

A Preliminary Analysis of Food Production and Consumption in the Greater Oahe Foodshed

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1.0 Executive Summary

This report's purpose is to provide baseline data on food production and consumption in the Central South Dakota region. The report utilized data from the 2012 Census of Agriculture, the Bureau of Labor Statistics, and the Bureau of Economic Analysis and local consumer and producer surveys to examine agricultural production and consumer spending on food within a 50-mile radius of Pierre, SD. The following are major findings from the report:

1. What is local:

One of the main questions we knew needed to be addressed is, “what does local food even mean?” Rather than defining it ourselves, we asked producers and consumers what local food meant for them. From both the producers and consumers, the plurality of people responded that a 50-mile radius from where they live would be “local” to them, though many people also said they would consider food from South Dakota as a whole to be local.

2. There is a major difference between what we produce and what we consume:

As can be seen in figure 9 on page 16, there is a significant gap between what we produce locally and what we consume in our homes. This could be attributed to many factors, some of which we delineate in this report, but more importantly it shows enormous economic opportunity. If the barriers between local production and local consumption could be lowered, producers may be able to save costs on transportation and storage while consumers could save costs by buying directly from the farm.

3. Identifying the barriers to getting food and selling food:

The major driving force behind doing this analysis was to find out what barriers exist for both producers and consumers. For producers, the question was what barriers they face to being able to produce the kind of food they want and get it to market. For consumers the question was what barriers they face in trying to purchase food that was local and matched their stated values.

For producers, barriers are varied. Some challenges are based in factors we can't change, like weather and the length of the growing season. Producers also noted barriers in how they can get their food to consumers and where they can sell their products. However, the biggest barrier was a perceived lack of a market. There was a clear expressed interest by producers in consumer education about the value of locally-grown food.

For consumers, there seems to be a clear desire to have locally-grown food, but the largest barriers are access and cost. Many consumers value quality, convenience and cost, and find accessing local food that meets these values difficult.

2.0 Description of the Greater Oahe Foodshed

Determining the size of the local foodshed was challenging as opinions varied greatly. Ultimately, it was decided that any county within a 50-mile radius of Pierre, South Dakota would be part of the local foodshed. The 50-mile foodshed encompasses 10 counties. The total estimated population of this area is 40,237 people. Figure 1 below shows a map of the 50-mile foodshed and Table 1 lists the counties and their estimated population.

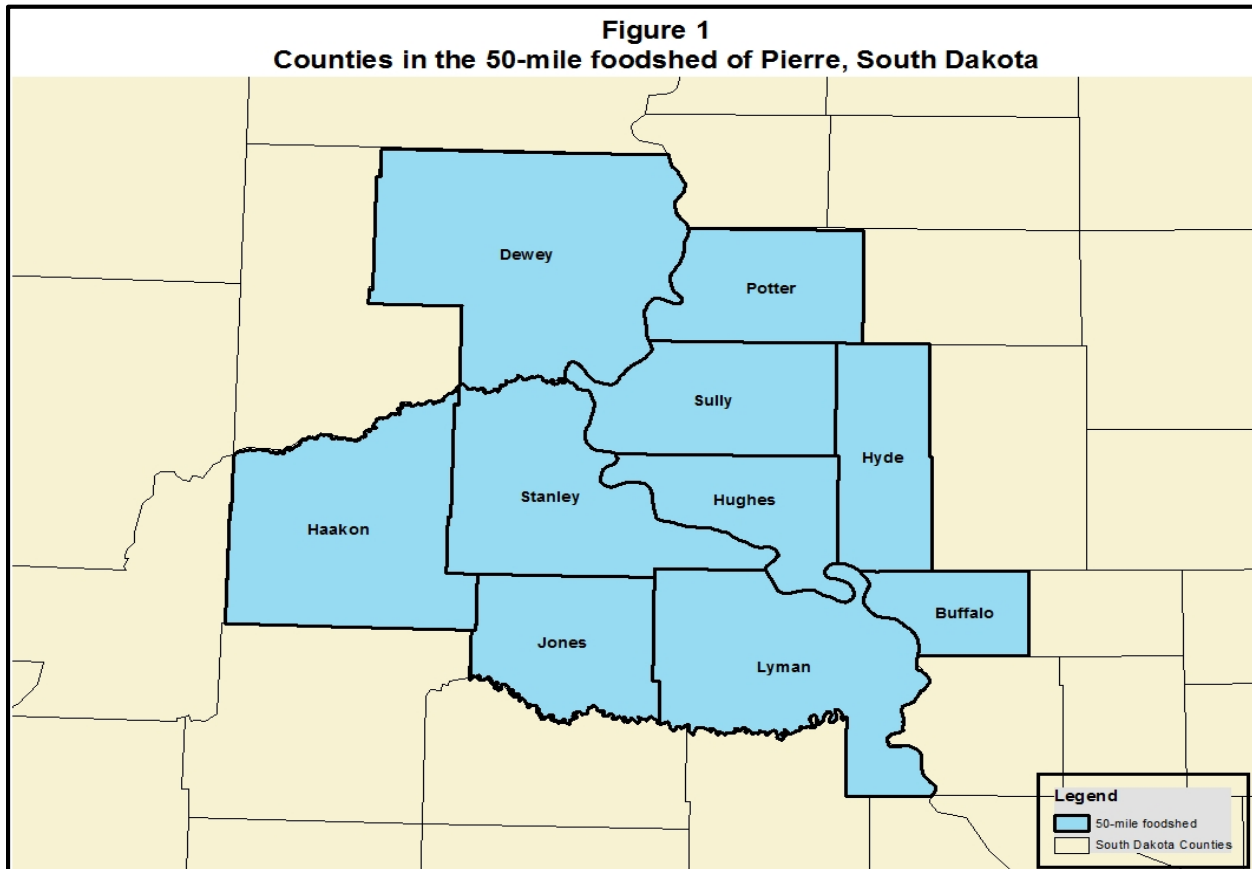


Table 1: Counties and Estimated Population in the 50-mile foodshed

County	Population (U.S. Census Bureau 2014 Estimate)
Jones County	975
Hyde County	1,396
Sully County	1,438
Haakon	1,847
Buffalo	2,077
Potter	2,340
Stanley County	2,983
Lyman County	3,877
Dewey County	5,662
Hughes County	17,642

3.0 Farms and Land

The information provided in this section is based on data from the 2012 South Dakota Census of Agriculture. Definitions and explanations of the categories and terms used here can be found in Appendix B of the 2012 South Dakota Census of Agriculture. Some of the definitions and explanations were extracted from Appendix B and are provided in the Glossary of Terms at the end of this report.

The 50-mile foodshed includes a total of 2,466 farms encompassing over 7.1 million acres resulting in an average farm size of about 2,900 acres. In 2012, 2,005 farms held over 2.8 million acres of cropland, and approximately 2.3 million acres or 81% of the total cropland was harvested by 1,612 farms. The remaining 19% of total cropland was either idle, summer fallowed, had a failed crop, or was used for pasture or grazing but could be cropland without any major improvements. Over 4.1 million acres of permanent pasture or rangeland, with the only use being grazing, are within the 50- mile foodshed.

The size of the farms in this region varies. Of the farms located in the foodshed, 4% were between 1 and 9 acres, 20% were between 10 and 179 acres, 25% were between 180 and 999 acres, and 52% were more than 1,000 acres. Figure 2 below shows the number of farms by total acreage within the foodshed. Figure 3 shows the number of farms by total acreage and by county within the region.

