years, Regina’s vacancy rate has been below 1%, occasionally dipping to 1/2%. These tight rental markets raise rents and make it hard for many people to find adequate housing. It is likely that others may be living in over-crowded conditions—forced by high rental costs and economic circumstances to take smaller accommodations than their families require. (CANSIM, 2012a, b).

Since 2007, Regina rents have been increasing by 5% (for 2 bedroom housing) to 8% (for 3 bedroom) per year. Rent for a 2-bedroom apartment is up nearly one-third since 2007, and now averages $983 per month. The shelter allowance from Social Services provides $711 per month for a family with two children—$272 below the cost of an average 2-bedroom apartment (Ministry of Social Services, 2013). If the shelter allowance won’t cover rent, Social Assistance recipients may be forced to cover the shortfall from their basic allowance—the $8.39 per day per adult that is supposed to buy food (CANSIM, 2012c).
HOMELESSNESS

Many Regina residents cannot find appropriate accommodations and are forced to sleep outdoors, in emergency shelter beds, or in makeshift accommodations.

This graph (Figure 20), taken from a study by the Homeless Individuals and Families Information System, gives an indication of the year-over-year increase in homelessness in Regina. The study tracked institutions and facilities that together account for 79% of Regina’s emergency and transitional beds. Bed utilization was up 44% between 2008 and 2010. Shelter utilization rates are just one measure of homelessness and do not represent all affected individuals or families. Nevertheless, the increase seen here probably represents an overall increase in homelessness in the city (Greenberg, Schiff, Harrison & Nelson, 2011).

POVERTY

The percentage of Regina residents living in poverty is falling, overall, but rates remains high for many groups, including recent immigrants, persons with disabilities, and, as we see below, Aboriginal people, and children in single-parent families.

The LICO is a measure of poverty. To fall below the LICO, a family must have an income such that their spending on food, shelter, and clothing would consume 20 percentage points more of their after-tax income than the average family. For example, if the average Regina family of 4 spends 50% of its after-tax income on food, shelter, and clothing, then a Regina family of 4 with a lower income that has to spend 70% of its income on these necessities would fall below the LICO. The 2011 LICO for a family of 4 in Regina was $30,871 (Statistics Canada, 2012b, Statistics Canada, 2011e).
Though poverty on the whole, as measured by the LICO, is falling in Regina and in the province, poverty rates remain very high for some groups. Figure 22 shows the percentage of children in female-headed single-parent families that fall below the LICO. The average for 2001-2010 is 39%, and there is no downward trend to indicate declining poverty rates for this group. (Statistics Canada, 2011e).

Figure 23 shows that Aboriginal populations face poverty rates several times higher than those for non-Aboriginal populations. The data is the latest available, from the 2006 Census (Statistics Canada, 2010, p. 13).
FOOD INSECURITY

The factors detailed in the preceding graphs—inequitable incomes, high rental costs, inadequate Social Assistance and Employment Insurance payments—contribute to food insecurity in Regina. There are many ways to assess insecurity. The graphs below provide some data.

In 2007/08, the most recent year for which we have data, 7% of the residents of Regina and the surrounding Health Region were food insecure—5.2% moderately insecure and 1.8% severely insecure. (This latter percentage matches that for food bank utilization, below.) These rates are higher than those for Saskatchewan as a whole. Statistics Canada’s (2007b) calculation of food insecurity is based a set of 18 questions, and indicates whether households were able to afford the food they need. Moderate food insecurity means that there was an indication that quality and/or quantity of food consumed were compromised. Severe food insecurity means that there was an indication of reduced food intake and disrupted eating patterns (Statistics Canada, 2007b).
Although food insecurity rates overall may be just a few percent, it is important to understand that food insecurity is not evenly distributed. Those with the least income invariably suffer most from food insecurity. Figure 25 shows that among Canadian households whose incomes fall into the lowest tenth (lowest “decile”) of income distribution, nearly one-third are food insecure, and 14% are severely insecure. (Health Canada, Community Health Survey 2007-2008 in Williams, Smith, Leblanc, Langille, Watt (2011).

According to Regina and District Food Bank statistics, the number of food bank requests for assistance rose sharply from the late 1980s to recent years. Seen another way, food bank utilization has remained high in recent years despite a perception that the provincial economy is buoyant and jobs are plentiful. These food bank utilization statistics, and especially the upward trend, provide a clear indicator that there is significant food insecurity in Regina (T. Sandin, personal communication, February 13, 2013).

In Saskatchewan overall, twice as many people visited food banks in the 2010-2012 period than did so in the 1999-2001 period. The portion of our provincial population using food banks roughly doubled, from 1% to 2%. Food insecurity is not only real and significant, it may be growing. (Food Banks Canada, 2013, (T. Sandin, personal communication, February 13, 2013).

Note that the graph (Figure 26) for Regina shows total request for assistance, not the number of people assisted (as each person can make multiple requests during the year). The graph (Figure 27) for the province does show the numbers of people assisted. So while the two graphs can’t be compared directly, the upward trend evident in both gives us confidence in the data and its indication of increasing food bank utilization.
BASIC FOOD COSTS

The prices of “the basics” (meat, eggs, milk, fruits, vegetables) have not increased any faster than prices in general. Though food prices have doubled or tripled over the past 32 years, they have not gone up faster than the general rate of inflation.

One question is: Are food prices rising faster than inflation? Figure 28 compares the Consumer Price Index (CPI) as a whole to indices of prices for various categories of grocery-store food. An index lets us compare price changes of differing items. Price increases for most foods have been lower than the overall rate of inflation. Prices for bakery and cereal products have increased the most; prices of fresh fruits and vegetables, the least. The rate of price increase, however, is just one factor in affordability and food security (Statistics Canada, 2013c).

WHAT ARE WE EATING?

As Regina-and-area residents, we get our food from a variety of sources: grocery and convenience stores, private and community gardens, farmers’ markets and local producers, food banks and charities, restaurants and bars, by fishing and hunting and trapping and gathering, from backyard trees, in hospitals and care homes, from dumpsters, and from other sources. For some of these sources we have good data; for others, none. In thinking about food sources, food supplies, and food security we need to keep in mind that many of the food flows in our communities are inadequately measured or understood. There exist large gaps in our understanding of food availability and access and, thus, in or ability to evaluate food security.
On average, in stores, we spend 16% of our food dollars on bakery products, cereal, and grain products; about 22% on fruits and vegetables and foods made from fruits and vegetables; 15% on dairy products; 19% on fresh, frozen, and processed meat; 2% on fish and seafood; and 26% on beverages and miscellaneous foods. Summing categories: we spend 36% on animal products, 22% on fruit and vegetable products, 16% on bakery and cereal products, and 26% on misc. Foods and beverages (Statistics Canada, 2013d).

The table below lists Canadian per-capita supplies of representative foods. These figures are derived from gross supplies that have been adjusted for retail, household, cooking, and plate losses. (Section 8 of this Scan includes details on food waste.) Food availability data is our best window into food consumption (Statistics Canada, 2013e).

<table>
<thead>
<tr>
<th>Food Description</th>
<th>1961-1963 average quantity</th>
<th>2009-2011 average quantity</th>
<th>Percentage change, early 1960s vs. recent years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat flour kgs / person / year</td>
<td>40.7</td>
<td>42.7</td>
<td>+5%</td>
</tr>
<tr>
<td>Rice kgs / person / year</td>
<td>1.2</td>
<td>4.8</td>
<td>+316%</td>
</tr>
<tr>
<td>Cheddar cheese kgs / person / year</td>
<td>1.2</td>
<td>2.7</td>
<td>+135%</td>
</tr>
<tr>
<td>Ice cream, ice milk, &amp; sherbet litres / person / year</td>
<td>7.9</td>
<td>5.1</td>
<td>-36%</td>
</tr>
<tr>
<td>Standard milk 3.25% litres / person / year</td>
<td>49.0</td>
<td>7.5</td>
<td>-85%</td>
</tr>
<tr>
<td>Partly skimmed milk 2% litres / person / year</td>
<td>6.1</td>
<td>25.5</td>
<td>+316%</td>
</tr>
<tr>
<td>Yogurt litres / person / year</td>
<td>0.04</td>
<td>5.8</td>
<td>+14,292%</td>
</tr>
<tr>
<td>Chicken &amp; stewing hens, boneless weight kgs / person / year</td>
<td>4.2</td>
<td>11.2</td>
<td>+168%</td>
</tr>
<tr>
<td>Beef &amp; veal, boneless weight kgs / person / year</td>
<td>15.5</td>
<td>12.2</td>
<td>-21%</td>
</tr>
<tr>
<td>Eggs kgs / person / year</td>
<td>11.9</td>
<td>8.8</td>
<td>-26%</td>
</tr>
<tr>
<td>Butter kgs / person / year</td>
<td>6.2</td>
<td>2.1</td>
<td>-65%</td>
</tr>
<tr>
<td>Margarine kgs / person / year</td>
<td>3.5</td>
<td>2.8</td>
<td>-19%</td>
</tr>
<tr>
<td>Salad oils litres / person / year</td>
<td>1.1</td>
<td>8.4</td>
<td>+699%</td>
</tr>
<tr>
<td>Apple juice litres / person / year</td>
<td>1.9</td>
<td>5.7</td>
<td>+203%</td>
</tr>
<tr>
<td>Carrots fresh kgs / person / year</td>
<td>4.3</td>
<td>5.2</td>
<td>+20%</td>
</tr>
<tr>
<td>Cucumbers fresh kgs / person / year</td>
<td>0.7</td>
<td>2.3</td>
<td>+227%</td>
</tr>
<tr>
<td>Lettuce fresh kgs / person / year</td>
<td>3.1</td>
<td>5.5</td>
<td>+78%</td>
</tr>
<tr>
<td>Potatoes white, fresh &amp; proc’d kgs / person / year</td>
<td>32.3</td>
<td>25.9</td>
<td>-20%</td>
</tr>
</tbody>
</table>

*Figure 30. Canada, food availability (after adjustment for waste), kilograms per person per year (unless litres specified), 1961-’63 average vs. 2009-’11 average. (Statistics Canada, 2013e).*

Diets change over time. Compared to 50 years ago, Canadian rice consumption is up four-fold (a 300% increase equals a four-fold increase). Consumption of cheddar and other cheeses has more than doubled, but ice cream/ice milk consumption is down. We’re drinking less higher-fat milk but more partly skimmed and skimmed milk. Yoghurt, virtually absent from diets 50 years ago, is now eaten in greater volumes than ice cream. We’re eating more chicken, and we’re eating less beef, but we’re still eating more beef than chicken. We’re eating less butter and less margarine, but more canola and olive oils. We’ve tripled apple juice consumption. Consumption of carrots, cucumbers, lettuce, and most other fresh vegetables is up. Consumption of potatoes is down.
FARM INCOMES

Low net incomes and mounting debt are undermining farm financial security and, by extension, food security. Net income is the money farm families have left over after they pay their bills and cover all their expenses (not including farm family labour and management). The lower line in this graph shows net incomes, on a per-farm basis, adjusted for inflation, with government support payments subtracted out (because taxpayer-funded support payments can mask farm income losses) (Statistics Canada, 2013f, 2012d).

Though net farm income has been low for most of the past three decades, gross revenues have soared. Adjusting for inflation, the value of grain, livestock, and other products from the average farm has more than doubled over the past 25 years. (See the top line in Figure 31.) Low net incomes are not the result of farmers’ failures to produce, innovate, diversify, or to market their products. Seen another way, in the 1970s and 1980s, our farm families got to keep one dollar out of every four they generated: four dollars in gross revenue created, on average, one dollar of net income. In the most recent two decades, farm families have been allowed to keep one dollar in every fifty. As a proportion of gross revenue, net income is 1/10th the level it was a generation ago.

If the net incomes of the farm families who grow our food are indicators of food security, we have reasons for concern. Though farm families’ net incomes have rebounded since 2007, for much of the past 25 years, incomes were negative. In fact, averaged over the past 25 years (1987-2011), realized net income in Saskatchewan (without counting subsidy payments) is just $857 per year per farm per year—about two dollars a day. For most of the past 25 years, farm families have been forced to get their household incomes from off-farm work, equity drawdown, government payments, and borrowed money.

Here’s another look at farm income, from a graph prepared by the Government of Canada’s department of Agriculture and Agri-Food (Figure 32). As noted above, the marketplace has returned very little to farm families in terms of net farm income. Farmers have doubled the production of the average farm, but expenses have consumed rising revenues. With market net incomes low, families have been forced to rely on off-farm income, taxpayer-funded support programs, and debt (Agriculture and Agri-Food Canada, 2012, p. 112).
Debt undermines control and security of tenure. Saskatchewan farm debt is rising rapidly. On the average farm, debt has doubled in just 15 years, and continues to climb, even in recent “good years.” Interest payments on Saskatchewan farm debt total about $600 million per year. This figure is roughly equal to the total annual amount farmers receive from taxpayer-funded support programs such as agristability and agriinvest. Taxpayers give farmers about the same amount that farmers give bankers. This $600 million per year in support payments, though paid by all the taxpayers of Canada, works out to about $2,000 to $3,000 per Saskatchewan family. ($600 million divided by 1 million people equals $600 per man, woman, and child in Saskatchewan.) In light of such large transfers of money, we should be asking where the money is ending up. Rising debt levels hint that farmers are not the primary beneficiaries (Statistics Canada, 2013g).

FARMERS’ PRICES

An illuminating way to evaluate the prices farmers receive is to compare those values to the retail prices of the goods made from farm products—the prices consumers must pay. The results of that comparison are troubling. Farmers’ share of a grocery-store dollar is a fraction of what it was two decades ago.

Grain companies, flour millers, bakery companies, and retailers turn $6 worth of wheat into nearly $200 worth of grocery-store bread. The farmer’s share of the retail bread dollar has fallen from 14¢ to 4¢. (Statistics Canada, 2013h, Saskatchewan Agriculture & Agri-food, 2012). Cereal companies and retailers charge shoppers $8 for a kg of corn flakes, but, of that amount, farmers get just 20¢ (Statistics Canada, 2013h and Canadian Grains council 1976-2000). Farmers receive the same price for cows today as farmers did 17 years ago. But retail customers are charged two-and-a-half times as much. (Statistics Canada, 2013h, 2013i). Figure 8. Saskatchewan, hogs, dollars per pound, and Canada, pork chops, dollars per pound, 1985-2012 (Statistics Canada, 2013h). Again, retail prices are up; farm prices are not.
The following graphs are not adjusted for inflation. Inflation-adjusted graphs equally show a growing gap between retail and farm-gate prices.

![Graph 1: Regina, wheat, dollars per bushel, and Canada, retail value of bread made from one bushel of wheat, 1975-2012 (Statistics Canada, 2013h)](image1)

![Graph 2: Ontario, corn, dollars per kg, and Canada, retail corn flakes, dollars per kg, 1976-2012 (Statistics Canada, 2013h)](image2)

![Graph 3: Saskatchewan, cows, dollars per pound, and Canada, ground beef, dollars per pound, 1995-2012. (Statistics Canada 2013h)](image3)

![Graph 4: Saskatchewan, hogs, dollars per pound, and Canada, pork chops, dollars per pound, 1985-2012 (Statistics Canada, 2013h, 2013i).](image4)

A key consideration in assessing Regina food security, is that even though citizens are being made to pay more and more for food, none of that extra money is making its way back to local (or distant) farm families.
FARM NUMBERS

Low farm prices and low net incomes are having a corrosive effect on the number of farms and farmers in the Regina area. To evaluate the security of Regina’s food system, we have to look at the food-producing area surrounding the city. Our food supply is increasingly national and international. For example, our lettuce might come from Chile and our mushrooms from China. Nevertheless, in thinking about Regina’s food security and about how we might alter our food system and make it more local, it is logical to look at the surrounding region.

In preparing this report and determining the area under consideration, a 100-mile radius was chosen as a boundary. Each public agency, however, collects data based on its own particular divisions and subdivisions. Health data, for instance, is collected based on the boundaries of the Regina-Qu’Appelle Health Region (See Figure 64).

Data on rural food production and farming is collected and reported on the basis of Statistics Canada’s “Census Agricultural Regions” (Figure 38). As is visible, Census Agricultural Region (CAR) boundaries do not match the 100-mile radius. The differences, however, are not significant. This report used Census Agricultural Regions 1B, 2A, 2B, 3AN, 3AS, 5A, and 5B (the region outlined in violet in the map above) to approximate the 100-mile radius. Unless greater precision is essential, throughout this report we refer to this 100-mile radius, even though the data collection boundaries may not align perfectly with that circle.

At the time of the 1991 Census of Agriculture, there were nearly 28,000 farm operators in the Regina area. Twenty years later, in 2011, that number had fallen to approximately 17,000. Statistics Canada defines a farm operator as “those persons responsible for the day-to-day management decisions made in the operation of a census farm or agricultural operation.” Up to three farm operators could be reported per farm. In a 20-year period, the Regina area lost 38% of its farmers (Statistics Canada, 2011f).
The number of farm operators overall is down sharply, but the number of young farmers has collapsed. The 1991 Census of Agriculture recorded 5,660 farm operators under the age of 35 within a rough 100-mile radius of Regina. In 2011, the Census recorded just 1,660—just over one-quarter the number recorded 20 years earlier. If there are few young farmers, the inescapable outcome is a precipitous drop in the number of farms (Statistics Canada, 2011f).

Figure 12 shows relative changes in land prices over the past 28 years. Land prices fell from their highs in the early 1980s and did not regain those values until 2009. In the past six years, sharp increases have doubled land prices. High prices can bar the entry of new farmers and young farmers while also spurring older farmers to exit. Affordable land is important if we want to diversify production and increase the number of farms. By world standards, Saskatchewan farmland might be seen as affordable. Though compared to historic values, it may seem increasingly unaffordable. (Price change data obtained from Farm Credit Canada, by request.)

FARMLAND OWNERSHIP

Around the world, corporations, investment firms, foreign governments, and foreign nationals are accelerating their purchases of farmland (“GRAIN releases data set with over 400 global land grabs,” GRAIN, 2012). This “Land Grab” threatens food security. Currently, no Canadian federal or provincial government agency is tracking foreign or corporate ownership. Instead, many provincial governments, including Saskatchewan’s, rely on laws that attempt to restrict farmland ownership to citizens of Canada and private Canadian corporations. These laws, even if followed to the letter, allow Canadian investment companies to buy farmland. Consequently, several investment corporations are purchasing farmland in Saskatchewan. For example, Assiniboia Capital Corporation—self-described as the “the largest farmland investment management company in Canada, with about 115,000 acres under management”—is headquartered on Hamilton Street (Assiniboia Capital Corporation, 2009).
Much more research is needed on the impact of corporate investment in farmland, and there is a critical need for public agencies to seek out and publish data on foreign, non-farmer, investor, and/or corporate ownership of farmland.

**FARM PRODUCTION**

What foods are produced around Regina? Figure 42 is based on a rough 100-mile circle around Regina (see Figure map, above). It shows how much grain is produced in that area, in kilograms, per person living in that area. It is based on a five-year average (2008-2012) of production tonnage and an estimated 400,000 person population for the 100-mile radius.

For every man, woman, and child living in Regina and the surrounding area, local farms produce about 9,000 kilograms of wheat suitable for making bread or pasta—9 tonnes each. Of course we cannot eat that much, but knowing just how much food is produced in the area surrounding the city helps us understand the productive potential of local agriculture (Statistics Canada, 2013j).

These Regina-area farms produce more than 5,000 kilograms of canola per area resident, from which can be made cooking and salad oils, processed food ingredients, and margarine. The farms produce a tonne-and-a-half of lentils per area resident, two-and-a-half tonnes of barley, nearly two tonnes of peas, and tonnes more of oats, flax, and chickpeas, as well as herbs, spices, and specialty crops that in many years include coriander, beans, canary seed, triticale, and hemp (Saskatchewan Ministry of Agriculture, 2013).

In total, on the farmland within a rough 100-mile radius of Regina, farmers produce about 22 tonnes of field crops per person living in that area—enough to feed each person dozens of times over. On top of this, livestock and livestock products provide many additional tonnes of food (see next section). If sheer food production tonnage alone could ensure food security, Regina would be among the most food-secure places on Earth. We need to recognize that hunger and food insecurity exists in Regina amid millions of tonnes of surplus food.
Crop production around Regina is diverse, as we can see from the following graphs. Figure 44 shows how many farms are producing each selected crop. In addition to farms growing wheat, oats, barley and other more common crops, dozens are growing chickpeas, grain corn, soybeans, sunflowers, beans, and buckwheat (Statistics Canada, 2011f).

In 2011, 53 farms in the Regina area grew 362 acres of vegetables and 766 acres of potatoes. For many of these vegetable crops, the acreage is modest, but the potential is large. The fact that farmers are growing these crops around Regina raises possibilities for increasing local food flows.
Extensive research is needed to determine how Regina-and-area can sustainably produce more of its own vegetable needs (Statistics Canada, 2011f).

Figure 46 (using numbers from the 2000 and 2011 Censuses of Agriculture) shows the number of farms within approximately 100 miles of Regina reporting various types of livestock. Note that the left axis is discontinuous: the units are hundreds in the bottom section of the graph, and thousands in the upper section (Statistics Canada, 2011f).

![Bar chart showing the number of farms reporting various types of livestock in Regina from 2006 to 2011.](image)

Figure 46: Regina 100-mile radius (CARs), farms reporting various types of livestock, number of farms, 2006 and 2011 (Statistics Canada, 2011f).

Hundreds of farms in the Regina area report raising sheep, pigs, chickens, and other livestock, thousands report raising beef cattle. However, several trends and indicators are visible here. A few observations would include:

1. Livestock farms are disappearing.

   a. The number of Regina-area farms raising broiler or roasting chickens is down 61% in 5 years, from 352 farms reporting chickens in 2006, to just 137 in 2011. (Though this drop is surprisingly large, the data appears correct, as the number of animals stayed constant. See next graph.)

   b. The number of Regina-area farms raising hogs is down 47% in 5 years, from 300 farms to 159.

   c. The number of farms reporting dairy cows is down 29%.
d. The number reporting beef cows is down 26%.
e. Similar losses are evident for farms raising other types of livestock.

2. The trend toward livestock diversification, much touted in the 1990s and early 2000s, appears to have stalled and reversed. The number of farms raising bison, elk, wild boars, deer, ostriches, llamas, and other specialty and exotic livestock is small, and has fallen by about half in five years.

3. It is possible that the decline in the number of farms raising livestock might be related to the decline in the number of young farmers, detailed above. Farms without multiple generations often find it harder to maintain a diverse production base or to meet the labour requirements for tending livestock year-round.

Figure 47 graphs shows actual numbers of animals within approximately 100 miles of Regina (see Figure 28 map for boundaries). The numbers come from the 2006 and 2011 Censuses of Agriculture (Statistics Canada, 2011f).

Again, some trends and indicators are visible. Livestock numbers are falling. In the Regina area, in 2011, there were fewer beef cattle, sheep, bison, and other livestock than 5 years previous. Numbers were down in every category. Note that the graph omits pigs, laying hens, and turkeys because Statistics Canada does not provide complete data.

While the decline in livestock numbers raises food security concerns, the number of animals remains high in relation to the population. Total cattle and calves of all types and ages in 2011
in the area surrounding Regina numbered 1.1 million—nearly 3 bovines per person living in the area. In addition to this are more than a million hogs and chickens. As with field crop production, relative to the population living in the area, livestock numbers and production are a large multiple of what is required to feed the local population. The food insecurity we see in this report when we look at indicators such as food bank utilization is not a result of production shortfalls or food tonnage shortages.

**ORGANIC PRODUCTION**

Production of organic foods is rising and has potential to go much higher. Many Canadians and our national and provincial governments are proud of the rapid expansion of organic acreage in Canada. While the trend toward organic production is strongly upward there is room for more improvement. According to the Conference Board of Canada, 0.9% of Canada's total agricultural land was classed as organic in 2006. In that same year, in many EU countries, 4% to 13% of agricultural land was classified as organic. Direct comparisons are difficult, as Canada has much pasture land and other marginal land that may never be certified as organic. Nevertheless, this comparison graph, put together by the Conference Board of Canada, shows the untapped potential for expanded organic acreage (Conference Board of Canada, 2013a).

![Figure 48: Canada and selected countries, percent of land certified organic, 2006](image)

*Figure 48: Canada and selected countries, percent of land certified organic, 2006 (Conference Board of Canada, 2013a).*
Figure 49 lists the number of farms reporting various categories of organic products for sale in 2011. For instance, 462 farms had certified organic hay or field crops for sale; 9 had certified organic fruit, vegetables, or greenhouse products for sale; and 22 had certified organic animals or animal products for sale (Statistics Canada, 2011f).

<table>
<thead>
<tr>
<th></th>
<th>Organic hay or field crops</th>
<th>Cert. organic hay or field crops</th>
<th>Transitional hay or field crops</th>
<th>Organic fruit, veg's or greenhouse products</th>
<th>Cert. organic fruit, veg's or greenhouse products</th>
<th>Transitional fruit, veg's or greenhouse products</th>
<th>Organic animals or animal products</th>
<th>Cert. organic animals or animal products</th>
<th>Transitional animals or animal products</th>
<th>Organic or Cert. organic maple products</th>
<th>Organic or Cert. organic herbs, spices or garlic</th>
</tr>
</thead>
<tbody>
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<td>Agricultural Region 1B</td>
<td>42</td>
<td>41</td>
<td>2</td>
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<td>4</td>
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<td>0</td>
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<tr>
<td>Agricultural Region 2A</td>
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<td>5</td>
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<td>Agricultural Region 5A</td>
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<td>3</td>
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<td>6</td>
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<td>0</td>
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<tr>
<td>Total for Regina area</td>
<td>479</td>
<td>462</td>
<td>23</td>
<td>12</td>
<td>9</td>
<td>3</td>
<td>29</td>
<td>22</td>
<td>7</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Figure 49: Farms within a 100-mile radius of Regina (CARs) reporting organic products for sale, number of farms, 2011 (Statistics Canada, 2011f).
FOOD PROCESSING

As the data demonstrates, Regina is surrounded by crops and livestock. We might expect that much of that food would flow toward the city, however, that is not the case. Almost all that agricultural production, even the portion eventually destined for Regina plates, flows away from the city. Even if a cow or pig or bushel of wheat is raised a dozen kilometres from downtown, in order to get to a Regina table, those agricultural products are usually trucked away from the city—to Saskatoon, Calgary, High River, Brandon, Winnipeg, or further afield. A key reason is that food processing plants, once numerous in and around Regina, have been shut down, with production concentrated in a few very large plants, mostly in other provinces or countries. These more locally-based plant closures have re-patterned food flows and severed Regina from its surrounding foodshed (a concept echoing “watershed”).