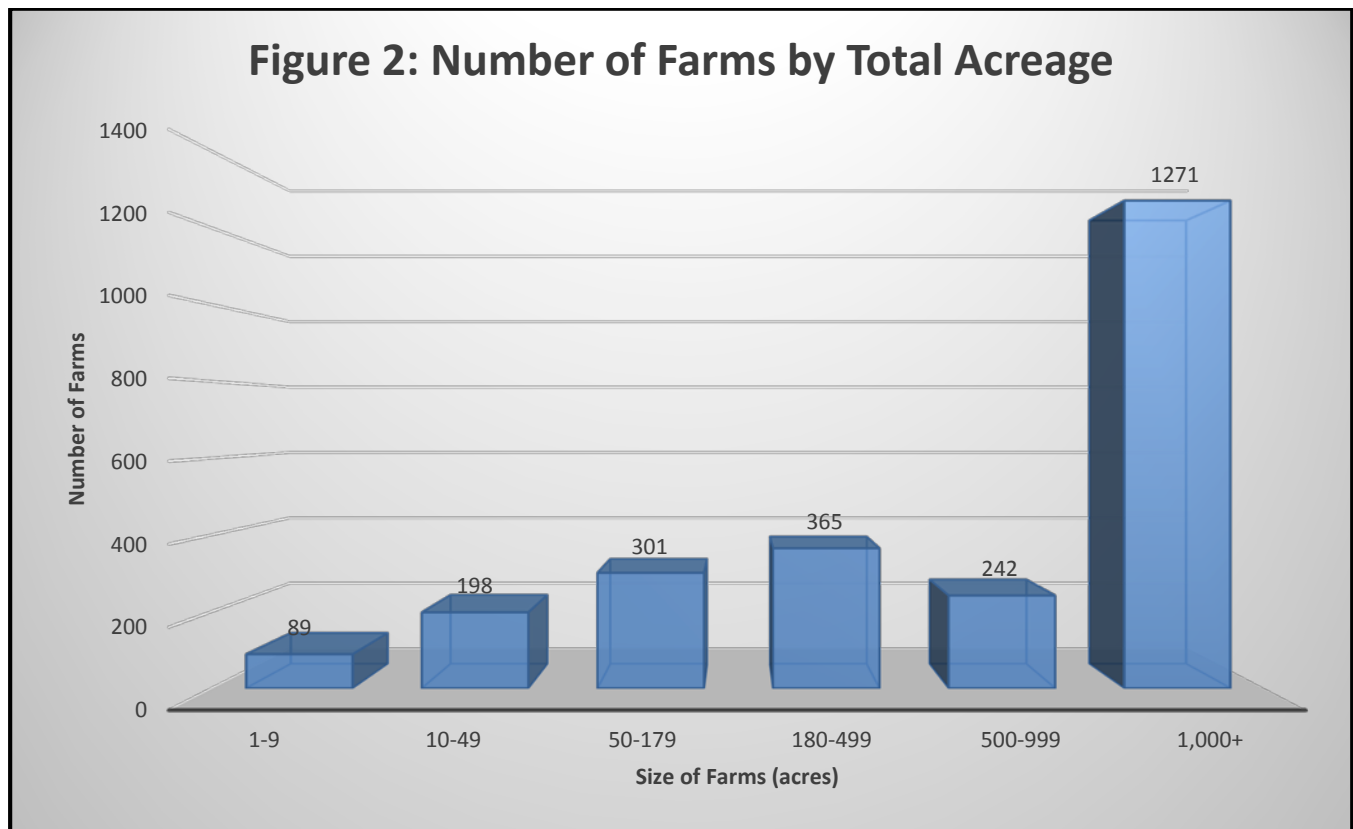


Figure 3: Number of Farms by Total Acreage and County

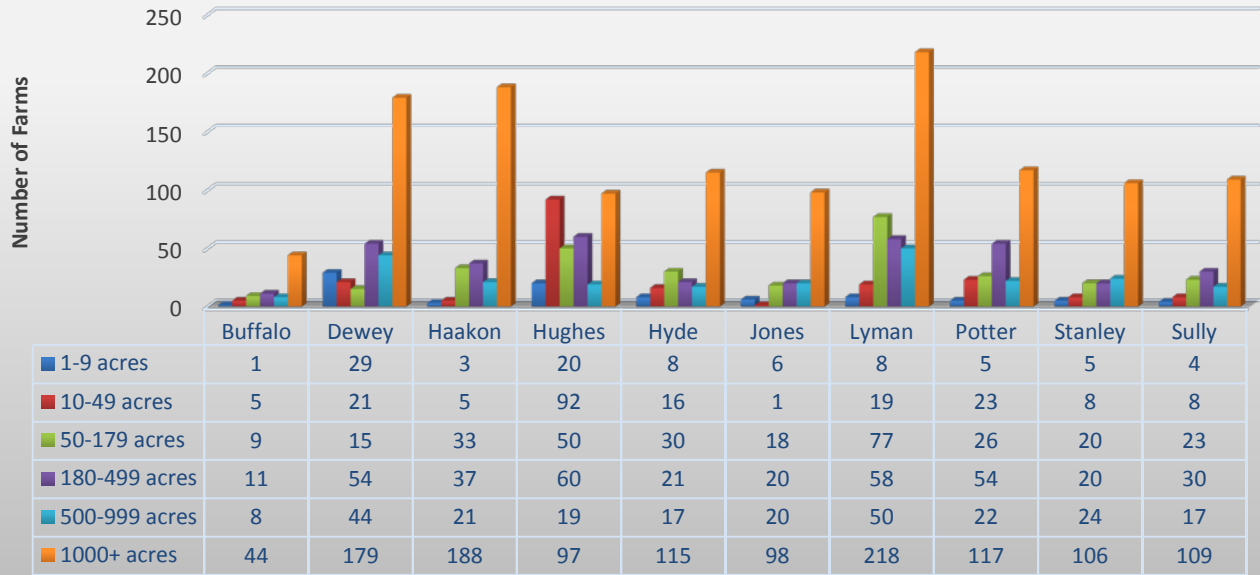


Table 2: Total Number of Farms and Acres by County

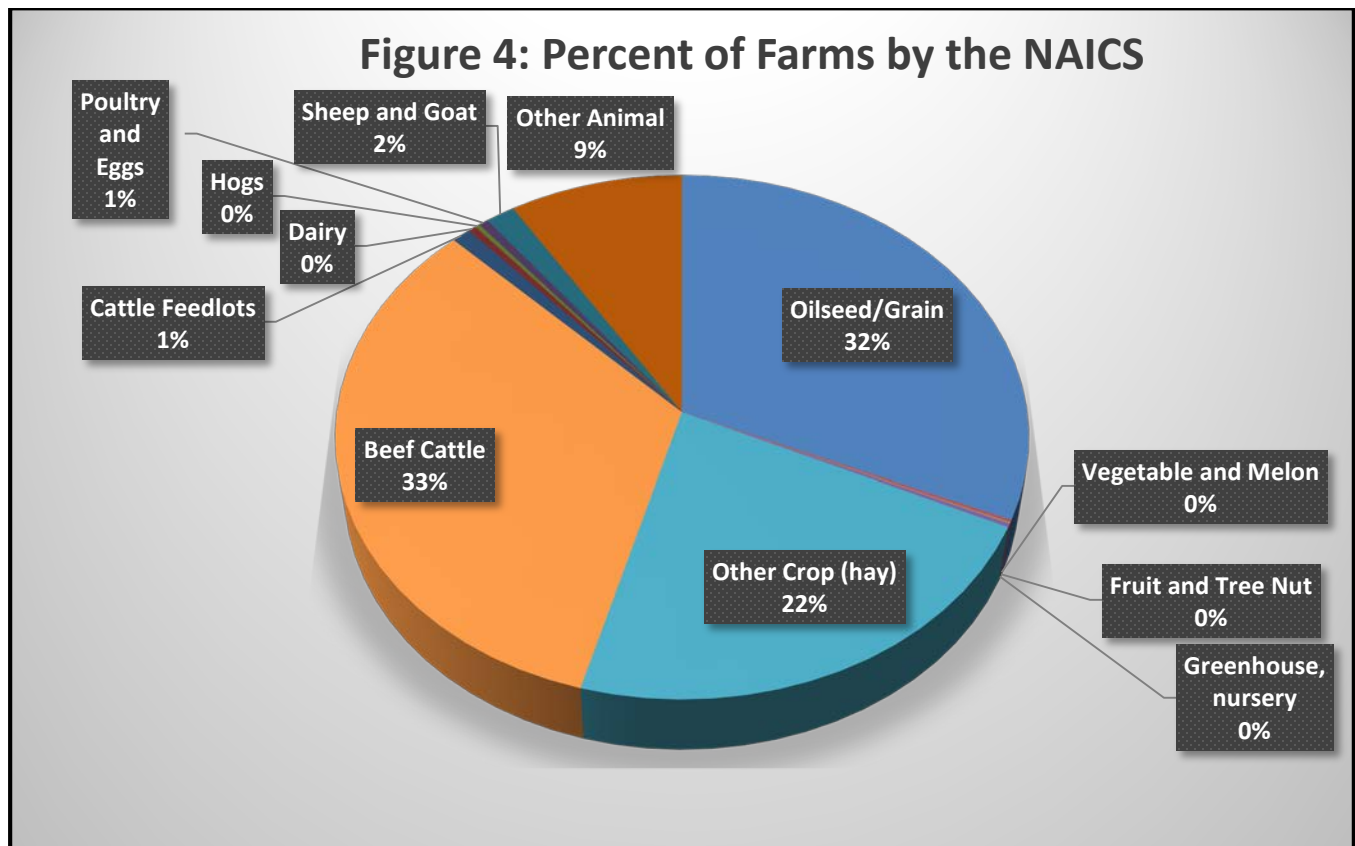
County	Total Number of Farms	Total Acres in Farms
Buffalo	78	296,175
Dewey	342	1,181,719
Haakon	287	1,133,464
Hughes	338	430,930
Hyde	207	514,618
Jones	163	612,384
Lyman	430	1,028,579
Potter	247	538,023
Stanley	183	791,140
Sully	191	628,233

Sixty-four percent of the farms were operated by someone that reported farming as their primary occupation. The remaining farms were operated by someone with a primary occupation that differed from farming. Table 3 illustrates the primary occupation of the farm owners in each of the counties.

Table 3: Primary occupation of farm owners by county

County	Primary Occupation (By Number of Farms)	
	Farming	Other
Buffalo	59	19
Dewey	190	152
Haakon	210	77
Hughes	169	169
Hyde	168	39
Jones	119	44
Lyman	231	199
Potter	168	79
Stanley	121	62
Sully	139	52

For the 2012 Census of Agriculture, all agricultural production establishments were classified by their primary activity using the North American Industry Classification System (NAICS). According to the NAICS, Vegetable and Melons, Fruit and Tree Nut, Greenhouse or Nurseries, Dairy, Hogs, and Poultry and Eggs combined together make up less than 2% of the farms in the foodshed. Oilseed or Grain farms, Beef Cattle farms, and Other Crop farms (typically hay) combined together make up 87% of the farms in this region.



Interest and demand for organically grown food is rising. There are only a few USDA National Organic Program certified farms in the region. However, it appears that many of the vendors at the local farmer’s markets are growing their products using many of the organic principles, but they have not gone through the process to get certified. They explained that the certification process is difficult or they still end up doing or using something that does not meet the National Organic Program certification requirements. The Census data did not indicate what the certified organic farms are producing.

Table 4: Number of USDA National Organic Program Certified Farms

County	Number of Farms
Buffalo	0
Dewey	4
Haakon	0
Hughes	1
Hyde	0
Jones	0
Lyman	2
Potter	0
Stanley	0
Sully	0

3.1 Use of Cropland

Of the 2.3 million acres of cropland harvested in 2012, approximately 23% was used to grow winter wheat for grain, 19% to grow corn for grain, and 15% for both forage (hay) and all varieties of sunflowers. Barley, vegetables and melons, flaxseed, lentils, popcorn, and canola combined were grown on less than 2% of the cropland. The actual acres of flaxseed, lentils, popcorn, and canola are unknown because only one or two farms grew those crops so the Census withheld the data to prevent publishing identifying characteristics of individual farms.

As mentioned earlier, not all of the cropland was harvested in 2012. Approximately 545,000 acres of cropland were not harvested. The total cropland numbers include cropland harvested, other pasture and grazing land that could have grown crops without additional improvements, cropland where crops failed or were abandoned, summer fallowed cropland, and idle cropland or cropland used for cover crops but was not harvested or grazed. Idle cropland includes land enrolled in the Conservation Reserve Program (CRP), Wetlands Reserve Program (WRP), Farmable Wetlands Program (FWP), or the Conservation Reserve Enhancement Program (CREP). This cropland also includes acres with a growing crop that was not harvested in 2012 but would likely be harvested in 2013. For example, acreage planted to winter wheat for harvest in 2013 and no crop was harvested from these acres in 2012. These idle cropland acres are a potential source to grow products that could be sold directly to consumers. With a growing emphasis on soil health, and research showing that it is best to have something growing in your soil as often as possible, growing an agriculture product that could be sold directly to consumers or retailers would benefit both the soil and the people in the foodshed. There were a total of 237,000 acres of idle cropland in the foodshed in

2012. Of these acres, 168,000 acres were enrolled in CRP, WRP, FWP, or CREP. That leaves approximately 69,000 acres available to plant consumer agriculture products. However, it is likely that many of these acres were planted to winter wheat as supported by Figure 5 below. The definition of idle cropland says no crop was harvested, and typically a crop such as spring wheat, winter wheat, or field peas are harvested before winter wheat is planted. During 2012, this region suffered from a severe drought, so it is possible that the first crop that was planted failed due to the drought and therefore nothing was harvested. Then in the fall when moisture conditions improved, they planted winter wheat. Another potential source of acres to produce consumer agriculture products would be the other pasture and grazing land that could have grown crops without additional improvements. Most of the counties had unpublished acreage data, but for those four counties that did, the acres totaled 37,486. Dewey and Lyman Counties had the most acres, followed by Sully and Potter Counties. Table 6 below shows the breakdown of unharvested acres by county.

Figure 5: Acreage of Cropland by Commodity Grown

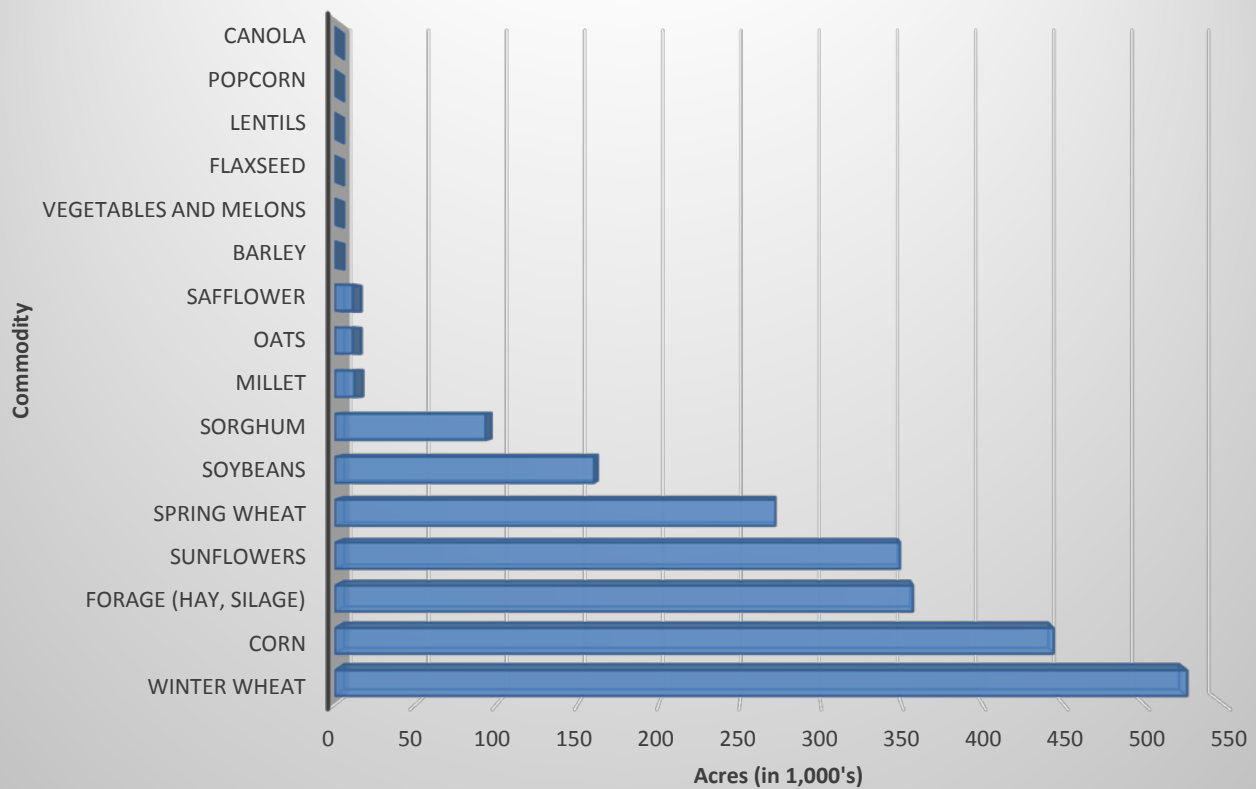


Table 5: Number of Farms and Acres Harvested of Vegetables and Melons by County

County	# of Farms	Acres Harvested for Processing	Acres Harvested for fresh market
Hughes	4	0	82
Lyman	4	0	9
Buffalo	0	0	0
Dewey	0	0	0
Haakon	0	0	0
Hyde	0	0	0
Jones	0	0	0
Potter	0	0	0
Stanley	0	0	0
Sully	0	0	0

Table 6: County Cropland Data

County	Total Cropland Acres	Total Harvested Cropland	# of Farms with Cropland	# of Farms with Harvested Cropland	Idle Cropland or used for cover crops but not harvested or grazed in acres	Cropland-summer fallow in acres	Other Pasture and Grazing Land that could be used for crops in acres	Land enrolled in CRP, WRP, or CREP in acres	# of Acres Available for consumer ag products assuming winter wheat was not planted
Buffalo	86,794	79,779	64	54	3,408	*	*	2,767	641
Dewey	214,442	165,496	245	215	12,252	1,974	14,972	7,952	4,300
Haakon	324,595	174,981	230	158	39,859	*	*	20,796	19,063
Hughes	269,476	229,129	248	215	23,565	*	*	13,174	10,391
Hyde	216,327	184,694	175	150	16,194	3,050	*	9,150	7,044
Jones	210,080	177,558	129	108	11,207	*	*	11,157	50
Lyman	456,423	348,828	401	297	74,835	9,596	9,942	61,189	13,646
Potter	357,337	313,974	219	172	15,918	3,149	6,095	10,779	5,139
Stanley	219,367	166,364	130	105	25,285	*	*	21,805	3,480
Sully	501,040	471,267	164	138	15,156	129	6,471	9,347	5,809

* These counties have acres in this category but the data was withheld to prevent publishing identifying characteristics of individual farms.

3.2 Production and Sales

In 2012, farms in the foodshed region sold over \$644 million of crops and livestock. Grains, oilseeds, dry beans, and dry peas accounted for 53% of the total sales while livestock, poultry, and their products accounted for 47% of the total sales. Vegetables, melons, potatoes, nursery, greenhouse, floriculture, and sod only accounted for 0.1% of the total sales combined.

Approximately 48 farms in the region sold agricultural products directly to individuals for human consumption. The total value of these products sold was over \$607,000 as three counties did not have published data to prevent distributing identifying characteristics of individual farms. This accounts for only

0.09% of the total sales in this region. Due to the small number of certified organic farms, the amount in sales was withheld to prevent publishing identifying characteristics of individual farms. In addition to sales directly to individuals, some farms marketed products directly to retail outlets or through community supported agriculture groups. Some farms also produced and sold value-added commodities or had an on-farm packing facilities.

Farmer’s markets are another outlet for selling locally produced agricultural products. There are approximately 60 markets across the state of South Dakota. The South Dakota Department of Agriculture’s Ag Development Office offers small “Grower Grants” to up to 20 farmer’s markets across the state. They are able to collect limited data for these farmer’s markets via the reports the markets are required to submit as a condition of the grant. The Ag Development Office had received information from 3 random markets in (or very close to) the foodshed area including Pierre, Murdo and Chamberlain for the 2015 season.

Total sales reported for those 3 markets was approximately \$11,855 for the period of June through September. Additional sales may have been made during the fall especially as this was a rather gentle and mild autumn.

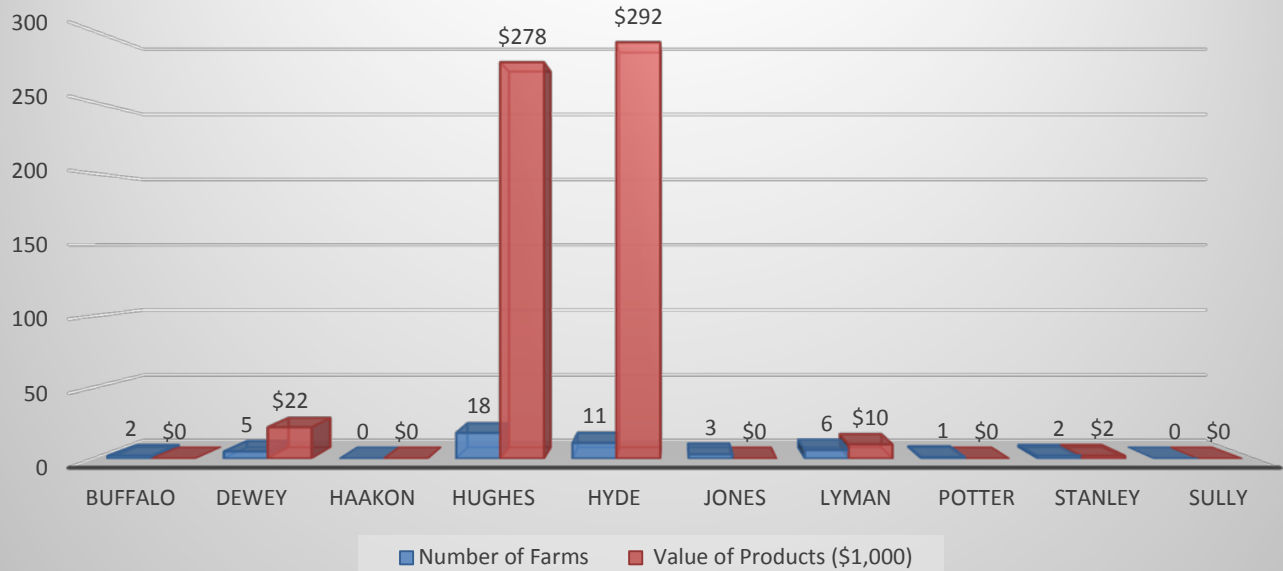
For all the markets across the state with a “Grower Grant”, typical monthly sales averaged between \$1,558 and \$2,881 per month per market. Those numbers are only a small sampling of the nearly 60 markets across the state. They do not include the very large ones in Sioux Falls or Rapid City and do not include the very small ones.