One of the most important stories to be told about Regina food security is this loss of processing capacity for food produced in the local area. Closures of processing plants mean that food must now take a much longer, more circuitous path to Regina households and Regina citizens cannot directly access the food that surrounds them. This loss of processing capacity and the attendant loss of local food flows into Regina is a significant contributor to the loss of food security.

Dairy: In past decades, Regina residents ate and drank dairy products produced on area farms and processed through local plants. In 1973, Saskatchewan had 30 dairy plants serving local and regional markets (Statistics Canada, 1975); now we have just one. In 1990, Regina and the surrounding region still had three dairy processing plants: Palm Dairies in Regina, and Dairy Producers Co-operative plants in Regina and Weyburn (Statistics Canada, 1993). Today, all the milk in Saskatchewan must flow through one single plant, Saputo Dairy Products that is based in Saskatoon (Canadian Food Inspection Agency, 2011). If there is a dairy cow near Belle Plaine, its milk, rather than making the 40 kilometer trip to a Regina cereal bowl, must make a 500 kilometer round-trip to Saskatoon and back!

Beef and Pork: A generation ago, much of the beef and pork that Regina residents ate was grown on local farms and processed through local plants such as Canada Packers or Moose Jaw Packers in Moose Jaw, or Fuhrmann Meats and Intercontinental Packers in Regina (Statistics Canada, 1985). Most of those plants closed in the 1990s, with the last, in Moose Jaw, closing in 2010. Moreover, plants in every other Saskatchewan city has closed, which means that today Saskatchewan has no large beef or pork packing plants. Nearly all the cattle raised around Regina and destined for supermarkets in the city must first travel to plants in Alberta to be killed and processed. And the hogs raised around Regina must travel to Alberta or Manitoba. Though they once did, the roasts and hamburgers and pork chops on Regina plates do not come from a dozen or a hundred kilometers away. Today they must make a thousand-kilometer round-trip.

Poultry: In 1967, there were four poultry processing plants in Regina-and-area: in Melville, Moose Jaw, Wynyard, and Regina. In all, the province had 8 poultry plants in 8 cities (Dominion Bureau of Statistics, 1969). Chickens and turkeys from local farms were destined to more local tables. Like
the beef and port industries, most of the chicken processing plants in Saskatchewan closed in the 1970s. Today, the province has just two plants: Lilydale Foods in Wynyard and Prairie Pride Natural Foods in Saskatoon (Canadian Food Inspection Agency, 2013). The closest remaining plant to Regina is in Wynyard, 175 kilometres away.

Flour: Regina is surrounded by wheat. Data and calculations detailed above show that within a rough 100-mile radius of Regina, enough bread-wheat is produced each year to provide each resident of the area with 5 tonnes of flour, enough to make 12,000 loaves of bread, each. In light of the huge volumes of wheat grown around Regina, it is surprising that the area has virtually no flour mills. This becomes even more surprising given that Robin Hood flour originated just 65 kilometers west of Regina, in Moose Jaw. The Robin Hood flour brand was created in 1909, but the Robin Hood plant in Moose Jaw closed down in 1966 (Dominion Bureau of Statistics, 1968), leaving no flour mills in Regina or the surrounding area. Today, almost all of the wheat grown within a few miles of Regina must be milled in Saskatoon, Calgary, Winnipeg, or further afield, and then trucked back hundreds of kilometers as flour or ready-made bakery products. There is just one remaining flour mill in the Regina area, a medium-sized mill operated by Nutrasun Foods Ltd. This mill, however, processes primarily organic wheat, serves all of North America, and only a very small fraction of its output is intended for the Regina or Saskatchewan markets.

The Robin Hood mill operated from 1909 to 1966. The oat and flour mills were so important to the area that for decades Moose Jaw referred to itself as “the Mill City” (Robertson, 1973 p. 355), and its baseball teams called themselves the Moose Jaw Millers, or the Robin Hoods.

Beer: Before the Canada-US Free Trade Agreement dismantled Canada’s interprovincial beer trade laws in 1989, Saskatchewan was largely self-sufficient in beer production, as were most other provinces, with the big-three Canadian breweries capturing more than 90% of the market (Dobni, 1993, p. 155). Regina had two large breweries (Molson and Carling O’Keefe) that, together with large breweries in Prince Albert and Saskatoon, produced most of the beer consumed in the province. Those Regina breweries employed hundreds of workers (Statistics Canada, 1982).

The Carling O’Keefe and Molson plants in Regina closed in 1980 and 2002, respectively—the latter brewery had been in production for 95 years (Canadian Plains Research Centre, 2006). Indeed, every Labatt, Molson, and Carling O’Keefe plant in Saskatchewan closed, and those Canadian companies were absorbed into foreign transnationals. Today, with a few exceptions (Great
Western Brewing Company, Paddock Wood Brewing, Bushwakker Brewpub, etc.) Saskatchewan's beer is largely the product of foreign transnationals and is largely produced in other provinces or nations. As indicated by a knowledgeable source in the brewing landscape in Regina, less than one percent of Regina's beer is produced in here, and probably not much more than 10 percent of the beer consumed in the province is produced in breweries in this province (Sneath, 2001, p. 270, and personal conversation with Regina brewpub owner, Mar 22, 2013).

**Fish, and more:** It is easy to forget just how many food processing plants were in the Regina area, and how diverse they were. There was even a fish processing plant in the area until 1976, Last Mountain Lake Fisheries Co-op, at Dilke, 70 kilometres northwest of Regina (Statistics Canada, 1977a). This was no small venture. In 1970, 418 Commercial Licenses were issued and in 1969, the total catch exceeded 1.7 million pounds. Caterpillar tractors pulled rows of wagons of fish across special roads built on the ice. Most of the fish was sold locally, but shipments were also made to Minneapolis, Chicago, and New York (Dilke and District Historical Society, 1982).

Until 1984, Associated Biscuits of Canada operated a Dad’s Cookies production facility a dozen kilometers east of Regina at White City, with peak employment between 50 and 100 workers (Statistics Canada, 1977b).

It isn’t possible to reduce diverse local food processing to a single number. Moreover, no consistent data exists. This figure, however, is an attempt to visualize what such a graph might look like. The trend line would be consistently downward, reflecting the disappearance of flour mills, breweries, dairy processors, and other food processing plants. Moreover, the downward trend would extend into the future, because the consolidation of food processing and the globalization of our food supply continue.

The downward trend in local processing capacity and self-supply is the mirror image of an upward trend in the distance food must travel—what we now refer to as “food miles.” The multi-decade, systematic shutdown of food processing plants in Regina and area can also be understood as a systematic delocalization of Regina food flows. This food “distancing” affects Regina-and-area employment, access to healthy food choices, opportunities for local farmers and retailers, our economy, and, as we will detail below, our greenhouse gas emissions.
FOOD PROCESSING: OWNERSHIP AND CONCENTRATION

There are fewer food processing plants, and there are fewer companies. The acronym CR4 stands for the “concentration ratio of the top 4 companies”, that is, what percentage of the total market is supplied and controlled by the largest 4 players. The Government of Canada says:

“The Canadian food and beverage industry has undergone significant structural changes since the early 1990s and has become increasingly consolidated, especially in the dairy, grain and oilseed milling, and beverage processing sub-industries. In 2008, the four-largest dairy processing establishments accounted for 66% of sales, while the top four beverage processing establishments and grain and oilseed milling establishments accounted for 64% and 62% of sale, respectively” (Agriculture and Agri-Food Canada, 2012, p. 84).

Figure 52 shows the portion of each Canadian processing industry owned and controlled by the top four firms in the sector—the CR4 (Agriculture and Agri-Food Canada, 2012). As high as these CR4 values are, they underestimate concentration by measuring it only on a national basis. Many food processing sectors are regional, and farmers near Regina can’t profitably deliver livestock to a packer in Quebec. For meat-packing, for example, the government of Canada says: “concentration ratios (CR4) for most regions in Canada are close to one”—close to 100% (Agriculture and Agri-Food Canada, 2012, p. 60). Looking at the Prairie region, it is hard to find food processing industries where the CR4 would not be 100%. When markets reach this high level of concentration, the dominant firms gain increased power and face decreased competition. Thus, they may be able to push down prices paid to farmers and push up prices charged to buyers.

Figure 52: Canada, concentration ratios (CR4s) in various food and beverage processing industries, 2008. (Agriculture and Agri-Food Canada, 2012, p. 84.

FOOD WHOLESALING

There exists virtually no public information on food wholesale in Canada, Saskatchewan, or, especially, Regina-and-area. Significant research is needed in order to understand this part of Regina’s food system, and how the structure, conduct, and performance of this link in the food chain might affect food security for our citizens. While conducting research for this Environmental Scan every attempt was made to obtain full and factual information, often by contacting managers of various firms. But because so little data and so few reports exist, and because information is often fragmentary, anecdotal, or incomplete, the following should be considered only as a sketch. We have tried to ensure that it contains no significant errors.
Three things are apparent about Regina's food wholesale sector:

1. It is concentrated geographically, with a few very large distribution centres serving the Prairie region;
2. It is concentrated in terms of ownership, with many of the smaller independent wholesalers now gone; and
3. Very little food from the Regina area makes its way by any direct route into the wholesale system and onto Regina plates.

Most food comes into Regina grocery stores from wholesale facilities located outside the region or outside of the province. Many independent food wholesale companies have disappeared or they have been bought up by larger players. Gone are The Codville Company and others (Condon, 2012).

In Regina, there is one large wholesale facility. This million square foot warehouse is operated by Loblaw Companies and serves its stores (Extra Foods, the Real Canadian Superstore, and the Real Canadian Wholesale Club) as well as some independent retailers. Also in Regina, there is a smaller wholesale facility operated by Pratt's Wholesale/Independent Choice Distribution (personal communication, manager, Pratt's Wholesale).

Most of the grocery stores in the city and surrounding area are supplied from wholesale facilities outside of Regina-and-area. Sherwood Co-op is supplied from wholesale facilities operated by The Grocery People/Federated Co-op located in Saskatoon and elsewhere. Walmart, Sobeys, Costco, and Safeway stores receive their food supplies from wholesale facilities in Alberta, Manitoba, and further afield (personal communication, manager, produce wholesale company).

**FOOD RETAIL**

In terms of food security, the retail link is key. It is the point of connection between the food production and processing systems, on the one hand, and citizens and their households, on the other. It is the narrow point in the hourglass, with millions of food producers and thousands of food companies on one side, and millions of food-buying households on the other. The structure of our retail system—it's geographic structure and locations, its corporate structure of ownership and control, and its stores' physical structures and inventories—will all have profound effects upon the food we eat, the food system as a whole, and upon food security. It is therefore important to monitor several indicators related to our food retail system. There exists, however, very little public data, and what appears to be an unwillingness on the part of government agencies to publish information about this critical part of our communities and economy. Despite that constraint, we can say a significant amount about our food retail sector.
**GEOGRAPHIC STRUCTURE AND “FOOD DESERTS”**

In June 2012, Sask Trends Monitor produced an excellent report for the two organizations, the Regina Qu'Appelle Health Region and Saskatchewan in Motion. The report, *Accessing Healthy Food Choices in Regina*, detailed grocery store, convenience store, and restaurant locations. The report includes many pages of geographic information system (GIS) maps and statistical analyses. It looked at the locations and accessibility of 631 restaurants and food stores in Regina to determine which city neighbourhoods have walkable access (<750 metres distance) to supermarkets, and to other food retailers and restaurants. Among the report’s many findings are these:

1. Of the 333 neighbourhoods identified by the study, 82—approximately one in four—have no walkable access to food; they have no restaurants and no food stores within three-quarters of a kilometre.

2. 104 neighbourhoods—approximately one in three—have, at best, a convenience store within walking distance.

3. 193 neighbourhoods—more than half—have access to only a restaurant within walking distance; they have no supermarkets or convenience stores within walking distance.

4. Just 67 neighbourhoods—approximately one in five—have good access to food and are within walking distance of a variety of food facilities including at least one supermarket, at least one full-service restaurant, and at least one convenience store. These neighbourhoods are located near the relatively few supermarkets in Regina. See map below (Sask Trends Monitor, 2012).

Food store proximity is a key component of affordability and accessibility because citizens in neighbourhoods without supermarkets may be forced to spend scarce dollars on taxi or bus fares, or to sometimes shop at more expensive convenience stores, specialty stores, or gas stations. The Sask Trends Monitor report shows that Regina citizens experience highly unequal access to food stores and it is likely that many will incur higher costs and reduced food security as a result. Many residents live in “food deserts”: neighbourhoods distant from food stores of any kind.

*Figure 53: Regina, relative proximity and access to supermarkets in various neighbourhoods, 2011 (Sask Trends Monitor, 2012, p. 22).*
Figure 53 shows the locations and concentration of Regina’s 25 supermarkets and the uneven access various neighbourhoods have to those stores. While some neighbourhoods have three or more supermarkets within walking distance (<750 metres), the majority of neighbourhoods have none. (See Figure 54, below.) Half of Regina neighbourhoods are more than 1.1 kilometers from a supermarket. (Sask Trends Monitor, 2012).