Table 7: Market Values of Agricultural Commodities and Number of Farms by County

County	Vegetables, melons, potatoes		Fruits, tree nuts, and berries		Nursery, greenhouse, floriculture, and sod		Livestock, poultry, and their products		Grains, oilseeds, dry beans, dry peas	
	\$1,000	Farms	\$1,000	Farms	\$1,000	Farms	\$1,000	Farms	\$1,000	Farms
Buffalo	0	0	0	0	0	0	\$22,678	46	\$20,523	44
Dewey	0	0	0	0	0	0	\$40,026	270	\$23,047	71
Haakon	0	0	0	0	0	0	\$43,989	209	\$30,025	115
Hughes	\$330	4	0	0	\$375	4	\$20,178	182	\$82,893	128
Hyde	0	0	0	0	0	0	\$31,254	133	\$58,832	114
Jones	0	0	0	0	0	0	\$25,130	102	\$35,830	83
Lyman	*	4	0	0	0	0	\$41,727	178	\$89,177	209
Potter	0	0	*	1	*	1	\$16,483	83	*	145
Stanley	0	0	0	0	0	0	\$23,215	119	*	66
Sully	0	0	0	0	*	1	\$39,085	63	*	122
TOTAL	\$330	8	*	1	\$375	6	\$303,765	1,185	\$340,327	1,097

* The data was withheld to prevent publishing identifying characteristics of individual farms.

Figure 6: Number of Farms and Market Value of Agricultural Products Sold Directly to Consumers*



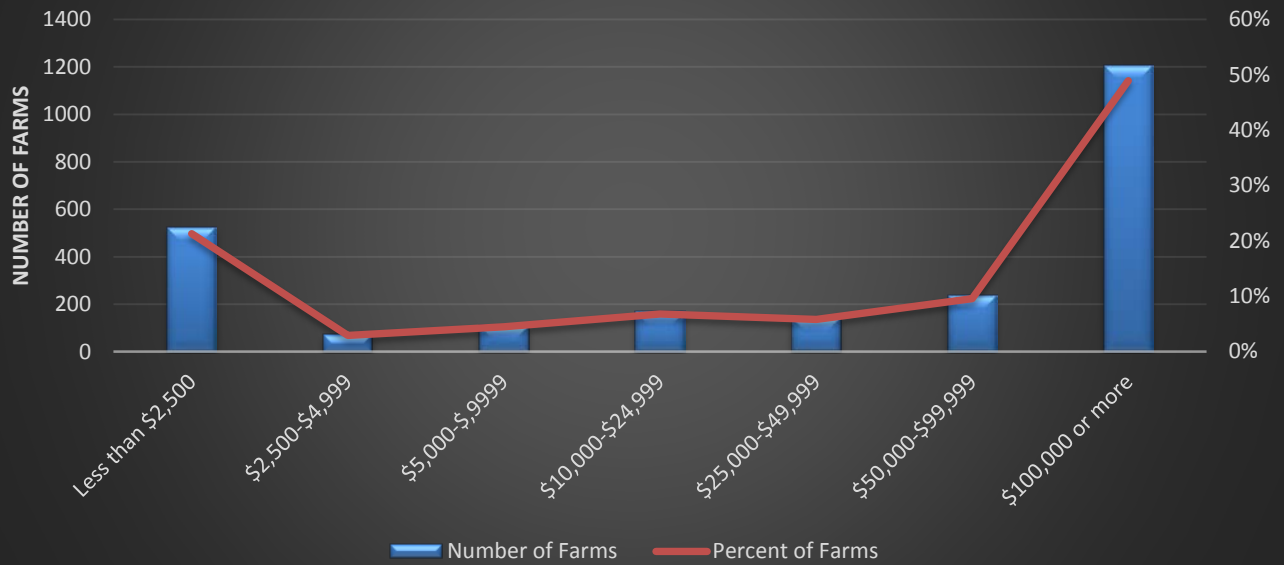
* The data in Buffalo, Jones, and Potter Counties was withheld to prevent publishing identifying characteristics of individual farms.

Table 8: Number of Farms by County with Selected Practices

County	Marketed products directly to retail outlets	Produced and sold value-added commodities	Marketed products through community supported agriculture (CSA)	On-Farm packing facility
Buffalo	0	0	0	0
Dewey	0	15	3	0
Haakon	0	14	0	0
Hughes	3	17	0	0
Hyde	0	9	0	0
Jones	1	1	0	0
Lyman	4	5	1	1
Potter	0	4	0	0
Stanley	0	4	0	0
Sully	1	4	0	0

In 2012, 49% of farms had sales totaling \$100,000 or more and 21% of farms had sales totaling \$2,500 or less. Approximately 30% of farms had sales between \$2,500 and \$100,000.

Figure 7: Number and Percent of Farms by Total Sales



4.0 Food Consumption

According to the Bureau of Labor Statistics (BLS) 2014 Consumer Expenditure Survey, the average household in the Midwest region spent \$6,749 on food, including \$4,121 on food at home. Across the Greater Oahe foodshed, this amounts to an estimated \$104.9 million total spending on food and \$64 million spent on food eaten at home. These numbers were calculated by multiplying the total number of households (See Table 9 below) with the BLS estimate for the amount the average household spends on food.

Table 9: Number of Households and Persons per Household by County in Foodshed

County	Households	Persons per Household
Buffalo	543	3.7
Dewey	1,676	3.25
Haakon	877	2.33
Hughes	7,140	2.29
Hyde	541	2.63
Jones	437	1.84
Lyman	1,446	2.64
Potter	1,048	2.13
Stanley	1,223	2.44
Sully	611	2.37
TOTAL HOUSEHOLDS	15,542	

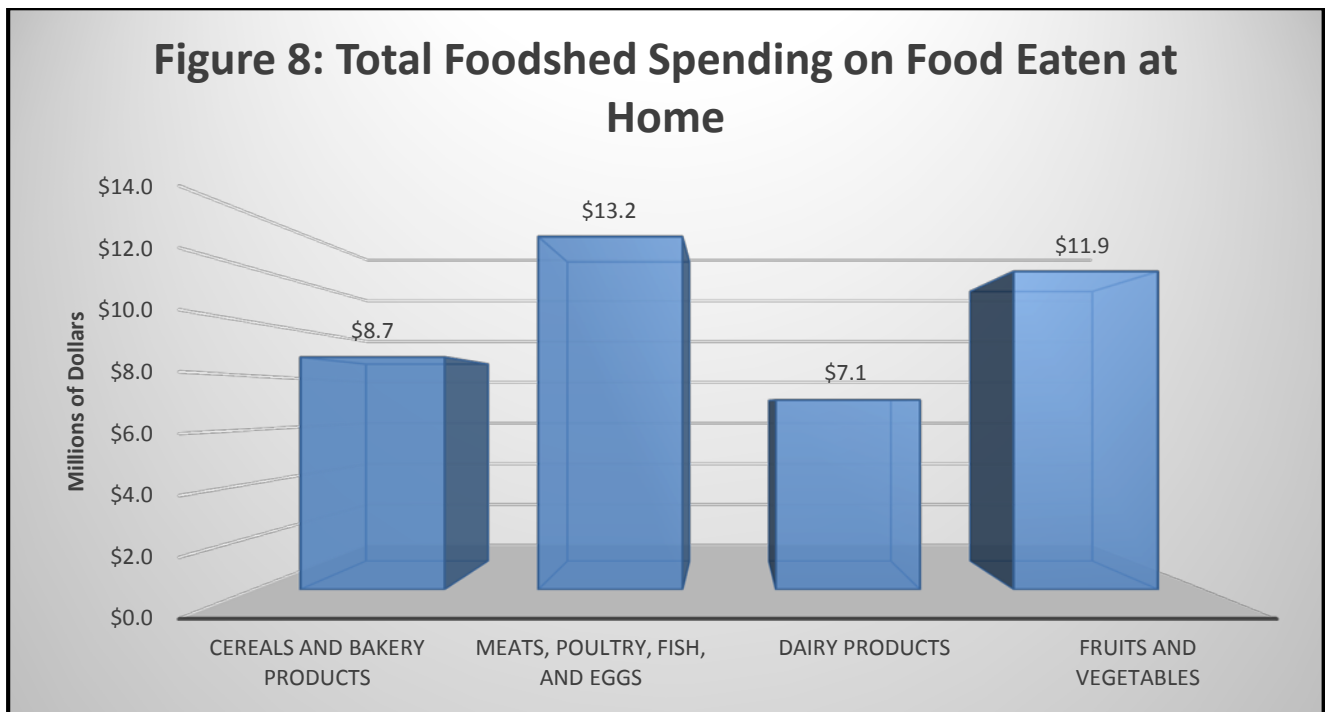
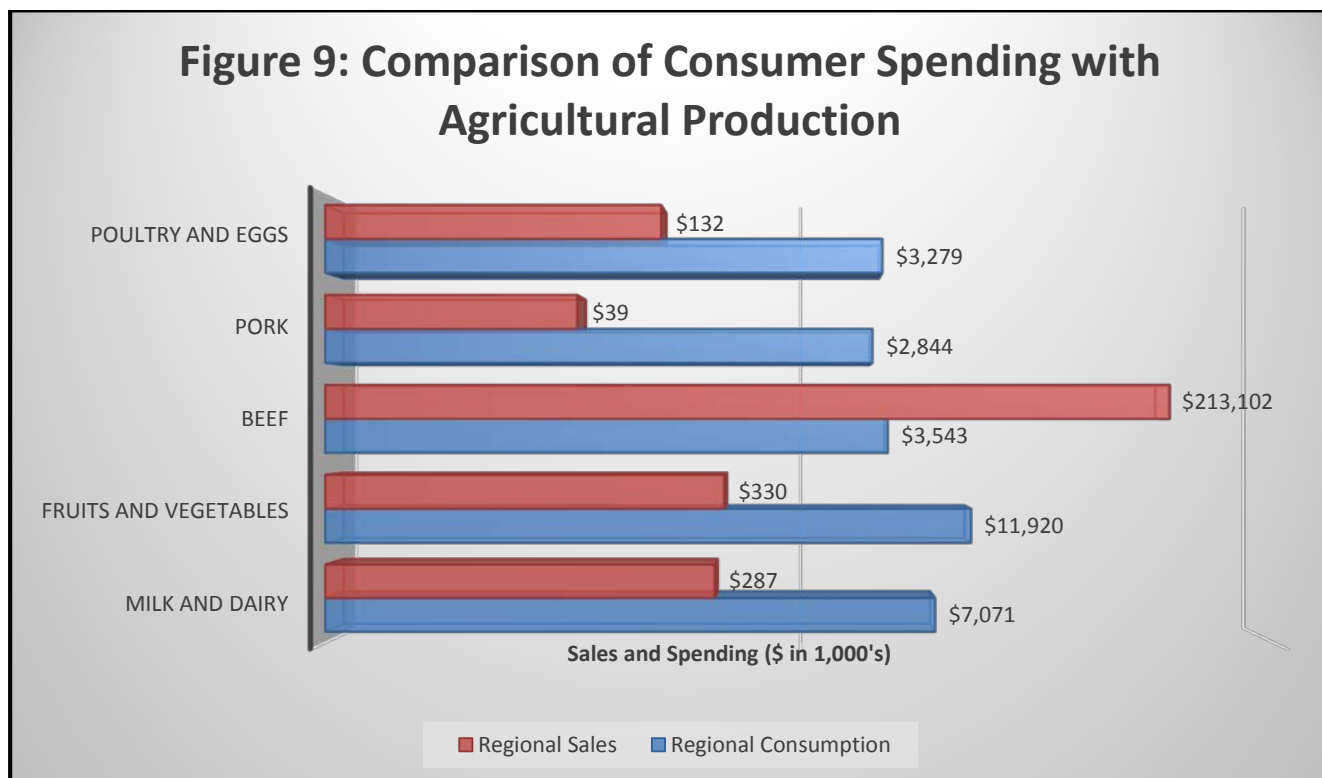


Figure 8 above was created by multiplying the average amount spent per household on those food categories in the Midwest region by the total number of households in the Greater Oahe foodshed. Figure 9 compares the amount of agricultural products produced in the region (based on sales) with the amount consumers in the region spend on purchasing these items. Consumption in the foodshed exceeds current production in the region for all products except beef.

The vast majority of food purchased by consumers is produced outside of the foodshed. Only \$607,000 of food products were sold by farmers directly to consumers in 2012. This amounts to less than one percent of the total spent on food eaten at home in the foodshed. It amounts to less than one tenth of a percent of the total farm sales in this region. A conservative (high) estimate of the percentage of food purchased that is actually produced in the foodshed is 2 percent.



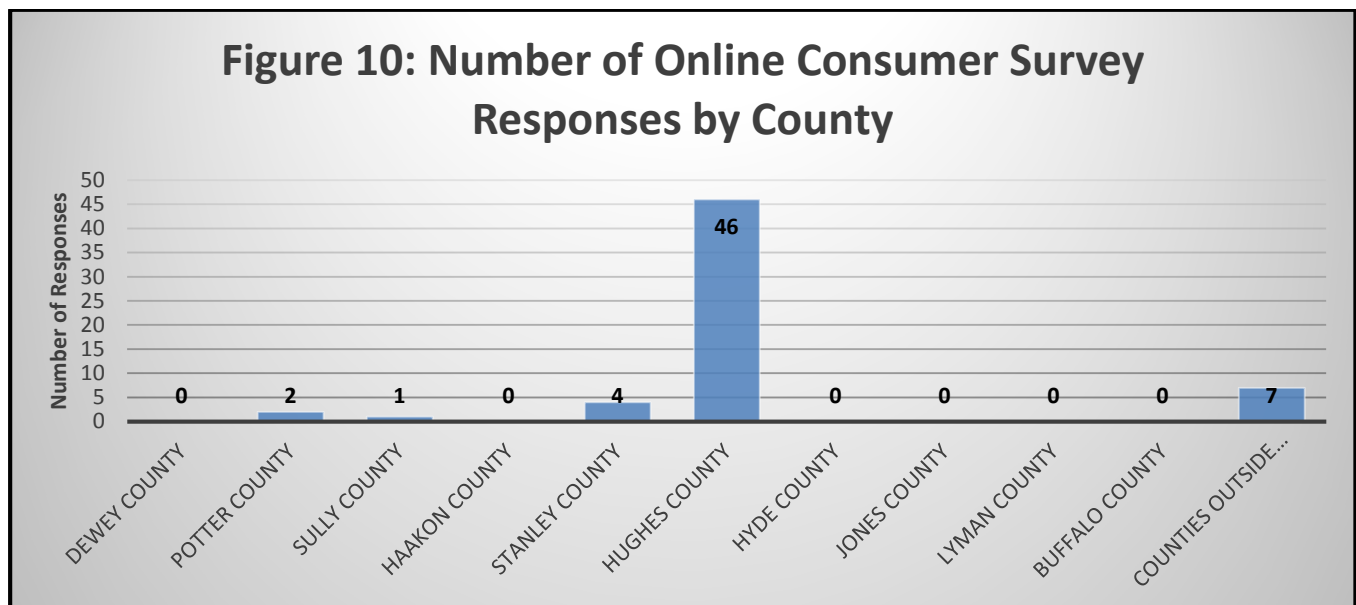
5.0 Consumer Survey Results

The Greater Oahe Action League (GOAL) and the chapter's Local Food Committee decided that getting local consumer's input is an important part of a foodshed study. To accomplish this, a consumer survey was created in order to help us understand where people are getting their food from, why they get it there, where they would prefer to get their food, and the values they use when buying food. Additionally, some general demographic data was collected such as age, county they live in, relationship status, education, race, and number of children. The idea is to use the results from the survey to determine the lay of the land for local food production in the foodshed. In turn, it will help GOAL work with producers, consumers, retailers, local governments, and local organizations to find more and better ways to support the local economy through greater access to local food for consumers, and greater access to local markets for producers. The survey was disseminated through social media sites, the GOAL website, GOAL booths at community events, a random mailing, and by conducting in-person interviews with family members, neighbors, friends, or co-workers.

The dataset for our Online Consumer Survey includes 61 responses from surveyors across the entire state of South Dakota. The majority of the data (77%) comes from consumers in the Hughes County area, more specifically the Pierre area. At 7%, Stanley County comes in at a distant second with its consumers residing around the Fort Pierre area. Potter County and Sully County had a combined 5% of the responses.

The remaining counties in the defined foodshed area had zero responses - Dewey, Haakon, Hyde, Jones, Layman and Buffalo Counties. There were several (12%) responses from the Rapid City and Northwest regions of South Dakota. To demonstrate the number of responses from within the designated foodshed area to those outside the area, they are listed separately in the graph below.

The information provided in this section of the report is based on the 61 responses to the Online Consumer Survey and the 22 in-person interviews conducted by GOAL members.



5.1 Demographic Results

To further understand the consumers in the foodshed, various demographic questions were focused on determining the age, diversity, and household details. A majority of the consumers in this survey (42%) were between 30-39 years old; followed by the 40-49 age bracket with 21%. The consumers over 50 years of age also held a high response rate, whereas consumers under 30 years of age had the least number of responses, making up only 9.5% of the total dataset.

Over 75% of those surveyed state that they are either married or in a civil union. If you include those that are currently single but cohabiting with a significant other, the number jumps to almost 85% of the dataset. This leaves only 15% that are either living alone or are the only adult in their household.

Almost 60% of the consumers responded having one or more children and the ages were evenly spread from 0 to 18 years old, although a slight majority was seen with children around 9 years old. The graph below shows the allocation of children by age; whereas the pie graph shows the percentage of responses that state having at least one child in their household.

Additionally, approximately 11% responded stating that either a parent or grandparent currently lives in their residence.

Together, the demographic and family data from the survey suggests a majority of the survey responses are households consisting of middle-aged persons providing food for themselves, a spouse or significant other, and children.

Nearly 87% of the respondents identified their race as Caucasian, while approximately 13% of the respondents identified their race as either Black or African-American, American Indian or Alaska Native, or from multiple races.

Nearly all of the respondents have completed high school with only 5% that have not. Most of the respondents have gone on to receive a post-high school degree, including 18% of the respondents having earned a graduate degree.

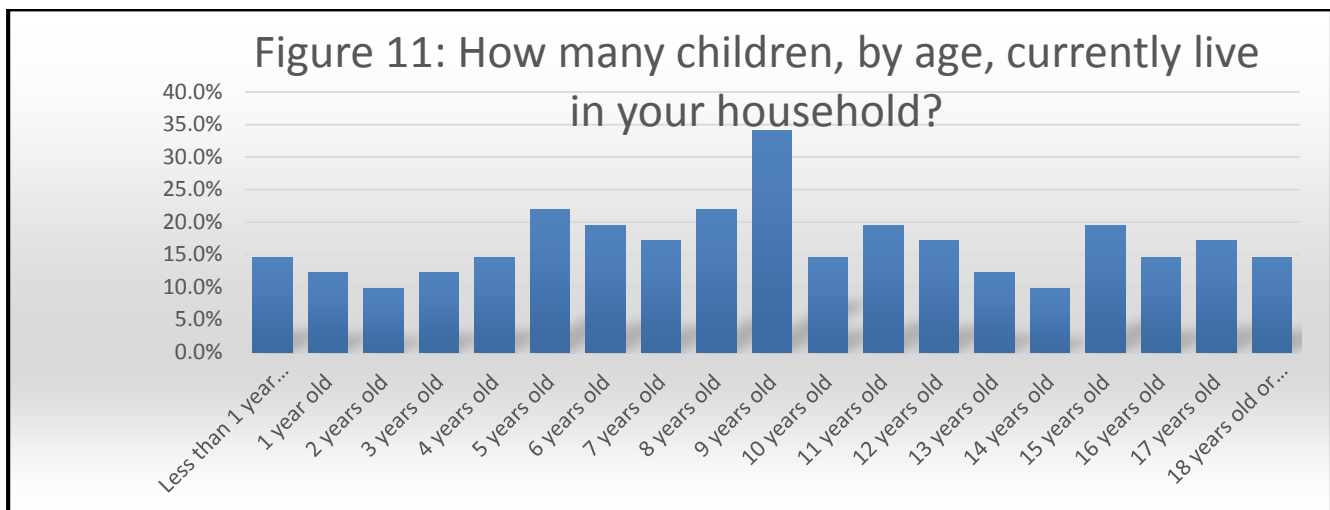


Figure 12: Percentage of Responses With or Without Kids

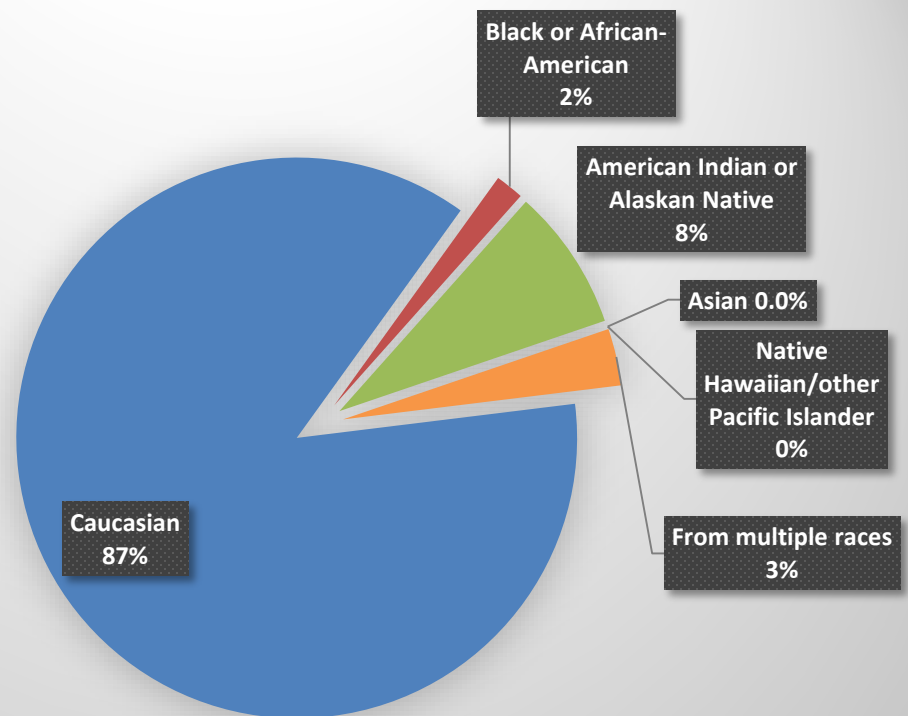
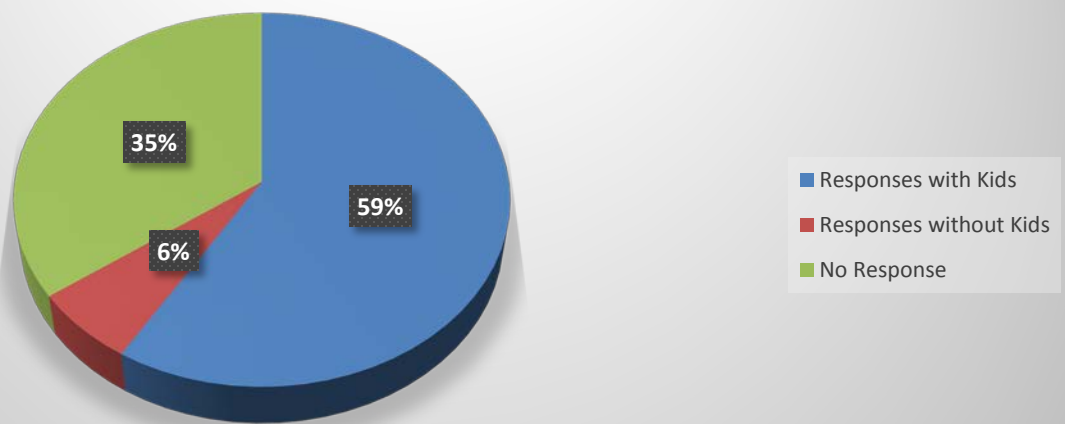
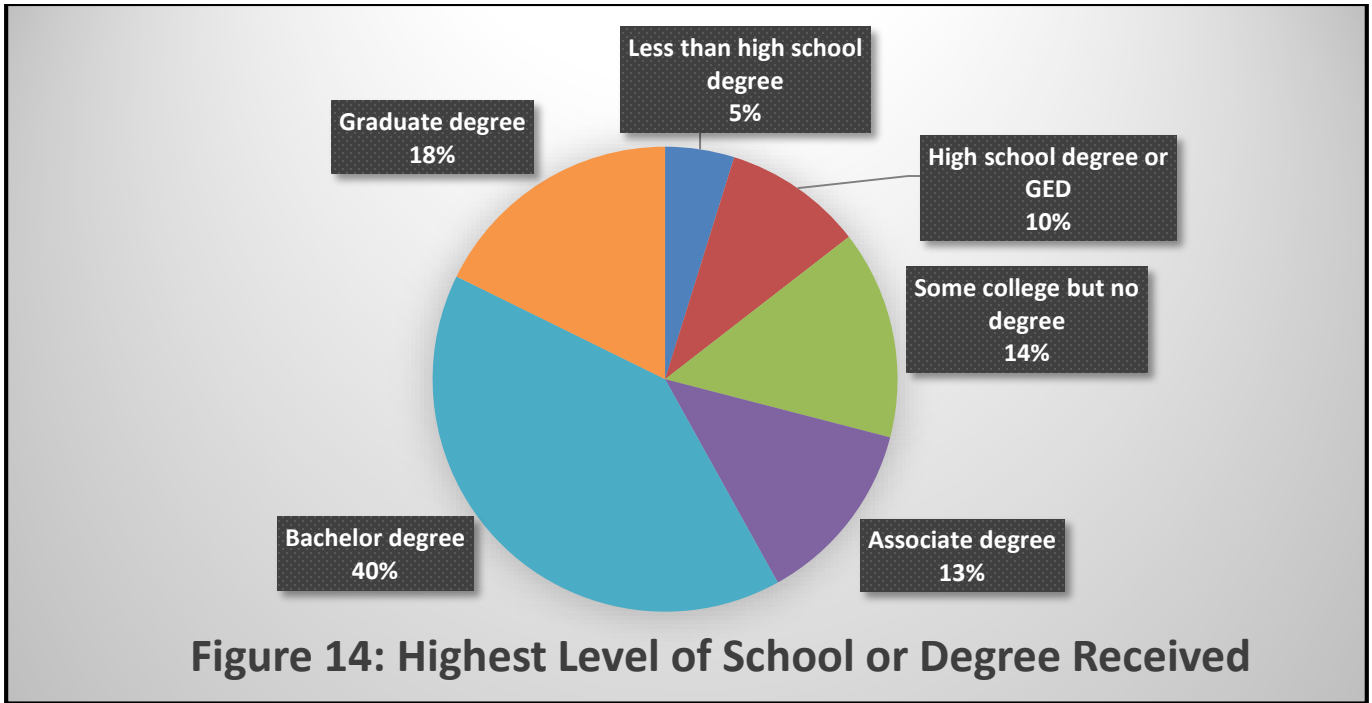


Figure 13: Race Respondents Identified As



5.2 Online Consumer Survey Food Buying Results

Another goal of the consumer surveys was to try to understand how, where, and why people buy the food they eat. The survey also delivered information about how often people buy groceries, how far they travel to do so, and how much they typically spend on groceries. Additionally, the survey provided people a chance to express their preferences on how and where they would like to purchase food and what values they would like to use when buying food to eat.

Most people obtain groceries about 4 times per month. Fifty percent of the respondents obtain groceries between 1 and 4 times per month while 45% of the respondents obtain groceries between 5 and 10 times per month. A few people seem to go nearly every day or every other day to obtain groceries.

The distance people travel to obtain groceries corresponds well to where most of the respondents live as seen in Figure 10 above. Almost 75% of the respondents travel 10 miles or less to obtain groceries. Hughes County represented 77% of the survey respondents. About 12% of the respondents travel 20 miles or more.

The average amount of money spent on groceries corresponds well to the demographic data above that suggests most respondents have at least 2 people in their household. Approximately 62% of the respondents spend over \$200 per month on groceries. About 12% spend between \$0 and \$100 and 26% spend between \$100 and \$200 per month.