Approximately one-quarter of neighbourhoods have walkable access to supermarkets. But more than a third (36%) of neighbourhoods are one-and-a-quarter to two-and-a-half kilometers from a supermarket. And five percent are more than two-and-a-half kilometers distance (Sask Trends Monitor, 2012).

**FOOD RETAIL: OWNERSHIP STRUCTURE AND CORPORATE CONCENTRATION**

Full-service grocery stores are disappearing from smaller communities around Regina, and from many Regina neighbourhoods. There is increasing geographic concentration and there is also increasing corporate concentration. A few large companies own an increasing portion of the supermarkets. Five corporations and one co-operative sell most of the grocery-store food in Regina. Those six food retailers are:

1. **Loblaw Companies Ltd.** (Extra Foods, Real Canadian Superstore, Real Canadian Wholesale Club). Estimated Canadian food sales in 2010: $31.6 billion.

2. **Sobeys Inc.** Estimated Canadian food sales in 2010: $15.7 billion.

3. **Costco Canada Inc.** Estimated Canadian food sales in 2010: $6.8 billion.

4. **Canada Safeway Inc.** Estimated Canadian food sales in 2010: $6.7 billion.

5. **Walmart Canada Corp.** Estimated Canadian food sales in 2010: $5.0 billion.

6. **Co-ops (incl. Sherwood Co-op).** Estimated Canadian food sales in 2010: $3.4 billion (all Canadian Co-ops).

   (OSEC, 2011b, p. 17).
In Canada, three companies—Loblaw’s, Sobeys, and Metro—own 82% of the grocery stores. (See graph in Figure 55.) These companies are huge food sellers, but also huge food product buyers, at the wholesale level. It is likely that this 82% share gives these three companies outsized power to shape our nation’s food system.

The numbers change however, and the food sales marketplace is revealed to be a bit less concentrated if we add food sales by general merchandise retailers such as Walmart and Costco. Please see next graph in Figure 56.

Supermarket chains sell approximately 75% of the food in Canada. General merchandise retailers, specialty food stores, convenience stores, drug stores, and gas stations account for about 25% of sales (by value, not volume).
Not all food is retailed, and not all food is produced by farming. Traditional Indigenous foods are accessed and distributed in ways far different than foods produced by the dominant agri-food systems and distributed by the dominant food retail system. Alongside this formal and much-studied economy is a much less visible but critically important set of relations and systems for accessing and distributing Indigenous foods. Indigenous foods are seldom retailed, instead they are accessed and distributed by traditional, non-commercial means: through urban food caches, gifting, sharing, trading, feasting, occasional supplies brought by travelers, travel back to traditional territories to procure foods, and intra-family supply networks. These networks of supply are based on relationships, care, and respect and are built upon traditions that extend back millennia into our past.

A policy focus on agricultural production and on the dominant food retail system often marginalizes the study of Indigenous food access and distribution in urban centres. We have plush data on the systems that produce and supply beef and oranges to Regina, but virtually no data on the systems that supply deer meat and wild mushrooms. Going beyond Regina, there exists a nearly unbroken horizon of research gaps and data voids pertaining to Indigenous food systems within Canadian cities. Outside of the Aboriginal groups themselves, there is virtually no information or knowledge about this. We have no data or documentation on urban Indigenous food systems—systems that probably provide a significant part of the food supply to a significant portion of the Regina population. (These conclusions are drawn from a multi-page study prepared in parallel to this Scan)

It cannot be stated too often nor too strongly: for a city such as Regina, if governments and agencies do not work effectively to study Indigenous food systems, if they do not collect data and ensure that they understand Indigenous food systems, then they cannot hope to bring food security to Regina as a whole.

Though data on Indigenous food systems is almost non-existent, some researchers have started to sketch the outlines of those food systems and the factors that allow or prevent access to Indigenous foods in urban environments. An excellent report entitled *Healthy Eating and Food Security for Urban Aboriginal Peoples Living in Vancouver* takes a big-picture look at barriers to accessing Indigenous foods in urban environment (Eliot & Jayatilaka, 2011). As noted above, with regard to Indigenous food systems in Regina (and other non-commercial and alternative food systems within and around the city) it isn’t merely the case that pieces of the data are unavailable: virtually all the data is missing. We face not just micro-gaps in our understanding; we face macro-gaps—an almost total information and data void.
Access to Indigenous Foods in Regina

With regard to traditional Indigenous foods in urban environments, we do not know:

1. The types of Indigenous foods that might be available and consumed in Regina;
2. Which Indigenous foods are unavailable, and why;
3. Consumption quantities;
4. How such foods are distributed or accessed in Regina and other Canadian cities;
5. The relative importance of formal channels (retail and commoditized food) vs. informal channels (occasional supplies brought by travelers, urban caches, gifting, sharing, trading, feasting, travel back to traditional territories to procure foods, and intra-family supply) in supplying and distributing this food;
6. The time and monetary costs of hunting or gathering such foods, processing, preserving or transporting them, and how these costs affect access to these foods in urban environments that are remote from the sources of these foods;
7. The extent that our policy, legal, and regulatory systems may create intentional, unanticipated or unintended barriers to access to these foods;
8. Whether there is sufficient and secure access to these foods in hospitals, prisons, schools, and care homes; or
9. How barriers to access to traditional Indigenous foods may affect the health of Aboriginal peoples living in Regina and other cities.

As an example of what we don't know—let us ask the question: What effect do multi-billion dollar taxpayer-funded subsidies to the dominant agriculture/agri-food systems have on Indigenous food access and distribution?

There is an asymmetry in government financial support. The dominant agri-food system receives $3 billion to $4 billion in taxpayer subsidies each year through farm support program payments. (Statistics Canada, 2012e). According to statistics Canada (2011), Aboriginal people made up roughly 4% of the Canadian population, 15.6% (207, 215) of the Saskatchewan population and 9.3% (19, 785) of the Regina population. If we are considering the potential demand for traditional Indigenous foods in the Regina area, we have to consider the additional 248, 146 Status Indians making use of the health services in the Regina Qu’Appelle Health Region (Saskatchewan Ministry of Health, 2011). It seems logical to consider that these same individuals may also be acquiring the bulk of their food needs in the Regina area.

If our food system was configured differently, traditional Indigenous foods might make up 4%, 9% or even 16% of the food flows in Canada, Regina and Saskatchewan (respectively). If this were the case, and if taxpayer funded support were provided on a comparable basis, producers
of Indigenous foods might receive $100 million or more per year in taxpayer-funded support for their food system. The effect of that multi-million-dollar injection, on the prices and availability of Indigenous foods, would be transformative.

The preceding scenario begins to illuminate the relative disadvantage created for Indigenous foods and indigenous peoples as a result of huge subsidies to the dominant agri-food and retail systems. It is likely that research could document the fact that tax-funded subsidies to the dominant food system make indigenous foods less available and relatively more expensive and make it harder to support oneself financially producing Indigenous foods. However, we don't know, because we simply don't have enough data. The following sections will present an overview of the gaps in knowledge that need to be addressed to complete the picture of food systems that operate in Regina. It is important to note that to include ANY data on Indigenous food systems, the environmental scan needed to be expanded beyond Regina, beyond Saskatchewan, to a Canada-wide search.

To understand how people access Indigenous foods and/or medicines in Regina (and other cities) means addressing really several related questions:

1. What are the names and locations of Regina businesses that sell wild game, fish, traditional foods, and medicines?
2. How do those businesses get their supplies?
3. Which Indigenous foods are available and which are unavailable, and why?
4. What is the relative importance of formal channels (retail and commoditized food) vs. Informal channels (occasional supplies brought by travellers, urban caches, gifting, sharing, trading, feasting, travel back to traditional territories to procure foods, and intra-family supply)?
5. What are the policy, legal, and regulatory barriers to access?
6. Are there other barriers, such as transportation distances, food preservation challenges, or scale and efficiency issues?
7. Do prices create a barrier? (This is covered separately in its own section)
8. Are traditional foods offered in hospitals, prisons, schools, and care homes?
9. Are traditional food services outsourced or prepared?

As noted above, there are few, if any, reports, journal articles, or data-sources detailing the systems that retail or otherwise distribute traditional Indigenous foods within urban environments in Canada. There is barren landscape of research gaps—an intellectual silence from governments, academics, and Indigenous organizations. In reply to email inquiries sent (as part of the research conducted for this Environmental Scan) to more than four dozen leading researchers and experts across Canada, few could suggest even a single paper that contained significant amounts of detailed information on this topic.
This notwithstanding, we can make significant progress in systematizing some understanding of urban Indigenous food systems. The following expands on the list of questions above, gives detailed data and sources wherever possible, gives specifics of the research gaps, and suggests research and information-gathering strategies that could begin to answer key questions.

What are the names and locations of Regina businesses that sell wild game, fish, traditional foods, and medicines?

Extent of knowledge: There exists no listing of shops and business where the public can purchase indigenous foods in Regina. There is no academic study on the retailing of Indigenous food in Regina or Saskatoon or Saskatchewan (or on any other city in Canada, save perhaps some information on Vancouver—see reports listed in Section 7). There does exist research on Indigenous foods, but nearly all research looks at non-urban settings (again, with the possible exception of one report on Vancouver).

Strategies to obtain knowledge: The report *Accessing Healthy Food Choices in Regina* includes a list of 59 Regina specialty food stores (Sask Trends Monitor, 2012). Phone calls or paper surveys to those stores could determine if they sell Indigenous foods. Alternatively, interviews with First Nations, Métis, and Inuit citizens could begin to sketch out the formal (retail, commodified, cash-based) food distribution and access system, as well as the informal system (caches, gifting, sharing, trading, feasting, and family supply networks).

How do those businesses that retail Indigenous foods get their supplies?

Extent of knowledge: There exists no information on this topic, no study on the wholesaling or transportation or aggregation or distribution of Indigenous food in Regina (or in any other Canadian city).

Strategies to obtain knowledge: Interviews with businesspeople and intensive community research would be necessary to answer this question.

Which Indigenous foods are available and which are unavailable, and why?

In the section below, on “consumption of Indigenous foods,” we begin to see which specific foods might be available. Much detail is lacking, however.

What is the relative importance of formal channels (retail and commoditized food) vs. Informal (occasional supplies brought by travellers, urban caches, gifting, sharing, trading, feasting, and family supply)?

Again, we have virtually no information on how food comes into Regina or is accessed or distributed within the city. Over and over, in their emails, researchers and academics report, anecdotally, that in urban centres most Indigenous food is distributed and accessed via informal channels. Research is needed to describe these channels.

What are the policy, legal, and regulatory barriers to access?
Since we know so little about how Regina residents distribute and access Indigenous foods, we can only speculate as to the roadblocks. Nevertheless, we can suggest a number of probable obstacles, including meat inspection. There are three tiers of meat inspection programs in Saskatchewan:

1. Federal inspection,
2. Province of Regina Domestic Meat Inspection Program, and
3. Regina Qu’Appelle Health Region’s own inspection system.

In order for meat to be retailed, it must be processed through a facility in compliance with one of these regulatory systems. The question then is: Can moose, deer, ducks, and other wild game be processed through one or more of these channels and retailed in Regina? No. The regulatory frameworks are complex, but an important stumbling block is apparent: To be retailed, the animal must be brought alive to one of these facilities and killed there. If it is not, some of these facilities can process game animals for the hunter’s own consumption (and that of family and friends), but the meat cannot be retailed. This requirement for on-site slaughter provides a significant barrier to the retail sale of meat from wild game. It is worth noting, however, that farm-raised elk, bison, or deer might be slaughtered and processed in these facilities in such a way as to allow retail sale. The question then is whether the meat from farm-raised bison, elk, or other animals constitutes traditional Indigenous food.

A related barrier, perhaps an outgrowth of the way we regulate meat and food inspection, is the loss of meat processing facilities. Local abattoirs are closing—disappearing from communities across Canada. Research is needed to document the declining numbers and to determine how much of a barrier this may create for distribution of, and access to, Indigenous foods, and to local food in general.

Other policy, legal, and regulatory barriers to access of Indigenous foods include restrictions on hunting and fishing—both commercial and for subsistence. Although there is extensive research and writing on the issue of “hunting and fishing rights” we did not have the necessary time to explore that research in this report.

Are there other barriers, such as transportation distances, food preservation, etc.?

Transportation and processing may make traditional foods (relatively inexpensive where they originate) expensive in urban centres. See section on prices, below.

Food preservation in transport, such as freezing or chilling for meat and fish, may be a barrier. Also, traditional preservation techniques such as smoking or canning—though culturally important and contributors to the quality, taste, and enjoyment of the food—can be relatively labour intensive and contribute to higher costs or lower availability of some Indigenous foods. Unlike most grocery store foods, many of which are products of mass-scale industrial food systems, Indigenous foods are hand-made.

1 Information obtained from a series of telephone conversations and emails with officials in the province’s Domestic Meat Inspection Program and with officials at the Regina Qu’Appelle Health Region’s food safety inspection program.
Relative scale may be an issue. Supermarket foods are processed, transported, wholesaled, and retailed on a mass basis—thousands of units or tens of tonnes. Traditional foods, in contrast, are prepared and transported in relatively small quantities. It may be the case that transportation economics and differences in the scale of the systems affect access, availability, and price. On the other hand, efficiencies within Indigenous food systems, such as the lack of a need to advertise food or maintain managerial bureaucracies, may make Indigenous foods cost competitive.