Figure 15: Number of Times Groceries are Obtained per Month

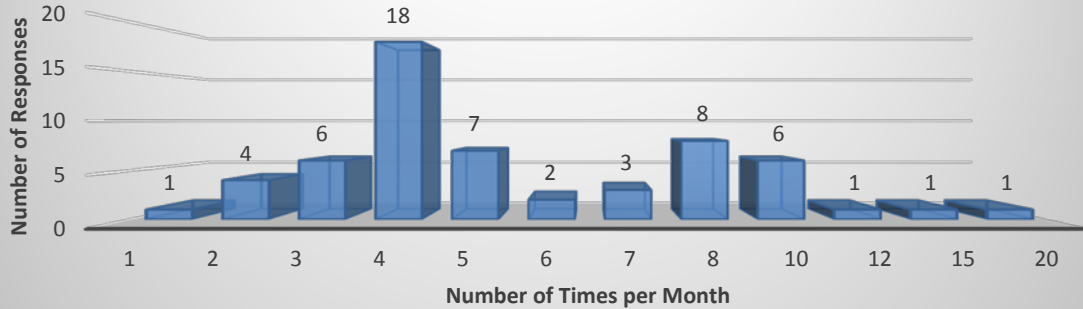


Figure 16: Distance Respondents Travel to Obtain Groceries

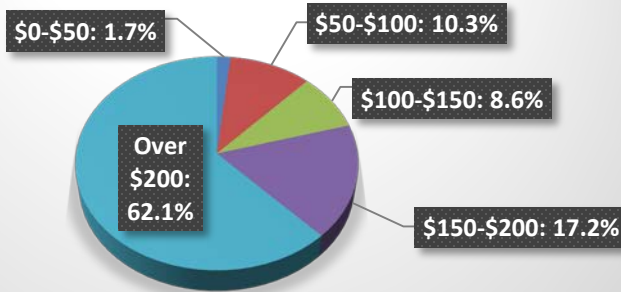
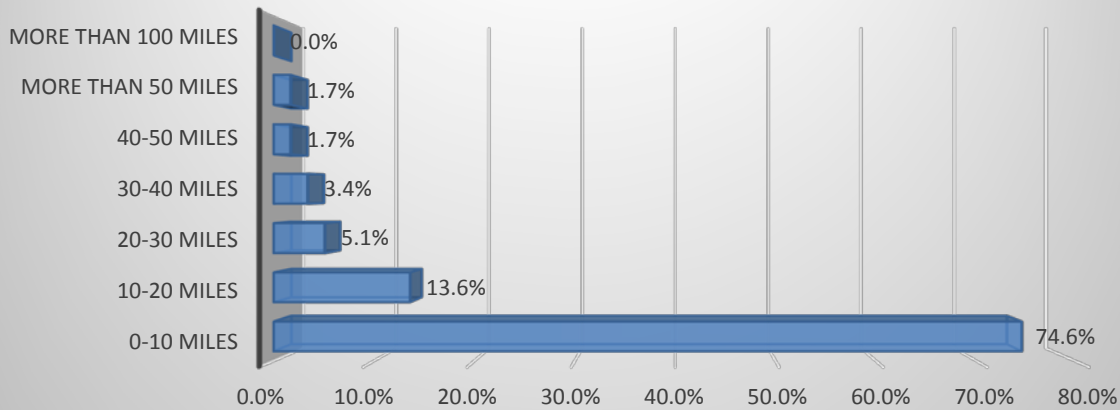
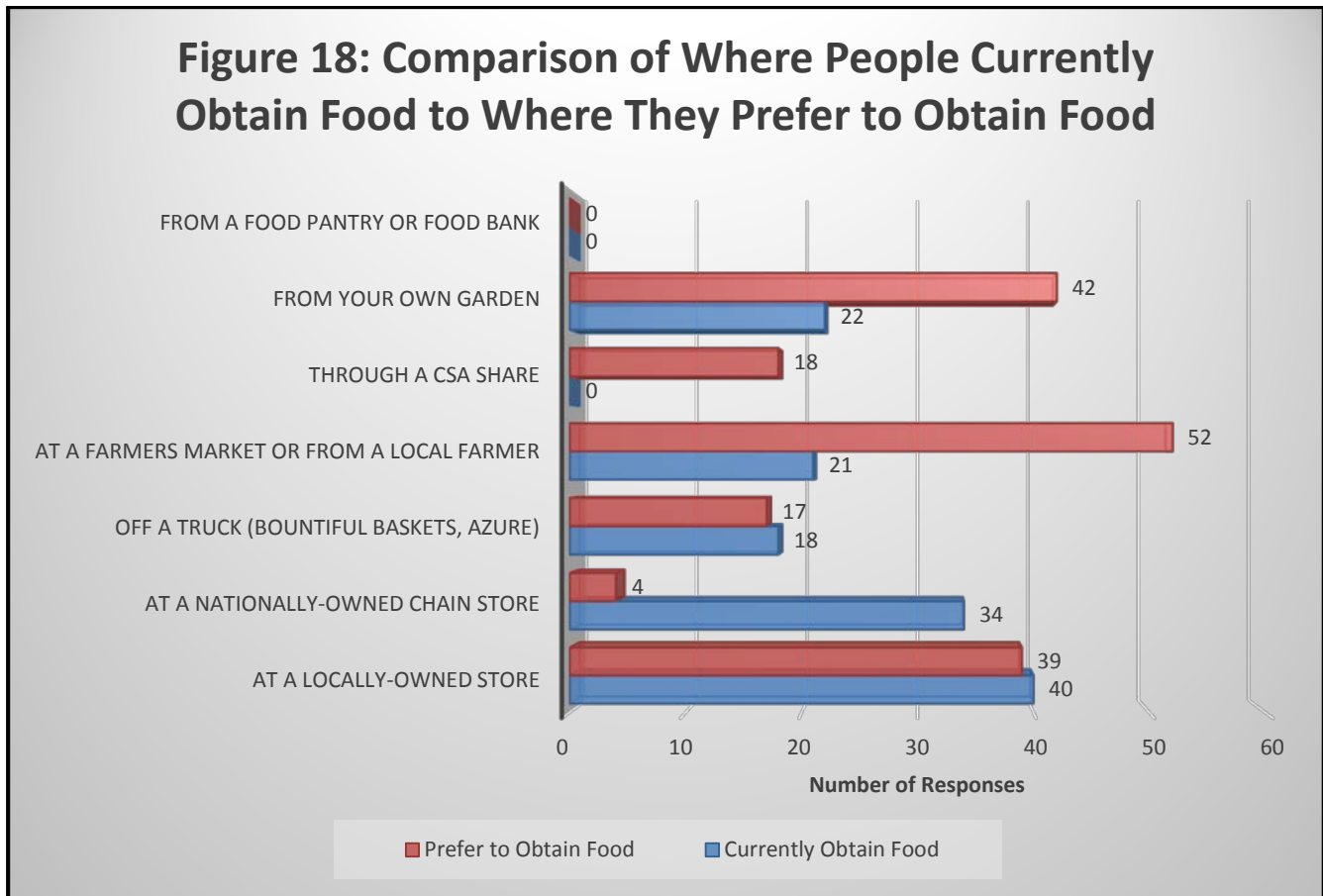


Figure 17: Amount Spent on Groceries per Month (\$)

Most of the respondents obtain the majority of their food from either a locally-owned store or a nationally-owned chain store. However, a significant number of people obtain food at farmer’s markets, from a local farmer, from their own garden, or off a truck such as Bountiful Baskets or Azure.

These results are nearly the opposite of how people would prefer to obtain the majority of their food. In this case, nearly all respondents indicated they would prefer to get a majority of their food from farmer’s markets or a local farmer. Locally-owned stores and their own garden were the next most preferred. Community Supported Agriculture (CSA) shares were not represented where people currently obtain their food, but a significant number of people would prefer to have a CSA share. Only a few people would prefer to obtain their groceries from a nationally-owned chain store.

Figure 18: Comparison of Where People Currently Obtain Food to Where They Prefer to Obtain Food



Nationally, consumers are beginning to care more about where their food comes from, how it is grown, and how it is raised. This survey wanted to discover what local consumers want to know about the food they consume. Overwhelmingly, people want to know if it is locally produced. Most people want to purchase locally grown food, but yet most people buy less than 25% of their food from products that are grown or produced locally. A majority of people want to know if their food is pesticide-free, preservative-free, where it was grown or raised, and it’s genetically modified organism (GMO) status.

Figure 19: What Respondents Want to Know About Their Food

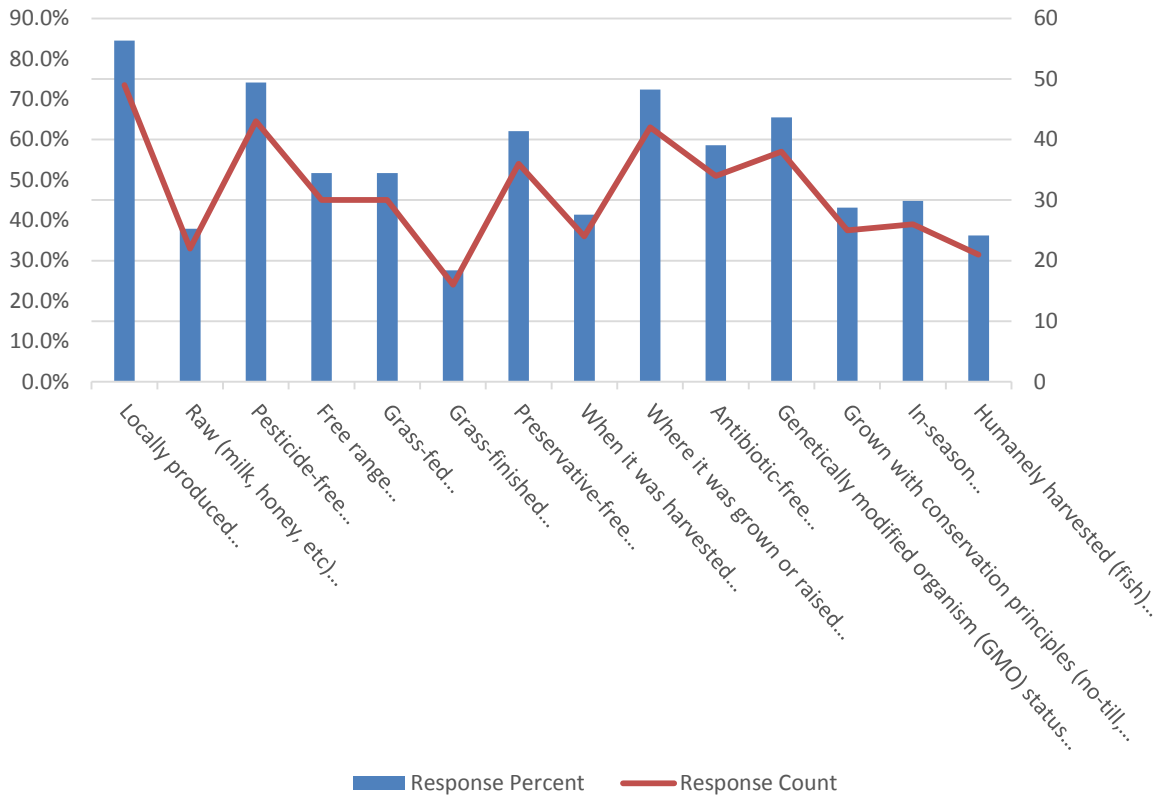
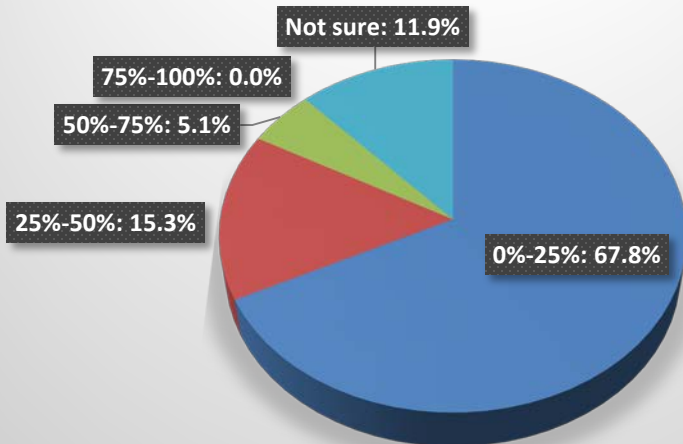


Figure 20: Percent of Monthly Purchases that are Locally Produced

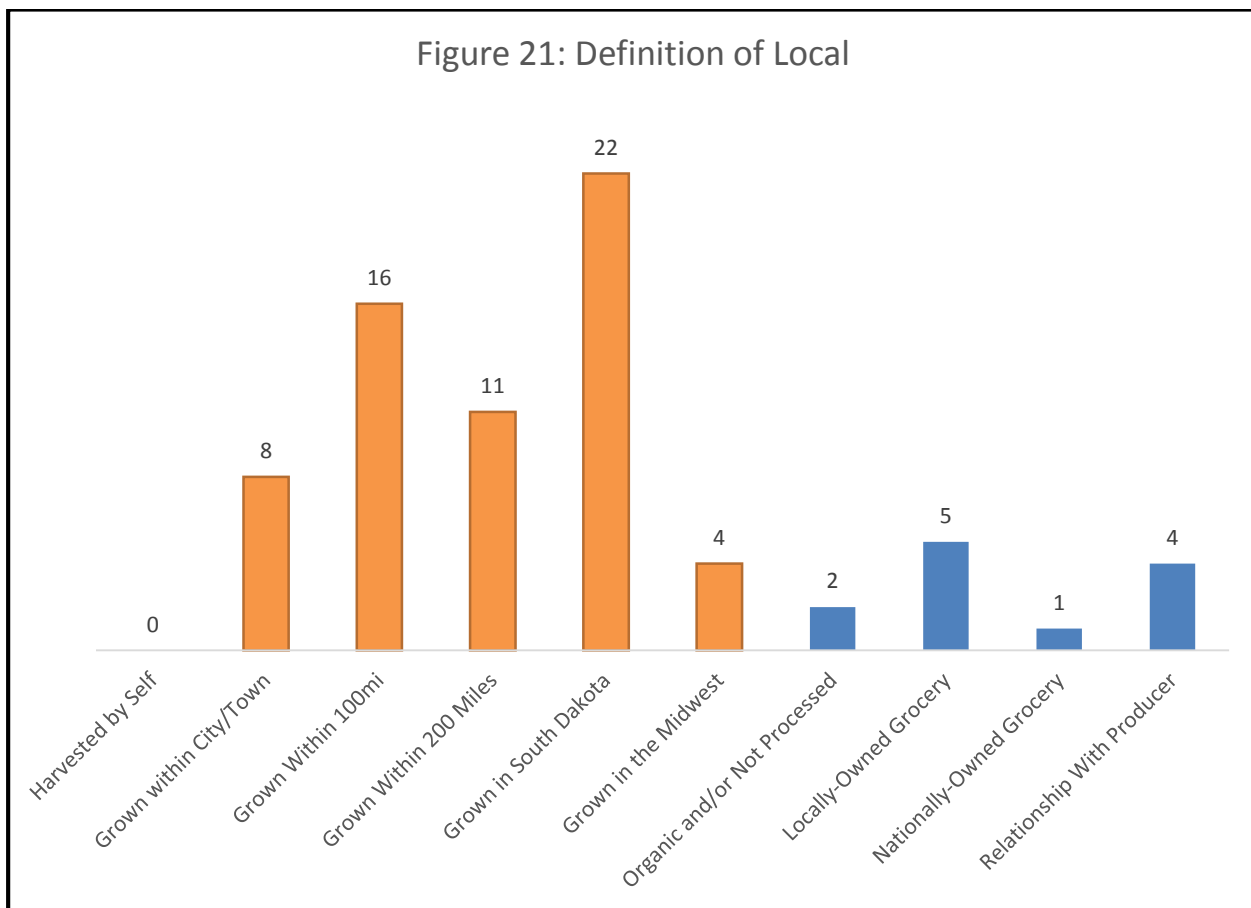


The Foodshed Study also approached consumers by asking a series of open-ended questions in both the online survey as well as personal interviews. The focus of this was to provide more in-depth analysis and detail to previous questions that focused on data. These questions not only helped define the focus for the study, but also provided an outlet to demonstrate exactly how consumers currently shop for groceries compared to the experience and qualities they desire.

As these were open-ended questions, some responders had multiple answers. The graphs and data provided in the following analysis will do their best to present this data in a way that demonstrates this.

The first question posed to consumers was their definition of “Local”. The responses varied from a geographical definition (see data in Green in the chart, below) to qualities of the product or producer/seller themselves (data in Blue, below). Of the 61 responses that provided a geographical definition, 22 (36%) defined “Local” as products from the state of South Dakota; however responses supporting “Local” as anything within 200 miles makes up approximately 58% of the responses.

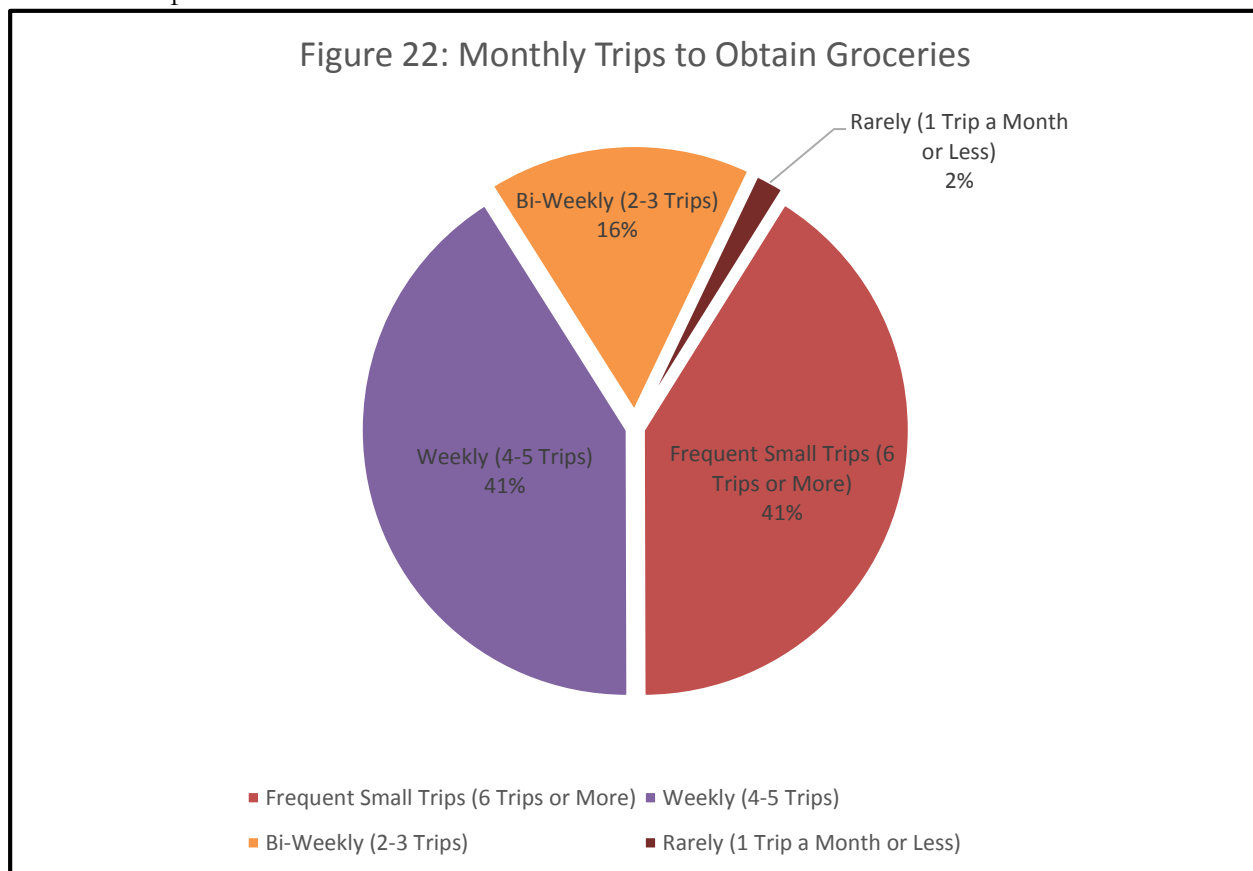
Of those that stated a food value in regards to the definition of “local,” many felt comfortable with simply supporting the locally-owned grocery store. Almost as prominent was the desire to have a relationship with the producer – or at least have knowledge of their practices and values.



To fully understand the current grocery-buying experience of the consumers, the following series of questions were asked:

- How many times, in an average month, do you obtain groceries?
- Are you able to obtain groceries as often as you would like? If no, what prevents you from obtaining groceries as often as you would like?
- Describe your typical experience obtaining groceries.

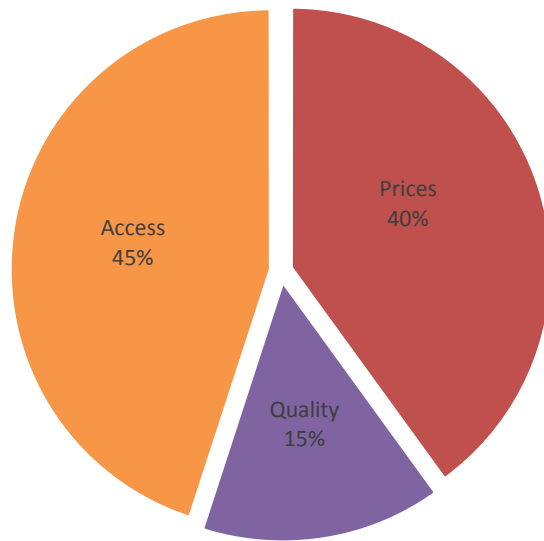
The majority of consumers that responded to the online survey claim to buy their groceries at least once a week. The data shows that 41% of the consumers are buying groceries 6 or more times a month; with another 41% buying groceries weekly. About 16% are buying groceries about every-other week; and just 2% at one trip a month or less.



When asked if the consumer believed they were able to obtain groceries as often as they would like, 71% said yes; while the remaining 29% stated that they were not able to.

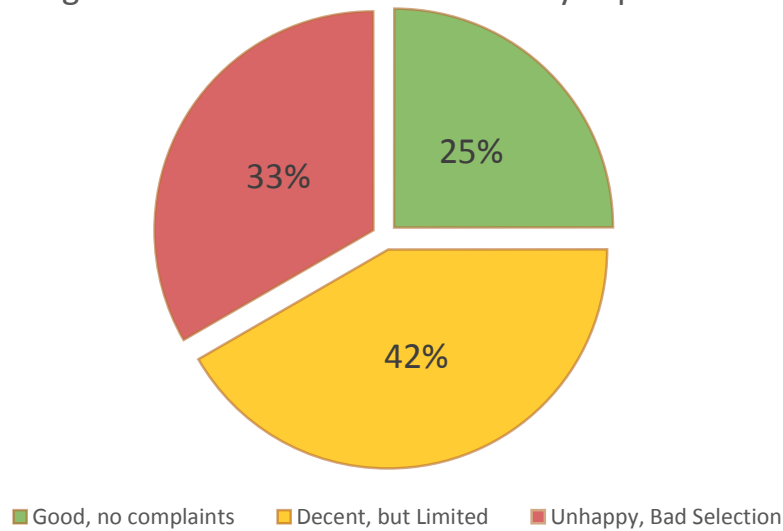
A majority of the consumers explained their obstacles in terms of accessibility, the quality of food that they could purchase, and the expense associated with purchasing the food they would like to be buying. Many discussed the limitations of the short growing season associated with the South Dakota and Midwest area; while others voiced the excessive time needed to either travel to an area that provided the food with values they desire or to plan ahead and order such foods to be shipped in.

Figure 23: Obstacles to Obtaining Groceries as Frequently as Desired



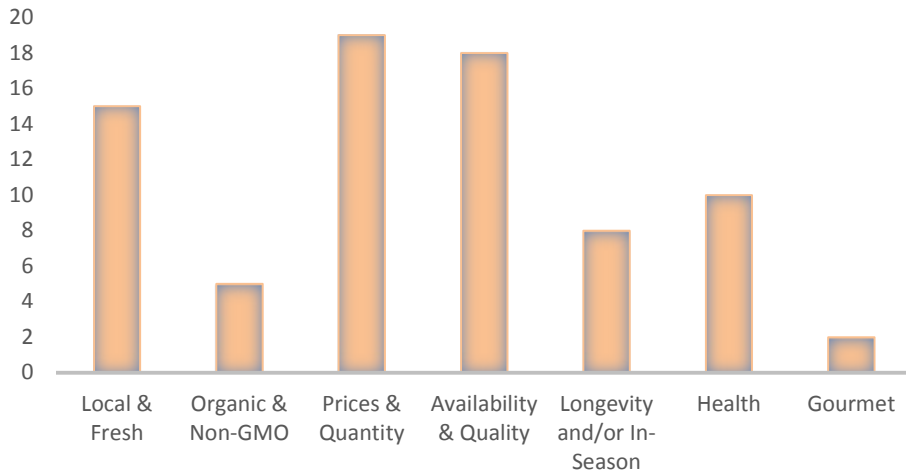
Next, the consumers discussed their typical experience in obtaining groceries. The graph below demonstrates the satisfaction (or dissatisfaction) with their current experiences. While about a quarter responded saying they had no complaints about their current experience, a majority of consumers felt the experience could be greatly improved upon.

Figure 24: Satisfaction with Grocery Experience



While selecting their groceries and where to go to obtain them, consumers stated exactly what they were looking for in their food. A balance between quality and price was a constant factor in most of the responses. Specifically, people tried to navigate towards local & fresh foods that were high-quality and available at the locales in which they shopped.

FIGURE 25: FOCUS DURING GROCERY EXPERIENCE



When asked to describe their most recent grocery shopping experience, many seemed to only need a select few items, and the locally-owned grocer or a national-chain seemed to be the go-to due to convenience and availability. On average, 30 minutes or less was spent to select and pay for the items. The bar graph demonstrates the type of food consumers described purchasing during the trip. Many went to buy fruits and vegetables; followed by dairy, meat & fish, dry or frozen goods, and bread or baked goods, respectively. Few consumers purchased sweets or snack foods, and several that visited the local or national grocers bought other items like household goods.

Figure 26: Where Did You Most Recently Purchase Groceries?

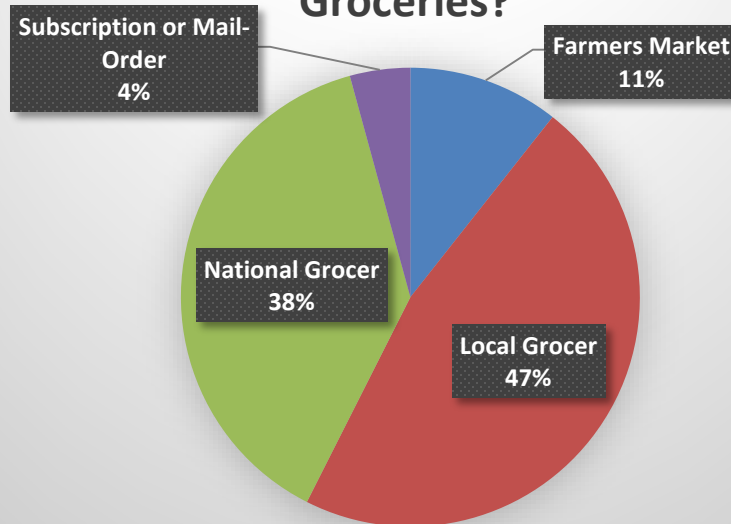
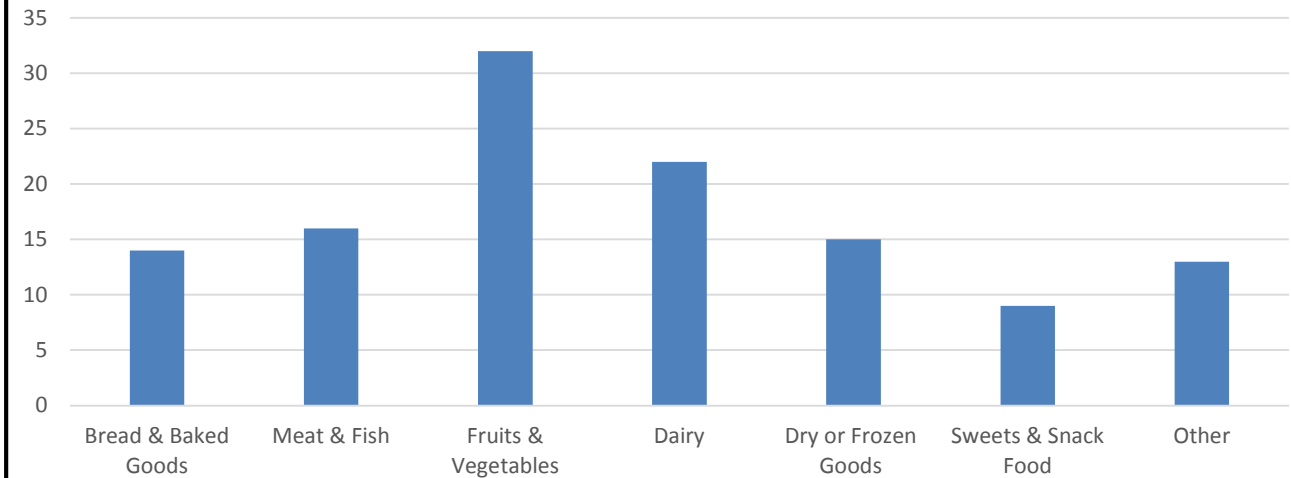


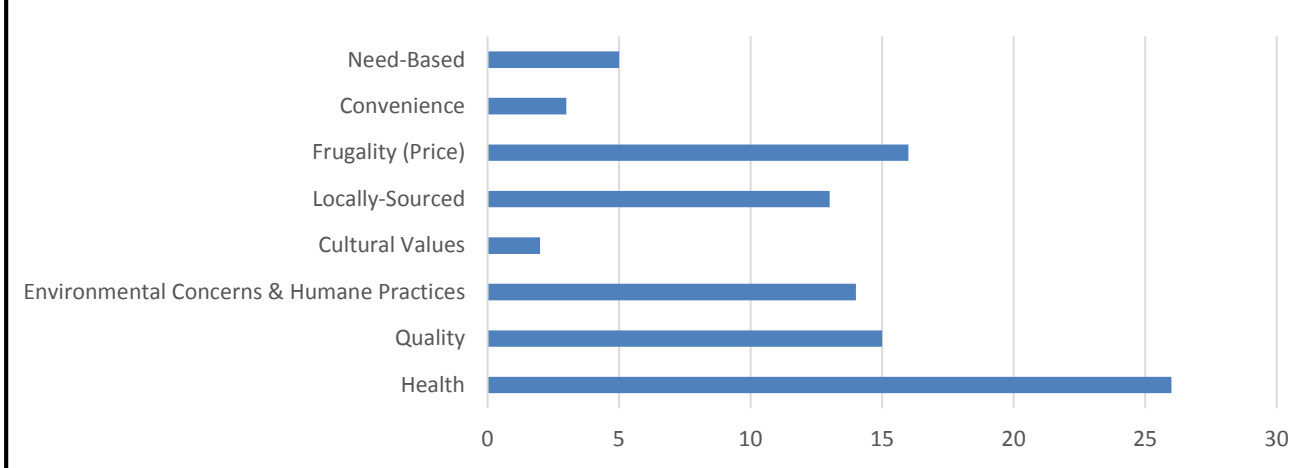
Figure 27: What Products Did You Most Recently Purchase?