Are traditional foods offered in hospitals, prisons, schools, and care homes?

Considerable efforts were made to try to determine the extent to which institutions provided access to traditional Indigenous foods. Contacts were made to the provincial Corrections Division inquiring about access in prisons, to the Regina Qu'Appelle Health Region inquiring about access in hospitals, and to Regina Food For Learning (RFFL) inquiring about food in schools. Time did not allow sufficient follow-up to ascertain the details of access in each type of institution.

An initial response from the province’s Corrections Division stated that there was access to certain foods, such as berries and bannock, but that roadblocks in the meat inspection system (detailed above) precluded serving wild game meats to inmates.

Significantly more research is needed in this area. Most will probably have to be conducted through interviews with senior managers responsible for food procurement and supply in each institutional area.

Are traditional food services outsourced or prepared?

Many restaurants, hospitals, correctional facilities, care homes, and other institutions have outsourced basic food preparation to food services companies such as Sysco, Gordon Food Services (GFS), Compass, Sodexo, Cara, etc. These companies deliver finished or partially finished meals or meal components to institutions and restaurants. This centralization and mass production of food preparation, and the attendant deskilling of kitchen staff in institutions, probably results in a reduction of capacity at institutions to provide traditional Indigenous foods. No research or reporting exists on this topic.

To conclude our discussion of availability and access to Indigenous foods we would like to highlight the excellent report Healthy Eating and Food Security for Urban Aboriginal Peoples Living in Vancouver that takes a big-picture look at barriers to accessing Indigenous foods in urban environments (Elliott and Jayatilaka, 2011). Most useful perhaps is their listing of factors that block or determine access to Indigenous food in cities. The two diagrams (Figures 57 and 58) that follow are taken from that report.
Figure 57: Factors that limit access to traditional Indigenous foods in cities (Elliot & Jayatilaka, 2011, p.15).

Figure 58: Summary of main factors that determine access to traditional Indigenous foods (Elliot & Jayatilaka, 2011, p.22).
**COSTS OF INDIGENOUS FOODS: PRICES OF GAME, FISH, TRADITIONAL FOODS, AND MEDICINES**

*Price data on traditional Indigenous foods and medicines*

With very few exceptions, there is no published or available data on retail prices of Indigenous foods and medicines. This is not surprising given that there have been virtually no studies, and it appears that there is no information on where such foods might be retailed or how they might be sourced.

If one considers farm-raised bison, elk, deer, and other game species to be Indigenous foods, then one could consult producer groups for information on prices, wholesale or retail. Two Government of Saskatchewan reports do list values for farm-raised venison, though these values are now more than a decade out of date (Sebastian-Hanson, 1996 and Ferguson et al, 2000).

*Costs of indigenous foods*

Because the bulk of Indigenous foods are probably distributed via informal channels, often without explicit cash payment, the discussion of prices for such foods can be recast as an inquiry into the costs of procuring and providing such foods. It is almost certain that these costs—fuel, on- and off-road vehicles, ammunition, other hunting and fishing and camping supplies—is rising rapidly. Moreover, unlike the dominant agri-food system, the production of Indigenous foods cannot be industrialized and, in this way, made cheaper, as is the case for pork production, for example. The industrialization of the dominant food system is likely making Indigenous foods relatively more expensive. Research into this area is needed.

*Subsidies to the dominant agriculture/agri-food systems, but not to Indigenous systems*

In terms of prices for (and availability of) traditional foods, there is a need to research and document an asymmetry in taxpayer-funded support. The dominant agri-food system receives $3 billion to $4 billion in taxpayer subsidies each year through farm support program payments (Statistic Canada 2012e). Aboriginal peoples in Canada make up roughly 4% of the population. If the Indigenous foods sector received production subsidies that reflected the relative population proportion, those subsidies would equal $140 million per year (4% of $3.5 billion). The effect of an annual $140 million injection, on the prices and availability of Indigenous foods, would be transformative. It is not the case, however, that food production subsidies should be allocated based on population portions. Nevertheless, the preceding scenario illustrates the relative disadvantage created for Indigenous foods as a result of huge subsidies to the dominant agri-food and retail systems. It is likely that research could document the fact that tax-funded subsidies to the dominant food system make indigenous foods less available and relatively more expensive and make it harder to support oneself financially producing Indigenous foods.

Note: Canada’s Food Mail Program, and its successor Nutrition North Canada (started April 1, 2011), have budgets of $40 million to $60 million annually (Nutrition North Canada, 2013). These programs, however, should not be seen as subsidies to Indigenous foods. To the contrary, most of the food handled by these programs is produced and processed within the dominant agri-food system and is shipped north. Therefore these totals should probably be added to the $3 billion to $4 billion total for Canadian agri-food subsidies—subsidies that disadvantage traditional foods.
Relative costs and price-effects of transportation, food preservation, aggregation, and distribution

In the places where they are hunted and gathered and caught, traditional foods may be relatively inexpensive (both in terms of dollars, and time and resources spent) compared to commercial agri-foods. Indigenous foods may be the “low cost option.” But these foods may become the high-cost option after they are transported “south” to distant urban centres.

CONSUMPTION OF INDIGENOUS FOODS

Consumption data

It is only when we come to the consumption of Indigenous foods in urban centres that we begin to find glimpses of actual data, though the initial promise often ends in disappointment.

Aboriginal Peoples Survey and Aboriginal Children’s Survey

Statistics Canada provides several important datasets that include information on food consumption. These include:

1. Aboriginal Peoples Survey 2001;
2. Aboriginal Children’s Survey 2006 (< 6 years old);
3. Aboriginal Peoples Survey 2006 (6 years – 14 years); and
4. Aboriginal Peoples Survey 2006 (15 years and over).

These studies provide disaggregated data on various Aboriginal peoples—Métis, Inuit, First Nations. Some promise disaggregated data for Census Metropolitan Areas (CMAs, i.e., cities) such as Regina. Most include data listing the number of times that certain groups consumed selected traditional foods. However, the data collection is patchy, to the point that it may be unusable for many purposes.

For example, for the information from the Surveys of most interest to this report—frequency of consumption of traditional foods—the Aboriginal Peoples Survey 2006 collected detailed data, but only for Métis people, not for other Aboriginal peoples. The Aboriginal Peoples Survey 2006 (Statistics Canada, 2006c) questionnaire includes a Métis Supplement (p. 37) that includes questions on traditional foods (p. 56). The Survey collected data on the number of times that Métis adults and children ate:

1. Land based animals such as moose, caribou, bear, deer, buffalo, etc.;
2. Country berries;
3. Game birds;
4. Small game such as rabbit, muskrat, etc.;
5. Wild vegetation; and
6. Bannock or fry bread.

It appears that access to this data on Métis food consumption, for any geography more detailed than Canada-wide, requires a custom tabulation from Statistics Canada. It is important to note here, that bannock or fry bread is a relatively new tradition, developed over the last 500 years alongside trade for Euro-Canadian foods like flour, sugar and vegetable oil. Some studies indicate that it is this increased dependence upon processed carbohydrates that’s been key to the increase of non-insulin diabetes mellitus and other chronic diseases among Aboriginal people (Westman et al, 2007; Accurso et al., 2008).

The Aboriginal Children’s Survey 2006 also holds promise, as it too includes questions on the frequency of consumption of traditional foods. Access to this data, however, also requires a request for a custom tabulation from Statistics Canada, a service that comes with a cost (Statistics Canada, 2006d).

First Nations Regional Health Survey

Also promising in terms of data on consumption of traditional foods is a report by the First Nations Information Governance Centre entitled First Nations Regional Health Survey (RHS) 2008/10. The table below (Figure 59) is taken from that report.

<table>
<thead>
<tr>
<th>Food Category</th>
<th>Not at all %</th>
<th>A few times %</th>
<th>Often %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land-based animals (moose, caribou, bear, deer, bison, etc.)</td>
<td>22.3</td>
<td>51.3</td>
<td>26.4</td>
</tr>
<tr>
<td>Small game (rabbit, muskrat, etc.)</td>
<td>68.2</td>
<td>24.6</td>
<td>7.2</td>
</tr>
<tr>
<td>Freshwater fish</td>
<td>28.9</td>
<td>48.8</td>
<td>22.3</td>
</tr>
<tr>
<td>Saltwater fish</td>
<td>69.7</td>
<td>23.8</td>
<td>6.4</td>
</tr>
<tr>
<td>Other water-based foods (shellfish, eels, clams, seaweed, etc.)</td>
<td>77.2</td>
<td>19.4</td>
<td>3.5</td>
</tr>
<tr>
<td>Sea-based animals (whale, seal, etc.)</td>
<td>97.1</td>
<td>2.6</td>
<td>0.3</td>
</tr>
<tr>
<td>Game birds (goose, duck, etc.)</td>
<td>58.6</td>
<td>32.6</td>
<td>8.7</td>
</tr>
<tr>
<td>Berries or other wild vegetation</td>
<td>23.0</td>
<td>58.4</td>
<td>18.6</td>
</tr>
<tr>
<td>Bannock/Fry bread</td>
<td>8.0</td>
<td>54.7</td>
<td>37.3</td>
</tr>
<tr>
<td>Wild rice</td>
<td>62.2</td>
<td>31.8</td>
<td>6.0</td>
</tr>
<tr>
<td>Corn soup</td>
<td>72.1</td>
<td>22.2</td>
<td>5.7</td>
</tr>
</tbody>
</table>

*Figure 59: Proportion of First Nations adults reporting consuming particular food items, by frequency of consumption (First nations Information Governance Centre, 2012, p.76).*

The First Nations Regional Health Survey does provide information on consumption of traditional foods by First Nations adults, but does not do so at a geographic level such that we cannot identify Regina, or even urban centres in general. The report provides data only for First Nations people living in First Nations communities.
The data remains important, however, for the purpose of understanding urban Indigenous food systems. The data for First Nations communities gives some indication of more general consumption and some indication of how often First Nations individuals may desire to eat traditional foods, even if lack of supply in urban areas makes those desires impossible to fulfill. This data from the Regional Health Survey can be utilized alongside data that focuses more specifically on Regina and other urban centres to give a more complete view of actual and potential consumption of Indigenous foods.

First Nations Food, Nutrition and Environment Study (FNFNES)

A report by the University of Northern British Columbia, Université de Montréal, and the Assembly of First Nations (2012) entitled First Nations Food, Nutrition, and Environment Study (FNFNES): Results from Manitoba, 2010 includes perhaps the most detailed information about frequency of consumption of traditional foods, but not for Saskatchewan or, more importantly, Regina. It does not even give detailed information for Winnipeg, a city that might be able to serve as a proxy for Regina. The data is for smaller communities in Manitoba (Chan et al, 2010).

The FNFNES also did a regional study for British Columbia entitled First Nations Food, Nutrition and Environment Study (FNFNES): Results from British Columbia, 2008/2009 (Chan et al, 2011). As with the Manitoba report, this extensive report (216 pages) is rich with information on consumption of Indigenous foods, but does not contain information on access or distribution in urban centres.

The information on traditional foods collected by the FNFNES is extremely detailed. For some indication of the potential detail in this data, see the questionnaire at http://www.fnfnes.ca/docs/Forms/FNFNES%20Ontario%202012%20Questionnaire.pdf

Saskatchewan fish and game statistics

Another source of data on food consumption might be statistics from provincial governments regarding wildlife harvests. For Saskatchewan, however, the quality and completeness of such data is disappointing. Data is available for a few species, but only from voluntary hunter reporting. Moreover, it is difficult to match wildlife harvests in diverse parts of the province to potential food for Regina or other urban centres. And the data does not distinguish between fish and game harvested by aboriginal peoples and that by non-aboriginal.

Saskatchewan food-processing statistics

Apart from, perhaps, some specific foods (e.g. Farm-raised elk) it is unlikely that food processing data exists that can cast light upon Indigenous food consumption in Regina or other urban centres. The problem is four-fold: 1) Data is scarce, often proprietary, and pains-taking to find and access; 2) Data may not show how much product is exported out of the province or country; 3) Data may not show how much is actually retailed or consumed in Regina; and 4) Data may not distinguish between consumption by aboriginal vs. Non-aboriginal groups.
FACILITIES FOR PROCESSING FISH AND GAME AND REGULATORY AGENCIES AND POLICIES

List of provincial abattoirs that may process wild game

As outlined above, no facilities will process for retail any wild game killed on the landscape. Wild game may be slaughtered in provincial abattoirs, if they are transported live to the abattoir, for prior inspection.

Additional information is needed regarding processing of fish and other foods, and to determine which facilities might actually be processing traditional Indigenous foods.

ACCESS TO LAND AND WATER

On the topic of land and water areas and preserves for hunting, fishing, and gathering, there likely exists voluminous information. No information was obtained due to the brevity of this scan.
Governments and industry often study and report on food production: how many tonnes are grown, the dollar value of processed food and exports, increases in yields, productivity, and efficiency. Far less often, we hear about how much food is wasted. In Canada, we waste 40% of our food. Every year, we waste an estimated $27 billion worth of food (George Morris Centre & Value Chain Management Centre, 2010, p. 2 and 4).