The dissatisfied consumers stated the lack of availability of the foods with values in which they find important; a low-quality of food that is offered; undesirable atmosphere; or general resentment for the national-chain store.

In regards to values, consumers had a variety of responses from health and quality; to frugality and locality; to environmentally-friendly and humane practices. A majority of the responses listed several of these values, with the most frequent response being a mixture of health and frugality. Most simply stated they wanted to be able to choose from a variety of high-quality foods and to have access to both affordable food and locally-grown or environmentally-conscious items.

Figure 28: Food Values



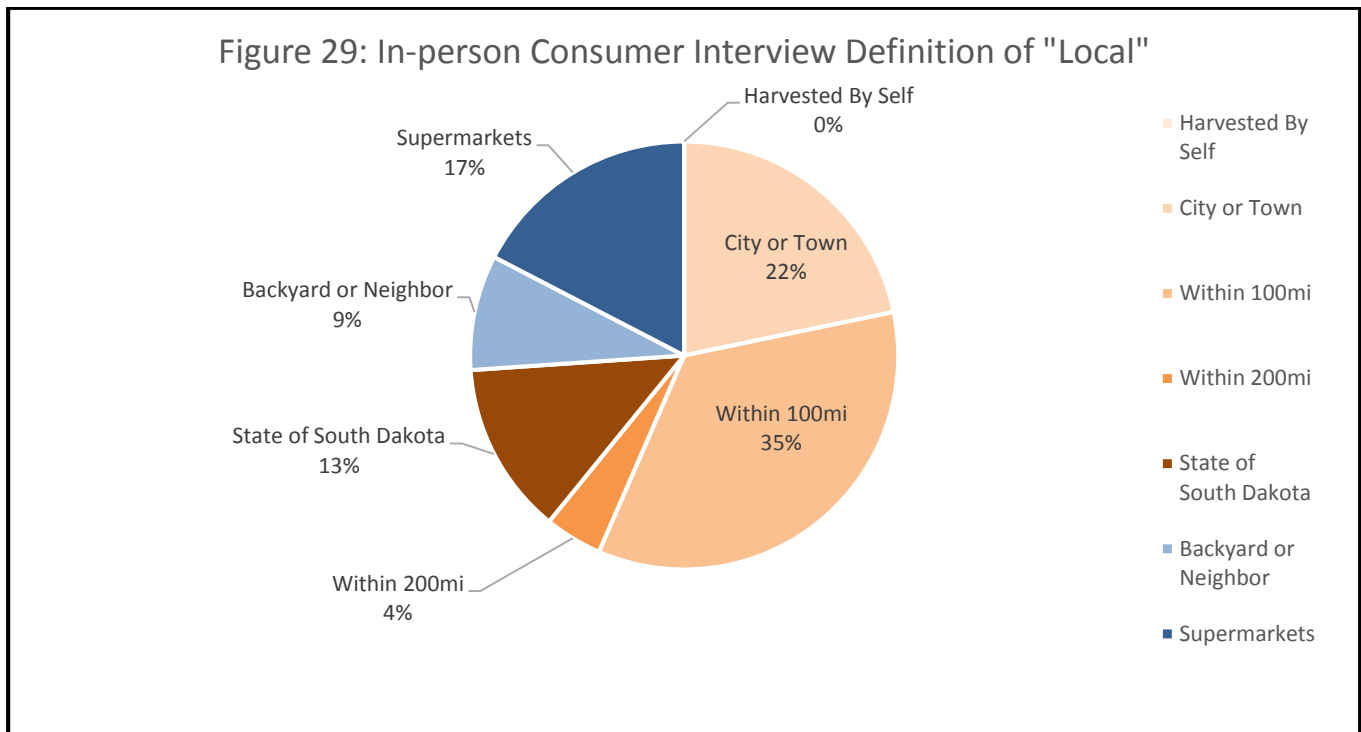
Overall, consumers make do with the resources available to them. There is a general desire to be able to select certain items like meat and produce to be sourced locally or grown organically, while not breaking the bank.

5.3 In-person Consumer Survey Interview Results

In addition to the online surveys, there were twenty-two (22) in-person interviews with consumers. These questions mirrored many of the questions from the online survey, but the goal of these interviews was to get deeper, more insightful responses from the consumers. The following questions were asked during the in-person interviews:

1. As it relates to food in our region, what would you define as “local”?
2. Where do you currently get your food, and is it different than how you would like to get your food? How so?
3. How much of your current household food consumption is from locally-produced food (as you define it)? Is that different from how much you would like to be consuming locally?
4. What values do you use when determining how and where to purchase food for your household? Do you feel like you have access to food that meets those values?

The first task was to understand these consumers’ definition of “Local”. The responses were then broken down and sorted into the same categories as the on-line surveys. You’ll notice on the graph below that a majority (35%) of responses defined local as within 100 miles of where they live. This is unlike the on-line surveys, in which a majority (36%) defined “Local” as products from the state of South Dakota. These responses also noted a spike in support for local supermarkets as a definition of Local.

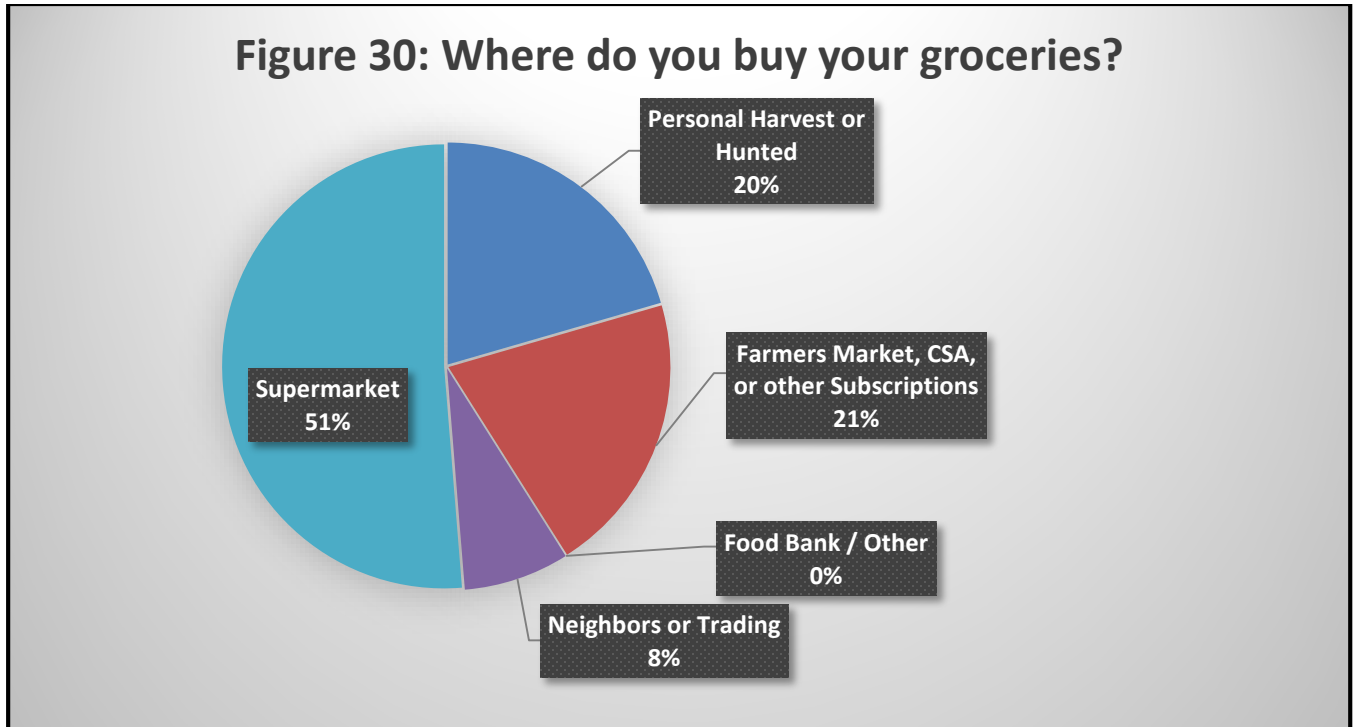


The next discussion item pertained to where the consumers currently obtain most of their food; and if it is different than how they would like to source their food. Almost half of the responses stated that their main

source of groceries come from the supermarket; specifically mentioning stores like Dakotamart (Pierre), Wal-Mart, Kessler's (Aberdeen), or a locally owned and operated grocer.

It should be noted that a strong number of consumers in this part of the survey stated that a majority of their groceries come from their own garden, harvest or that they've hunted, gathered or traded for. One of these consumers stated this as their only source of groceries; while most of the others supplemented their groceries with another source.

Another eight (8) responses discussed various sources of local Farmer's Markets, Community Supported Agriculture (CSA), and subscription services (Bountiful Baskets or online food services).



The third question asked how much of their current household food consumption is from locally-produced food (as they define it); and if that amount differs from how much they would like to.

Of those that responded, nearly sixty-percent (60%) stated they consume less than a quarter of their food from locally-sourced products. Those that stated they are able to consume a majority of their food from local sources discussed being very proactive in growing, hunting, trading and preserving to maintain this amount year-round.

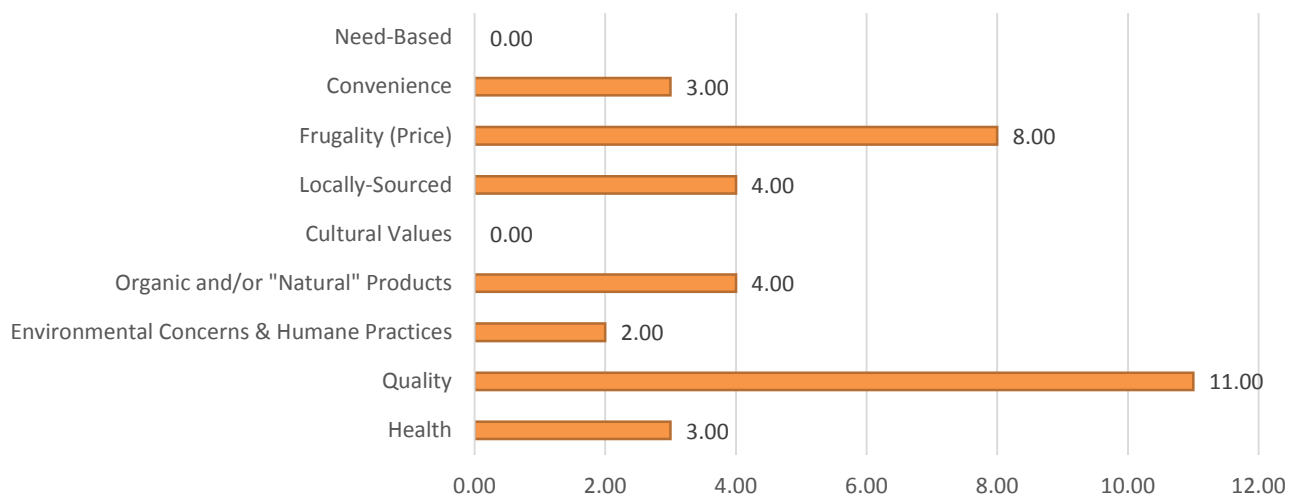
Ultimately, over two-thirds of the consumers explicitly stated that they desire more accessibility to local foods and products. The remainder of the consumers either had no opinion or was already able to source many of their products locally.

The in-person consumer interviews concluded with the consumers' values that they look for when purchasing their food. An overwhelming majority stated Quality as their primary value when looking for food – ranging from nutritional qualities to physical quality of the food itself.

Not too far behind was frugality and price-driven values. A handful of the consumers that stated price as one of their main factors also noted that this often clashed with their desire to provide other values, like organic or locally-sourced.

Several consumers responded with “convenience” as one of their main values and this is of note because they usually were not able to apply other food values due to accessibility, availability, or personal limitations.

Figure 31: In-Person Consumer's Food Values



6.0 Producer Survey Results

In addition to getting local consumer's input, GOAL and the Local Food Committee felt it was equally important to get input from local producers. To accomplish this, a producer survey was created in order to help us understand what they grow, where they grow it, where they sell their products, how they would prefer to sell their products, and what barriers exist for selling their products. Similar to the consumer survey, the results will help GOAL work with producers, consumers, retailers, local governments, and local organizations to find more and better ways to support the local food economy. The survey was disseminated through social media sites, the GOAL website, a random mailing, asking livestock and farm groups, conservation districts, and other groups to send it out to their members, and by conducting in-person interviews with the vendors at the local farmer's markets.

6.1 In-person Farmer's Market Vendor Survey Results

The Local Food Committee called, emailed, or met with eight of the vendors from two Pierre farmer's markets. Following are responses to the survey questions:

1. What do you define as local?

Most of the producers felt the Pierre/Ft. Pierre area out to about 50 miles would be considered local. One felt local could mean the state of South Dakota and two considered central South Dakota as local.

2. Who do you grow for? What do you grow? Where do you sell?

Most of the producers sell for local community people that attend farmer's markets and local mall venues, and may use social media and personal contacts to sell their wares. One sells (apples from home orchard) to grocery stores throughout South Dakota, a couple of participants to restaurants in Pierre, and one sells organic field crops wherever they can find a bulk buyer which could including surrounding states (MN, NE, ND, KS) in addition to South Dakota. One vendor not only sells their products at local farmer's markets but in AZ where they winter.

Many grow vegetables, several offer homemade baked goods/canned goods, one sells meat products, one sells woolen products, and one sells eggs.

3. What got you into farming? Describe your path toward your current farming career. There were fascinating and varied responses in which interesting personal life experiences were shared. Most have a love for agriculture, they want to provide good nutrition, and they have a vision toward helping others experience a more healthy life. Some of the individual responses were:

Began larger jerky production after discovering niche market with buffalo jerky. Moved into this full time after operating small neighborhood grocery/deli for 27 years.