Not only is this a waste of food, but also resources. The food that is thrown away in our supermarkets and homes has to first be grown, often requiring fuels and fossil-fuel intensive fertilizers; it has to be transported, processed, refrigerated, frozen, retailed, refrigerated again, cooked, hauled to land-fills, etc. The mega-tonnes of food wasted every year in Canada represent a huge waste of fossil fuels and other resources.

Per capita, Canada ranks number one among industrialized nations in terms of garbage production (Conference Board of Canada, 2013b). A dubious distinction.

More than 40% of meat, poultry, and vegetables are wasted in Canada—thrown out before cooking and preparation, or prepared and then not eaten. A third of fruits, fats and oil, and fish, are thrown out. Nearly a quarter of most other food suffers the same fate. Even easy to preserve foods such as pulses (peas and beans) and nuts and juice is wasted at a rate of about 15%, most of it at the household level (Agriculture and Agri-Food Canada, 2012).
A comprehensive assessment of the environmental impacts of our food system would fill a volume. It would require detailed analyses of water use and pollution, pesticide use and residues left on the soils and food, wind and water erosion, ecosystems effects of genetically modified crops, effects of irrigation dams on rivers, species extinction from land conversion, fertilizer run-off and ocean dead-zone effects, and many more factors.

Over the past 150 years, farmers have replaced the flora and fauna of the Canadian plains—they’ve ploughed up the plants, expelled the animals and replaced the native species with European and Asian aliens. The environmental effects of 19th and early 20th century agriculture were overwhelming: the demolition of wild, native ecosystems and the construction of human-managed ecosystems imported from other continents. To these effects we’ve added those of late-20th century agriculture: pesticides, fertilizers, intensified livestock production, larger fields and equipment. And to all this, we’ve added the environmental effects of our food transportation, processing, and retail systems—the effects of air-travel for lobsters, trans-continental truck travel for lettuce, centralized processing systems, and car-accessed suburban supermarkets.

Figure 62: Saskatchewan and other provinces and countries, per-capita greenhouse gas emissions, recent years.

Chart derived from:
- International 2008: United Nations Development Programme, International Human Development Indicators, “Carbon Dioxide Emissions per capita (tonnes)” and “Greenhouse gases per capita (tonnes of CO2 equivalent).” Note that this graph uses a 2008 value for carbon dioxide emissions (which cause the bulk of human-induced warming effects) and 2005 data for emissions of other greenhouse gasses (methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, etc.)
Because it is not possible to research and document all the myriad land, water, air, and wildlife impacts of our food system, this report will focus on one emerging aspect of that system: greenhouse gas emissions.

If Saskatchewan were a country, we’d be number two in the world in terms of per-capita greenhouse gas emissions, second only to oil-state Qatar. Our province’s per-capita emissions are three times higher than those of the US, three-and-a-half times higher than Canada overall, and ten times higher than the world average. Per person, Germany’s industrial economy emits one-sixth as much greenhouse gas as Saskatchewan’s.

There are several contributors to our province’s dismal performance, but one of them is our food system. Above, we learned that Canadians waste about 40% of our food—food produced using energy products: fuels, fertilizers, chemical sprays, and large machinery. We learned that we are re-patterning and rerouting our food system—closing the processing plants that once allowed grain or livestock to make a 20 or 100 kilometre trip to our tables and replacing that system with one that requires a 500 or 1,000 kilometre round trip. We also learned that more and more of our towns and neighbourhoods lack food stores, making it impossible for residents to walk to the supermarket, forcing more people into cars.

Figure 63 graph shows energy use per square metre in food stores. The energy units are gigajoules, though this doesn’t matter. What is important is that the graph shows that food retail establishments (supermarkets, etc.) on the Prairies consume twice as much energy per area than do Canadian food retail establishments overall, and three times more energy than the most efficient retailers, in Ontario. We might assume weather is a factor, but data for non-food retailers and other commercial and institutional sectors do not show the same pattern of high energy use in the Prairies (Natural Resources Canada, 2006, p. 12).

Figure 64 is created using United Nations data. It is hard to know just what to make of it, and further investigation and research is clearly required before jumping to conclusions. But on the face of it, the data indicates that the greenhouse gas emissions from Canadian agriculture increased during the 1990 to 2010 period, a time when emissions from agriculture in nearly every other nation decreased significantly. Again, some caution is warranted in interpreting this data, but it may be the case that Saskatchewan’s world-leading per-capita greenhouse gas emissions, detailed above, may be partly the result of some unwise decisions we’ve made regarding how we produce food in this province (United Nations, 2013).

The preceding section on greenhouse gas emissions barely scratches the surface. So much more needs to be known about how Saskatchewan’s food system may be contributing to climate change, and how it will be affected by climate change. Per person, our province and its food system are
among the world’s largest emitters of greenhouse gases. And because we produce food in a relatively dry climate at the centre of a large continent, we will be among those most affected as Earth’s climate warms and becomes more unstable and less predictable. To understand food security in Saskatchewan and Regina, and to begin to overhaul our food system to make it more sustainable and less harmful to the climate and environment, much more needs to be done to understand how our food system affects, and is affected by, climate change.
Health

Health and the ability to access healthy food is affected most by our living conditions, also known as the social determinants of health. Overall, Canadians experience better health than many countries. However, when compared to nations that have developed public policies that strengthen the social determinants of health, Canada is lagging (Mikkonen and Raphael, 2010).

People in Regina have high rates of overweight and obesity. We also have high levels of chronic disease that is likely to increase with Regina’s aging population. Healthy eating is a key modifiable risk factor for preventing and managing many chronic diseases. An individual's ability to choose healthy foods depends on a number of factors such as income, education, access, social support and housing. There is plenty of room for improvement.

The food we eat and our food choices have direct impact on our health through:

• prevention, management and treatment of chronic diseases such as Type 2 diabetes, obesity, heart disease, high blood pressure, and some cancers;

• our nutritional status as infants and children which affects healthy growth and development and improves learning and behaviour outcomes;

• improved mental health and well-being;

• positive self-image and self-esteem;

• incorporation of food within cultural and social activities- this also helps to decrease social isolation and improve social connections which can improve an individual’s nutritional status;

• the safety and quality of our food supply that determines the likelihood of food borne illness and outbreaks such as E. Coli.

Figure 65: Map of the Regina-Qu’Appelle Health Region relative to a 100-mile radius of Regina.
Social Determinants of Health

Living conditions such as quality of communities, housing situation, food security, work settings, health and social service agencies and educational institutions are the primary factors that affect our health. These living conditions can determine life expectancy and whether or not a person will experience chronic disease such as heart disease or diabetes (Mikkonen and Raphael, 2010).

Figure 66 demonstrates that Canada has high rates of poverty and income inequality compared to other wealthy developed nations.

Social safety nets, early childhood development and food security are key aspects of the social determinants of health. Those countries such as Sweden and Denmark that spend more on their social safety nets have a higher quality of life and less chronic disease (Mikkonen and Raphael, 2010). Yet, Canada also has one of the lowest government spending in:

- support of families (25 or 29 OECD countries),
- persons with disabilities (27 out of 29 OECD countries),
- older Canadians (26 out of 29 OECD countries),
- employment training,
- early childhood education and care (26 out of 27 OECD countries) and
- public expenditures (24 out of 30 (OECD countries) (Mikkonen and Raphael, 2010).
**Quality of Life**

Quality of life is an indicator of perceived well-being. Health, household food insecurity, and major depression or distresses are key predictors of quality of life. Sixty percent of people in Regina view their health as very good or excellent (Figure 67; Statistics Canada, 2013). As quality of life decreases; there is an increase in sick time, need for surgeries, ability to carry on full time employment, etc. Perceived mental health is also an indicator of quality of life and health outcomes. Just over 70% of people in Regina rank their mental health as very good or excellent. Eighteen percent of the population perceives life as stressful and 12% have pain or discomfort that prevents activity of daily living.

**Consumption Patterns**

A key modifiable risk factor in the prevention, management and treatment of chronic diseases and mental well-being is healthy eating. Thirty-eight percent of people in Regina consume 5 or more servings of vegetables and fruit each day. This is an overestimate because the current recommendation is 7 servings/day. This is consistent with national levels (Statistics Canada, 2013k). There exists no data that demonstrates the types and quantities of foods consumed by people in Regina. It is assumed that it follows national trends which indicate high levels of processed foods and frequent meals eaten at restaurants (Health Canada, 2010).

**Overweight and Obese**

Regina and Saskatchewan have one of the highest proportions of people who are overweight or obese as measured by Body Mass Index (BMI - a measurement of height and weight). As Figure 68 indicates in Regina, over half of our population 18 years or older is overweight or obese and almost 20% of 12-17 year olds are overweight or obese (Statistics Canada, 2013k). Overweight and obesity can be considered a disease of its own or a risk factor for a number of other chronic diseases such as cardiovascular disease and some cancers (our two leading causes of death and illness in Regina) (Regina Qu'Appelle Health Region, 2011).
Chronic Disease

Regina faces high numbers of people living with chronic conditions. We can expect that chronic disease rates will increase as our population continues to age. Chronic disease is also becoming more prevalent in young adults and children and youth. In Regina, 15% of the population has arthritis, 16% has high blood pressure, 12% has asthma, 7% has diabetes and 4% has chronic obstructive pulmonary disease (COPD) (Statistics Canada, 2013k). People with chronic disease tend to have longer hospital stays, take longer to heal after surgeries, and increase visits to emergency rooms and doctors. Many people, if given an environment that allows healthy choices to be easily made, could greatly improve their quality of life which in return could significantly improve patient flow through a struggling health care system.

Infant Birth Weights

Tracking infant birth weights can be an indicator of potential future health of the population. Babies born with low birth weights and high birth weights are more likely to be overweight or obese as adults. From 2001-2009 (see Figure 70) the rate of high and low birth weight babies has been stable (Regina Qu'Appelle Health Region, 2011).
Vulnerable Populations

There are a number of populations that are more likely to be food insecure and are at higher risk of developing disease, having poorer health outcomes and lower life expectancy. These populations include children and youth, people with low incomes, Indigenous peoples, older adults, immigrants/refugees, and people with disabilities. Food insufficient households were 80% more likely to report having diabetes, 60% more likely to report high blood pressure and 70% more likely to report food allergies than household with sufficient food (Mikkonen and Raphael, 2010). “Typically programs that are aimed at underprivileged citizens are not very efficient in terms of improving health and quality of life because individually-oriented healthy eating programs do not address the social determinants of health that are the underlying causes of many serious illnesses” (Mikkonen and Raphael, 2010).

Health is not distributed equally amongst neighbourhoods in Regina. Figure 71 shows that many of our chronic diseases are higher in low-income neighbourhoods, those that are affected most by the social determinants of health. People who live in lower income neighbourhoods are more likely to attempt suicide, have mental health problems, respiratory problems (COPD), heart disease, diabetes and stroke (Diener, Hennink & Abbas, 2008).

Stress, Bodies & Illness

Chronic stress -- from coping with conditions of low income, poor quality housing, food insecurity, inadequate working conditions, insecure employment, social isolation, lack of supportive relationships, mistrust of others and various forms of discrimination based on Aboriginal status, disability, gender or race -- weakens the immune systems. It also creates environments where people are more likely to engage in unhealthy lifestyle behaviours such as drugs or alcohol abuse, smoking or overeating. Stressful living conditions can make it hard to practice healthy eating habits due to one’s energy being directed towards coping with day-to-day life (Mikkonen and Raphael, 2010).
**Indigenous People**

Indigenous people living off reserve are 4 times more likely to experience food insecurity than non-Aboriginal Canadians (First Nations Information Governance Centre, 2012) and 2 to 3 times more likely to be diagnosed with diabetes. Infant mortality rates are 1.5-4 times greater among Aboriginal Canadians than the overall Canadian rate (First Nations Information Governance Centre, 2012). Currently, no data exists that would help to determine health levels of Indigenous people in Regina.

**Social Capital**

Social capital considers expected collective or economic benefits that come from cooperation between individuals and groups. It incorporates social networks, our interactions with others, and our social cohesion. Social capital can reflect a community's ability to engage and work together to address food security issues within the community. There are numerous indicators for social capital including voter turnout and volunteerism. A current gap in Regina data is the ready access to voter turnout and rates of volunteerism.

It is important to note that StatsCan is collecting data from a general social survey in Regina. The main objective of the survey is to examine the sense of pride and belonging people have for their community and it will include rates of volunteerism, types of organizations involved with, hours of unpaid work, social engagement, social inclusion, charitable giving (Statistics Canada, 2013). When this data is released it will be incorporated in the next phases of the Regina Community Food Assessment.

**Culture**

There are no known data sets or sources for information on the role culture plays in the food system. Nor is there information about the celebration of food within the City of Regina.

**Gaps in Data**

In summary, there are some important gaps in data related to health and the social determinants of health. We have noted gaps in the following:

- neighbourhood specific data
- regional level differences in health outcomes among Indigenous peoples
- type and quantity of food consumed by people in Regina
- social capital indicators and how these are linked to food and health, and
- links between culture, food and health.
Conclusion

This *Environmental Scan* is the first phase of the Regina Community Food Assessment. It provides some much needed information about the conventional and Indigenous food systems, identifies some gaps in data on critical issues, and also highlights areas that need more research. In many ways the *Scan* only scratches the surface as so much more needs to be done to help us build more socially just and environmentally sustainable food systems in Regina.

The next phase of the Regina Community Food Assessment involves holding a number of community consultations to gain a much better sense of peoples’ needs, experiences and perspectives related to food. These consultations should certainly help guide future decisions and policy development at the municipal and provincial levels.
References


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City of Regina. Neighbourhood Profiles retrieved from: http://www.regina.ca/content/info_services/urban_planning/neighbourhood_profiles.shtml


Statistics Canada. (2013e). Special tabulation based on Table002-0011 - Food available in Canada, annual (kilograms per person, per year unless otherwise noted). Retrieved October 21, 2013, from: http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=0020011&paSer=&pattern=&stByVal=1&p1=1&p2=-1&tabMode=dataTable&csid=


Statistics Canada. (2013i). Special tabulation based on Table002-0043 - Farm product prices, crops and livestock, monthly (dollars per metric tonne unless otherwise noted). Retrieved October 21, 2013 from: http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=0020043&paSer=&pattern=&stByVal=1&p1=1&p2=-1&tabMode=dataTable&csid=


Appendix 1: Maps

100-mile Boundary
Maps: Census Agricultural Regions (CARS) and the 100-mile Boundary

Maps: Regina-Qu’Appelle Health Region and the 100-mile Boundary
## Appendix 2: Regina Food Assessment Indicators

### Demographics

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Employment rates</td>
<td></td>
</tr>
<tr>
<td>• % of single parent households</td>
<td></td>
</tr>
<tr>
<td>• % of older adults</td>
<td></td>
</tr>
<tr>
<td>• % of Aboriginal people</td>
<td></td>
</tr>
<tr>
<td>• % of HH spending more than 30% of their income on shelter</td>
<td></td>
</tr>
<tr>
<td>• % of families living below LICO</td>
<td></td>
</tr>
<tr>
<td>• % of population aged 20 years and older within grade 9 completion</td>
<td></td>
</tr>
<tr>
<td>• % of recent immigrants</td>
<td></td>
</tr>
<tr>
<td>• Number of homeless</td>
<td>SK Housing?</td>
</tr>
<tr>
<td>• Availability of social housing</td>
<td></td>
</tr>
<tr>
<td>• Termination of household utilities because of unpaid bills</td>
<td></td>
</tr>
<tr>
<td>• Risk of homelessness</td>
<td></td>
</tr>
</tbody>
</table>
### Economic

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual farm income</td>
<td></td>
</tr>
<tr>
<td>Total gross farm receipts (excluding forest products sold)</td>
<td>Agricultural Community Profiles: <a href="http://www25.statcan.ca:8081/agrprofile/acphome.jsp">http://www25.statcan.ca:8081/agrprofile/acphome.jsp</a></td>
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<tr>
<td>Farm operating expenses</td>
<td>Agricultural Community Profiles: <a href="http://www25.statcan.ca:8081/agrprofile/acphome.jsp">http://www25.statcan.ca:8081/agrprofile/acphome.jsp</a></td>
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<tr>
<td>Total farm capital (market value $)</td>
<td>Agricultural Community Profiles: <a href="http://www25.statcan.ca:8081/agrprofile/acphome.jsp">http://www25.statcan.ca:8081/agrprofile/acphome.jsp</a></td>
</tr>
<tr>
<td>Extent of producers dept</td>
<td>Total debt (both current and long-term) is available provincially and by type of farm in the Farm Financial Survey: <a href="http://www.statcan.ca/english/freepub/21F0008XIB/21F0008XIB2005001.pdf">Http://www.statcan.ca/english/freepub/21F0008XIB/21F0008XIB2005001.pdf</a></td>
</tr>
<tr>
<td>Land tenure</td>
<td>Agricultural Community Profiles: <a href="http://www25.statcan.ca:8081/agrprofile/acphome.jsp">Http://www25.statcan.ca:8081/agrprofile/acphome.jsp</a></td>
</tr>
<tr>
<td>(Land tenure is important because of the amount of control an individual has over how land is utilized and managed. Owners have a greater control and security over land than farmers who lease land.)</td>
<td></td>
</tr>
<tr>
<td>Availability of agricultural land to new farmers</td>
<td>Focus groups with producers</td>
</tr>
<tr>
<td>Average age of farmers</td>
<td>Agricultural Community Profiles: <a href="http://www25.statcan.ca:8081/agrprofile/acphome.jsp">Http://www25.statcan.ca:8081/agrprofile/acphome.jsp</a></td>
</tr>
<tr>
<td>(Age is an indicator of the productivity and longevity of a work sector. If farmers retire and are not replaced by a new generation, land may remain unused or may be sold for development.)</td>
<td></td>
</tr>
<tr>
<td>Contribution of agriculture to the region's economy</td>
<td></td>
</tr>
<tr>
<td>Agrotourism operations</td>
<td></td>
</tr>
</tbody>
</table>

**Sustainability Indicators:**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residents’ access to resources needed to participate in food policy development</td>
<td>Local Food Audit</td>
</tr>
<tr>
<td>Existence of nutrition and/or food procurement policies for public institutions</td>
<td>Institutional Food Inventory Tool</td>
</tr>
<tr>
<td>Number and viability of food-related social enterprises.</td>
<td>Interviews or surveys</td>
</tr>
<tr>
<td>Number of agri-food organizations and programs that are active in the community.</td>
<td>Local Food Audit</td>
</tr>
<tr>
<td>Description</td>
<td>Source</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>Existence and nature of local policies around food, agriculture, and land usage.</td>
<td>Food Policy Inventory</td>
</tr>
<tr>
<td>Implementation of local food, agriculture, and land-use policies.</td>
<td>Food Policy Inventory</td>
</tr>
<tr>
<td>Food-related economic development initiatives or community-owned processing Ventures</td>
<td>Local Food Audit</td>
</tr>
<tr>
<td>The number of community, school, and/or residential garden training programs</td>
<td>Local Food Audit</td>
</tr>
<tr>
<td>Residents’ access to resources needed to grow food or purchase food grown regionally and sustainability.</td>
<td>Local Food Audit</td>
</tr>
</tbody>
</table>
## Community Food Production

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extent of urbanization and sprawl (Urbanization and sprawl can affect the availability of agriculturally productive land within a community.)</td>
<td></td>
</tr>
<tr>
<td>Cost of land (Land that is expensive may disadvantage farming and promote development.)</td>
<td>Canadian Farm Credit Corporation: <a href="http://www.fccfac.ca/en/onlineservices/flv_online_service_e.asp">Http://www.fccfac.ca/en/onlineservices/flv_online_service_e.asp</a></td>
</tr>
<tr>
<td>Number of farms</td>
<td>Agricultural Community Profiles: <a href="http://www25.statcan.ca:8081/agrprofile/acphome.jsp">http://www25.statcan.ca:8081/agrprofile/acphome.jsp</a></td>
</tr>
<tr>
<td>Number of farm operators</td>
<td>Statscan Census of Agriculture</td>
</tr>
<tr>
<td>Total area of farms</td>
<td>Statscan Census of Agriculture Farm operators income</td>
</tr>
<tr>
<td>Top 5 crops</td>
<td></td>
</tr>
<tr>
<td>Number of organic farms</td>
<td></td>
</tr>
<tr>
<td>Average farm size – implications</td>
<td></td>
</tr>
<tr>
<td>Number &amp; % of large, medium, and small farms</td>
<td></td>
</tr>
<tr>
<td>Farming employment &amp; income, including off farm income</td>
<td></td>
</tr>
<tr>
<td>Number &amp; types of food processors</td>
<td></td>
</tr>
<tr>
<td>It would be really interesting to create a map of where our seeds come from, where the crops are grown, where they go once harvested, and how it gets back to our table.</td>
<td></td>
</tr>
</tbody>
</table>


### Food Access & Distribution

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessibility of transportation (including cost)</td>
<td>Regina Transit</td>
</tr>
<tr>
<td>- is there any information on implications on reliance of car travel that can be applied here?</td>
<td></td>
</tr>
<tr>
<td>Food miles for local vs. Imported foods (Transporting food over long distances contributes to environmental pollution.)</td>
<td>Food Miles Calculation Tool</td>
</tr>
<tr>
<td>Ability of local farms to meet the nutritional needs of local consumers.</td>
<td>Optimum Nutrition Environment Assessment Tool</td>
</tr>
<tr>
<td>Number of community gardens, number of plots, and food produced</td>
<td>Community Garden Survey</td>
</tr>
<tr>
<td>The location of community gardens (in relationship to low-income or high-density neighbourhoods) indicates ability for low income populations to access community gardens.</td>
<td>Community Garden Survey</td>
</tr>
<tr>
<td>Waiting lists at community gardens (Long waiting lists suggest the need for more community gardening space.)</td>
<td>Community Garden Survey</td>
</tr>
<tr>
<td>Degree to which gardening space and space for food production is incorporated into city planning</td>
<td>Food Policy Inventory</td>
</tr>
<tr>
<td>Number of vacant lots, brownfields, and 41 available green space that are potentially productive in urban areas</td>
<td>Urban Agriculture Inventory</td>
</tr>
<tr>
<td>Amount of vacant city land converted to food production in urban areas</td>
<td>Urban Agriculture Inventory</td>
</tr>
<tr>
<td>Percentage of residents living in apartments/townhouses vs. Single family Homes (This indicates need for community garden space, as those living in high-density housing likely do not have private gardening space.)</td>
<td>Statistics Canada 2001 Community Profiles: <a href="http://www12.statcan.ca/english/profil01/CP01/Index.cfm?Lang=E">Http://www12.statcan.ca/english/profil01/CP01/Index.cfm?Lang=E</a></td>
</tr>
<tr>
<td>Population density (This may indicate need for community garden space.)</td>
<td></td>
</tr>
<tr>
<td>The amount of produce that is harvested from city orchards and backyard fruit trees.</td>
<td>Local Fruit Tree Project, if applicable</td>
</tr>
<tr>
<td>Extent of small-scale household animal husbandry or honey production</td>
<td>Municipal regulations on animal husbandry and bee-keeping. Community food mapping, interviews, and focus groups.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>Number of Wholesalers</strong></td>
<td><strong>Number of Mainstream Food Retailers</strong>&lt;br&gt;(The number and type of retailers within the community can give some sense of how well people are served by the retail food sector.)&lt;br&gt;Reference Canada is a database of over one million complete business listings in Canada. You can search by business type, company name, geographic location, or standard industrial classification (SIC) code. The database provides details such as address, size, sales, and a key contact person. Data can be accessed at many libraries. Canadian Council of Grocery Distributors: <a href="http://www.ccgd.ca/">http://www.ccgd.ca/</a></td>
</tr>
<tr>
<td><strong>Alternative retailers (e.g., co-ops, farmers markets)</strong>&lt;br&gt;(This can suggest the health of the alternative food sector.)</td>
<td><strong>Number of people who attend farmers’ markets, and amount spent at farmers markets</strong>&lt;br&gt;(These indicators reflect the economic vitality of farmers markets.)&lt;br&gt;Farmers’ market assessment</td>
</tr>
<tr>
<td><strong>Locally-grown fruits and vegetables that are most widely available</strong></td>
<td><strong>Local Food Retail Survey</strong></td>
</tr>
<tr>
<td><strong>Number of Good Food Box depots and number of participants in the program</strong></td>
<td><strong>Contact Good Food Box Program in your area</strong></td>
</tr>
<tr>
<td><strong>Number of Community Shared Agriculture (CSA) farms</strong></td>
<td><strong>Community Food Mapping</strong></td>
</tr>
<tr>
<td><strong>Number of community kitchens</strong></td>
<td><strong>Contact community kitchen coordinator or health authority community developer.</strong></td>
</tr>
<tr>
<td><strong>Number of community food resources per capita</strong></td>
<td><strong>Create an inventory of all resources and divide by the number of these resourced by the number residents in your area of focus.</strong></td>
</tr>
<tr>
<td><strong>Number of charitable food resources and number per capita low-income:</strong>&lt;br&gt;• food banks/food rescue programs&lt;br&gt;• soup kitchens&lt;br&gt;• shelters with meals&lt;br&gt;• mobile kitchens</td>
<td><strong>Contact local food bank or charitable provider network in your area. The Canadian Association of Food Banks has an online list of members by province. Go to <a href="http://www.cafb-acba.ca/">http://www.cafb-acba.ca/</a></strong></td>
</tr>
<tr>
<td>Indicator</td>
<td>Method/Source</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>Number of people who use charitable food resources on a monthly basis</td>
<td>Contact local food bank or charitable provider network in your area.</td>
</tr>
<tr>
<td>(This indicator suggests whether community food insecurity is increasing or decreasing as well as the ability of the charitable system to meet this need. However, there may be a significant population who are either unable or unwilling to use charitable food. By keeping monthly records, it is possible to see fluctuations in use that may point to the need for additional resources at certain times.)</td>
<td></td>
</tr>
<tr>
<td>Number of restaurants serving local food</td>
<td>Local Food Retail Survey</td>
</tr>
<tr>
<td>(The number of restaurants that serve local foods is an indicator of the awareness of local production and the ability of restaurants to buy locally.)</td>
<td></td>
</tr>
<tr>
<td>Availability of local and/or organic compared to conventional produce in mainstream retail stores</td>
<td>Local Food Retail Survey</td>
</tr>
<tr>
<td>Price of local/organic compared to conventional</td>
<td>Local Food Retail Survey</td>
</tr>
<tr>
<td>Location of supermarkets and convenience stores in a community.</td>
<td>GIS or Community Food Mapping</td>
</tr>
<tr>
<td>Distribution of fast food outlets (including convenience stores) and relation to low-income neighbourhoods.</td>
<td>GIS or Community Food Mapping</td>
</tr>
<tr>
<td>Number of fast food outlets per capita</td>
<td>Reference Canada has listings of restaurants. Fast food restaurant chains can be identified by Name.</td>
</tr>
<tr>
<td>Percentage of population that is within walking distance (450 meters) of a large grocery store or of public transportation that will take them to a large grocery store</td>
<td>GIS Food Mapping</td>
</tr>
<tr>
<td>Location of large and other grocery stores relative to public transportation routes.</td>
<td>GIS Food Mapping</td>
</tr>
<tr>
<td>Existence of food buying cooperatives or community food retail outlets</td>
<td></td>
</tr>
<tr>
<td>Number of urban delivery operations (e.g., Small Potatoes Urban Delivery in Vancouver).</td>
<td></td>
</tr>
<tr>
<td>Topic</td>
<td>Source</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>Farmers’ and residents’ degree of participation in and satisfaction</td>
<td>Farmers Market Assessment</td>
</tr>
<tr>
<td>with local farmers’ market arrangements.</td>
<td></td>
</tr>
<tr>
<td>Cost of food in farmers’ markets compared to grocery stores</td>
<td>Farmers Market Assessment</td>
</tr>
<tr>
<td>(This indicator reflects how accessible farmers' markets are to</td>
<td></td>
</tr>
<tr>
<td>those with limited incomes.)</td>
<td></td>
</tr>
<tr>
<td>Number of mobile food vendors and types of food sold</td>
<td>Check municipal regulations regarding mobile food vending</td>
</tr>
<tr>
<td>Number of farm markets and roadside stands</td>
<td></td>
</tr>
<tr>
<td>(Selling directly to consumers is an important way for farmers to</td>
<td></td>
</tr>
<tr>
<td>increase profits, especially for those who cannot enter the</td>
<td></td>
</tr>
<tr>
<td>wholesale market because of competition or economic concentration.)</td>
<td></td>
</tr>
<tr>
<td>Number of participants in Good Food Box programs</td>
<td></td>
</tr>
<tr>
<td>Demographics of residents accessing charitable food sources</td>
<td>Charitable Provider Survey</td>
</tr>
<tr>
<td>(age, gender, ethnicity)</td>
<td></td>
</tr>
<tr>
<td>Where charitable food comes from and the amount that is locally</td>
<td>Charitable Provider Survey</td>
</tr>
<tr>
<td>grown or processed. (At least some of the food provided through</td>
<td></td>
</tr>
<tr>
<td>the charitable food system is purchased. Charitable providers can</td>
<td></td>
</tr>
<tr>
<td>be encouraged to purchase local food whenever</td>
<td></td>
</tr>
<tr>
<td>Number of programs that provide food and/or nutritional</td>
<td>Charitable Provider Survey</td>
</tr>
<tr>
<td>information/support for people with specific health issues (e.g.,</td>
<td></td>
</tr>
<tr>
<td>diabetes, HIV/AIDS) and perceived acceptability and quality of food.</td>
<td></td>
</tr>
<tr>
<td>Charitable food provider policies regarding how food is accessed</td>
<td>Charitable Provider Survey</td>
</tr>
<tr>
<td>(line-ups, religious observances before food is provided, etc.)</td>
<td></td>
</tr>
<tr>
<td>(Line-ups and other barriers can affect the ability of some to</td>
<td></td>
</tr>
<tr>
<td>access charitable food.)</td>
<td></td>
</tr>
<tr>
<td>The percentage of edible food donated from various sources –</td>
<td>Food Diversion Survey</td>
</tr>
<tr>
<td>institutions, retail grocers, restaurants and food processors.</td>
<td></td>
</tr>
<tr>
<td>Research Area</td>
<td>Methodology</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td>The percentage of inedible food from various sources — institutions, retail</td>
<td>Food Diversion Survey</td>
</tr>
<tr>
<td>grocers, restaurants and food processors — that is composted.</td>
<td></td>
</tr>
<tr>
<td>Cost of Nutritious Food Basket relative to household income, low-income</td>
<td>Food Costing Tool</td>
</tr>
<tr>
<td>cutoff (LICO), and social assistance rates</td>
<td></td>
</tr>
<tr>
<td>Average food costs of large and small stores</td>
<td>Food Costing Tool</td>
</tr>
<tr>
<td>Average food costs in wealthy and low income neighbourhoods</td>
<td>Food Costing Tool</td>
</tr>
<tr>
<td>Nutritional quality of food provided at charitable food operations</td>
<td>Charitable Food Quality Assessment</td>
</tr>
<tr>
<td>Consumption of fruits and vegetables</td>
<td></td>
</tr>
<tr>
<td>Exposure to healthy/unhealthy food advertising</td>
<td>Advertising Analysis</td>
</tr>
<tr>
<td>Food knowledge and skills held by community members.</td>
<td>Survey of Community Food Knowledge and Skills</td>
</tr>
</tbody>
</table>
### Health

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obesity/overweight</td>
<td>Sask Health</td>
</tr>
<tr>
<td>Type 2 Diabetes</td>
<td>Stats Can</td>
</tr>
<tr>
<td>Heart disease</td>
<td>Canadian Community Health Survey</td>
</tr>
<tr>
<td>Cancer</td>
<td></td>
</tr>
<tr>
<td>Respiratory disease - asthma, lung</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sask Health</td>
</tr>
<tr>
<td></td>
<td>Stats Can</td>
</tr>
<tr>
<td></td>
<td>Canadian Community Health Survey</td>
</tr>
<tr>
<td></td>
<td>Sask Health</td>
</tr>
<tr>
<td></td>
<td>Stats Can</td>
</tr>
<tr>
<td></td>
<td>Canadian Community Health Survey</td>
</tr>
</tbody>
</table>

### Environmental Health

<table>
<thead>
<tr>
<th>Identified environmental issues in farming Communities</th>
<th>Producer and citizen interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm-worker health (Farm-workers are often the most affected by agricultural contamination and pollution.)</td>
<td>Interviews or focus groups with local farm workers</td>
</tr>
<tr>
<td>Indicator</td>
<td>Data Source</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Community Social Capital:</td>
<td>City of Regina (recent elections voting information)</td>
</tr>
<tr>
<td>Voter registration</td>
<td>Charitable giving and volunteerism statistic available at the provincial level:</td>
</tr>
<tr>
<td>Number of hours spent providing unpaid care to seniors</td>
<td><a href="http://dissemination.statcan.ca/english/greepub/71-542-XIE00001.pdf">Http://dissemination.statcan.ca/english/greepub/71-542-XIE00001.pdf</a></td>
</tr>
<tr>
<td>Seniors living alone (potential measure of social isolation)</td>
<td></td>
</tr>
<tr>
<td>Residential mobility</td>
<td></td>
</tr>
<tr>
<td>Charitable giving</td>
<td></td>
</tr>
<tr>
<td>Volunteerism</td>
<td></td>
</tr>
<tr>
<td>(These indicators reflect a community’s social cohesion and ability to work together to address food security issues.)</td>
<td></td>
</tr>
<tr>
<td>Hunting and Gathering (Aboriginal)</td>
<td>Inventory of traditional foods compared to Foods available today through oral histories.</td>
</tr>
<tr>
<td>Monitoring dietary change for Aboriginal populations is particularly important because a shift away from traditional foods has been associated with increased rates of diabetes and other health problems. Being able to record and restore traditional food practices and resources is an important component to physical, cultural, and spiritual health.</td>
<td></td>
</tr>
<tr>
<td>Dietary change Inventory of traditional foods compared to foods available today through oral histories.</td>
<td></td>
</tr>
<tr>
<td>Traditional food use What is the extent of traditional food use within the community?</td>
<td>What is the extent of traditional food use Within the community? What productive Resources exist for accessing traditional foods?</td>
</tr>
<tr>
<td>What productive resources exist for accessing traditional foods?</td>
<td>Are traditional foods utilized in institutional Meals (e.g., schools)?</td>
</tr>
<tr>
<td>Are traditional foods utilized in institutional Meals (e.g., schools)?</td>
<td></td>
</tr>
</tbody>
</table>
Provincial/National Trends and Additional questions


• Food is a global commodity. Where does the majority of Regina food come from? How does it get here? Who are the key players/distributors/suppliers/producers? Where do they get their food from? (map the process food takes to get to Regina, once in Regina, process from store to home, food waste (ending up in landfills)

• Trade policies, how does “free trade” affect food supply? What inhibits local food from getting to local consumers? What supports this process?

• Role of biotechnology etc. on our food supply

• What affects the cost of food in Regina i.e. Oil prices, weather etc.

• How does climate change affect the Regina food supply (nutritional quality of food, soil quality, water quality)

• Cost of healthy eating in Regina? What would a living wage be?

• How does the housing crisis affect the food system and individual food security?

• Where is food security on the political agenda/ how does it fit into municipal planning?

• How is food security viewed amongst the public? Is it viewed as primarily a low income problem, an individual concern?

• What are the farming practices in Canada, SK, Regina area? I.e. Organic farming, grain farming etc. What are the primary crops in SK and Regina area? What are the methods used?

• Who controls the farms? Family owned? Off-farm employment?

• Food bank and emergency food usage, capacity programming, systems change

• Vegetable and fruit consumption

• Food production, processing SK and Regina are

• Food purchasing and dietary trends

• Role of food marketing, media
Appendix 3: Indigenous Food System Indicators

Rationale

A comprehensive food assessment should take into account the food needs and consumption of all Regina inhabitants. Indigenous people make up a large, growing portion of the Regina population (both stable and transient) and may be major clients of agencies that provide food relief due to poverty or incapacitation. Indigenous people have the right to culturally based foods, which may not be as supported (formally or informally) as the foods from other cultural groups (e.g. European, Mexican, Indian, Japanese, Chinese). Off-reserve Indigenous people in Regina may retain ties to territories in Saskatchewan. Given that foods being brought into Regina by local farmers are being included in the scan, Indigenous foods coming in from Saskatchewan territories should also be considered. Finally, Indigenous foods systems are complicated by their historical marginalization and the dominance of agricultural food systems; a scan that seeks to illuminate gaps in the Regina food system should include some consideration of contexts for facilitating access to Indigenous foods.

Key Search Terms:

Indigenous, Aboriginal, First Nations, Indian, Inuit, Metis, Cree, Dene, Sioux, Saulteaux; Food, Country Foods, Wild Foods, Traditional Foods, Water, Medicine, Traditional Medicines; Fish, Game, Plants, Roots, Berries; Sovereignty, Security, Systems, Protection, Hunting, Fishing, Gathering, Processing, Preservation and Trade

Scan Indicators (Saskatchewan)

- Policy, Court Rulings, Regulations and Acts which supports or creates barriers to Indigenous rights to hunt, fish, gather or trade (eg wild game processing)
- Policy, Agreements, Programs, Websites, Agencies, Events which provide access to Indigenous fish, game, native plants, traditional medicines, water sources (eg Indigenous foods in hospitals and LTC), or capacity development in Indigenous hunting, fishing, gathering, gardening and processing of Indigenous foods and medicines (Regina only)
- Research regarding Indigenous: foods, food security, food demand, food systems, water systems, food sovereignty or food trade
- Retail businesses that sell wild game, fish, traditional foods or medicines (Regina only)
- Cost of Indigenous fish, game, foods and medicines
- Networks or Agencies which share information, arrange gatherings, provide representation, research or advocacy for Indigenous: foods, food systems, water systems, food security, sovereignty, hunting, fishing, gathering, processing or trade
- Land and Water Reserves for hunting, fishing, and gathering
- Facilities, Policies or Agencies for processing or inspecting wild fish and game
Appendix 4: Research Details

More than 60 emails were sent to experts and researchers at the following agencies and institutions asking if they knew of any reports detailing how traditional Indigenous foods are distributed and accessed in urban centres. In the vast majority of cases, the emails were addressed to specific individuals with research expertise.

Aboriginal Health Initiative Program
Assembly of First Nations (AFN)
British Columbia Food Systems Network
British Columbia Provincial Health Services Authority
Centre for Indigenous Peoples’ Nutrition and Environment (CINE)
First Nations Environmental Health Innovation Network (FNEHIN)
First Nations Food, Nutrition, and Environment Study (FNFNES)
Food Secure Canada
Indigenous Food First
Mcgill University
National Collaborating Centre for Aboriginal Health
Regina Public Library
Ryerson University
Saskatoon Public Library
Toronto Food Policy Council
Trent University
Tungasuvvingat Inuit
Université du Québec à Montréal (UQAM)
Université Laval
University of Alberta
University of British Columbia
University of Manitoba
University of Montreal
University of Northern British Columbia
University of Ottawa,
University of Saskatchewan
University of Toronto
University of Victoria,
University of Waterloo
University of Western Ontario
Vancouver Island Health Authority

Population Health Regions: Athabasca, Keewatin, Yatthe, and Mamawetan Churchill River

Approximately two-thirds of the individuals, agencies, and institutions contacted responded with information or advice. In addition, other people forwarded email requests out through email networks. Thus, some people responded with information who were not initially contacted. Overall response volumes and the diversity of respondents gives high confidence that the primary conclusion of this Scan—that there exists little if any information on how traditional Indigenous foods are distributed and accessed in urban environments—is correct and widely shared.