Had a small home garden and now sell surplus at local market. Likewise, another similar producer decided to go GMO/pesticide/herbicide free and increase production to sell at farmer's market and a local restaurant.

Inherited orchard from father who began the business and sells apples in Pierre, Rapid City, Aberdeen, and Faulkton.

Had a concern for nutritious and safe canine treats – tried doggie treat recipe sister gave me and rest is history.

What started as a hobby with 6 sheep has grown to 32 head – we now sell wool products and will potentially sell male lambs.

Love of gardening and homemade dishes and baked goods, and have a passion for more local foods offered to the community, schools and other institutions. Also have concern for the environment and public health.

4. How would you prefer to sell your food/harvest/crops?

Many would appreciate expanding sales -- not only farmer's markets and website, but schools, institutions, retail grocers and dining establishments, direct to consumers. One expressed desire to offer farm stand on home farm and some would benefit from a year-round venue under a roof.

5. What barriers are there to selling your food/harvest/crops?

A variety of challenges were expressed. Some of the challenges include inconsistency of market attendance, being at mercy of the weather, being left with produce that doesn't sell during peak season, and pricing of goods compared to what people want to pay. There are also overhead costs of licensing and labeling, hired help (if one can find), transportation, and liability insurance. Consumer education is needed -- in part to combat long-term conditioning of people that one cannot grow consistent quality dependent on growing conditions and in part that local produce is often more safe/nutritious than food produced in other parts of the world and shipped here.

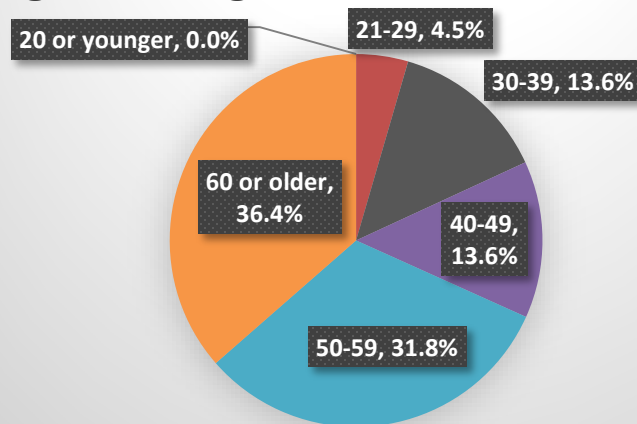
The reality is we have a shorter growing season in this part of the country and to have an incentive to expand (hoop houses to extend growing season for example) consumer market needs to grow. One vendor said "no one's getting rich doing this – it is almost like community service".

6.2 Online Local Producer Survey Results

In order to gain some perspective about the local food market from the producer's side, a series of 14 questions were posed to producers to gather demographic data including place of residence, age, and race. It was also important to understand and gather information about the kind of products they grow, the size of their operation, where they sell their products, their future goals, and the biggest challenges with selling products locally. Data for this section of the report is based on survey responses from 22 producers.

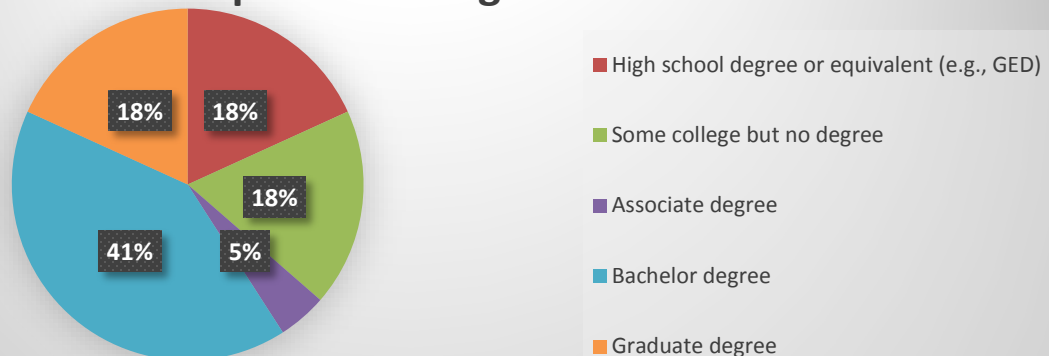
More than half of the 22 local producers that participated in this study are located in the Pierre/Ft. Pierre area, with several others from as far away as Gettysburg, Eagle Butte, Okaton, SD, and places in between. Interestingly, 15 respondents (68%) are 50 years of age or more and only one is under 30 years old. Six respondents are between the ages of 30 and 49.

Figure 32: Age Breakdown of Local Producers



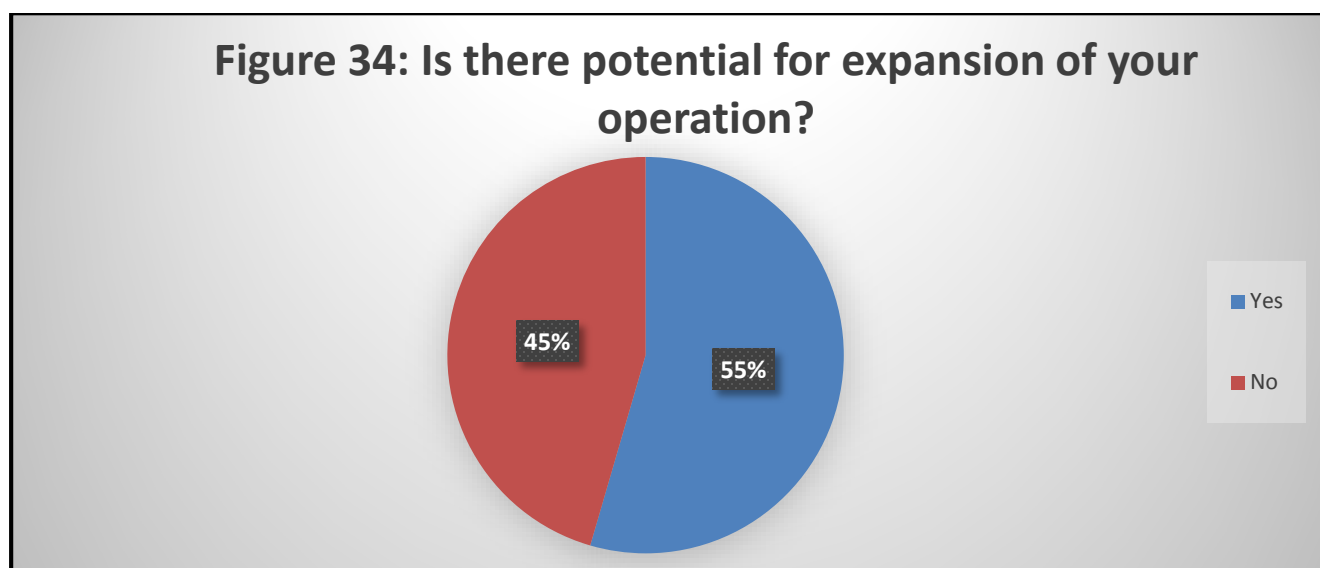
With respect to relationships, 15 of the respondents are married, 5 are divorced, and 2 are single. All of the respondents are Caucasian and had at least a high school education. More than half have college degrees.

Figure 33: Local Producers Highest Level of School Completed or Degree Received



The number of acres producers are using to grow their products varied greatly. Only 15 producers responded to this question with 2 of them utilizing thousands of acres to grow typical field crops. The other 13 respondents utilized areas that ranged from a personal garden or half-acre plot all the way up to 480 acres. The typical field crops grown on the big acre farms include milo, wheat, soybeans, peas, flax, oats, sunflowers, corn, barley, hay, and millet. The smaller farms grow produce such as tomatoes, peppers, melons, squash, pumpkins, sweet corn, asparagus, cucumbers, beets, carrots, edible beans, and safflower. Livestock such as calves, goats, and grass-fed beef were produced on the large and small operations. Other products such as honey and eggs were also mentioned.

Expanding their current production and operation is a goal for some of the producers but not all of them. Six of the producers said yes they will potentially expand their operations and five said they would not. Some said they may consider it in the future but not at this time. For those that do not want to expand, their reasoning was workers are hard to find and they are over retirement age.



The larger farms and producers sell their products to local elevators or at local sale barns. The smaller farms and producers sell to friends or use social media to sell their products. Some of the producers may sell their products to other states including Minnesota, Montana, Nebraska, and North Dakota. One honey producer sells their products in the local tourist gift shop.

The future goals of 13 respondents include expanding their operation by adding a greenhouse, buying more livestock or poultry. Some want to increase efficiency by installing drip irrigation systems or a packing shed or packaging equipment. Another wants to sustainably produce enough food for their family and sell surplus locally.

The challenges to selling their products locally noted by 12 local producers include regulations, competition, amount of time required, and the lack of hired help. Also noted was the amount of money that could be charged/made for their commodity and the need for more selling venues. The need for consumer education (about value of locally grown food) is also a noteworthy challenge.

7.0 Greater Oahe Foodshed Study Recommendations

Where do we go from here?

This report is not meant as an end to a conversation, but rather a beginning.

GOAL started out wanting to learn more about the state of the local foodshed to identify how to make it stronger. As an organization, GOAL strives for community input and community action. This report will be used to encourage discussion, conversation, and action as the central Oahe region moves into planting season and farmers markets.

This is a living, breathing process. The goal is to get this report out all over the central Oahe region, have conversations, discuss what can be done as a community, and then bring everyone back together at the beginning of May to make some decisions and put together an action plan to support local food in the 2016 season.

Timeline:

Friday, February 19: Report released

Foodshed Teach-In: Wednesday, February 24 at the Rawlins Library, 1000 E Church St, Pierre, SD 57501

-Go in-depth on the findings of the report and learn how to use the report in your community to spark conversation and talk about how to connect local food producers with local food consumers.

February 24-April 15: Community discussions

-GOAL members and those trained at the Foodshed Teach-In will facilitate conversations with individuals, small groups, local governments, and interested groups to get feedback on the report and solicit input into what action should be taken.

Early May, date TBD: GOAL Chapter Meeting

-Here we will gather all the feedback, make some decisions, and put together our action plan for 2016.



8.0 Bibliography

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3. U.S. Bureau of Labor Statistics, Consumer Expenditure Survey, Metropolitan Area Tables, September, 2015.
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<http://www.bls.gov/cex/2014/region/region.pdf>



9.0 Glossary of Terms

Crop year or season covered. Acres and quantity harvested are for the calendar year 2012 except for citrus crops and sugarcane for sugar; limes in region three States; avocados in Florida and California; olives in California and Arizona; and pineapples and coffee in Hawaii.

Cropland idle or used for cover crops or soil improvement, but not harvested and not pastured or grazed. Cropland idle includes any other acreage which could have been used for crops without any additional improvement and which was not reported as cropland harvested, cropland on which all crops failed, cropland in summer fallow, or other pasture or grazing land that could have been used for crops without additional improvements. This category includes:

1. Land used for cover crops or soil improvement but not harvested or grazed.
2. Land in Federal or State conservation programs that was not hayed or grazed in 2012.
3. Land occupied with growing crops for harvest in 2013 or later years but not harvested or summer fallowed in 2012 (except fruit or nuts in an orchard, grove, or vineyard or berries being maintained for production). Examples are acreage planted in winter wheat, strawberries, etc., for harvest in 2013 and no crop was harvested from these acres in 2012.
4. Land in “skipped” rows between rows of crops or field strips.

Farm. The census definition of a farm is any place from which \$1000 or more of agricultural products were produced and sold, or normally would have been sold, during the census year. The definition has changed nine times since it was established in 1850.

Farms by North American Industry Classification System (NAICS). The NAICS classifies economic activities. It was jointly developed by Mexico, Canada, and the U.S. NAICS makes it possible to produce comparable industrial statistics for Mexico, Canada, and the U.S. For the 2012 census, all agricultural production establishments (farms, ranches, nurseries, greenhouses, etc.) were classified by type of activity or activities using the NAICS code. The 2012 census is the fourth census to use NAICS. Censuses prior to the 1997 census used the old Standard Industrial Classification (SIC) system to classify farms.

NAICS was developed to provide a consistent framework for the collection, analysis, and dissemination of industrial statistics used by government policy analysts, academia and researchers, the business community, and the public. It is the first industry classification system developed in accordance with a single principle of aggregation that production units using similar production processes should be grouped together. Though NAICS differs from other industry classification systems, statistics compiled on NAICS are comparable with statistics compiled according to the latest revision of the United Nations’ International Standard Industrial Classification, Revision Three, (ISIC, Revision 3) for some sixty high level groupings. Following are explanations of the major classifications used in 2012.

Farms by size. All farms were classified into size groups according to the total land area in the farm. The land area of a farm is an operating unit concept and includes land owned and operated as well as land rented from others. Land rented to or assigned to a tenant was considered part of the tenant's farm and not part of the owner's.

Grains, oilseeds, dry beans, and dry peas sales. Data are for the total market value of cash grains sold, including corn for grain, seed, or silage; wheat for grain; soybeans for beans; sorghum for grain, seed, or silage; barley for grain; rice; oats for grain; and other grains. Also included is the total market value of cash oilseeds sold, including sunflower seed (oil and non-oil), flaxseed, canola, rapeseed, safflower seed, mustard seed, dry beans, and dry peas.

Harvested cropland. This category includes land from which crops were harvested and hay was cut, land used to grow short-rotation woody crops, Christmas trees, and land in orchards, groves, vineyards, berries, nurseries, and greenhouses. Land from which two or more crops were harvested was counted only once. Land in tapped maple trees was included in woodland not pastured. The 2012 census definition for harvested cropland is the same as the 2007 definition.

Household. Includes all the persons who occupy a housing unit as their usual place of residence. A housing unit is a house, an apartment, a mobile home, a group of rooms, or a single room that is occupied (or if vacant, is intended for occupancy) as separate living quarters. Separate living quarters are those in which the occupants live and eat separately from any other persons in the building and which have direct access from outside the building or through a common hall. The occupants may be a single family, one person living alone, two or more families living together, or any other group of related or unrelated persons who share living arrangements. (People not living in households are classified as living in group quarters.)

Land enrolled in the Conservation Reserve Program (CRP), Wetlands Reserve Program (WRP), Farmable Wetlands Program (FWP), or Conservation Reserve Enhancement Program (CREP). CRP is a program established by the USDA in 1985 that takes land prone to erosion out of production for 10 to 15 years and devotes it to conservation uses. In return, farmers receive an annual rental payment for carrying out approved conservation practices on the conservation acreage. The WRP, FWP, and CREP programs are included under the Conservation Reserve Program and offers landowners financial incentives for conservation practices. Operations with land enrolled in the CRP, WRP, FWP, or CREP were counted as farms, given they received \$1,000 or more in government payments, even if they had no sales and otherwise lacked the potential to have \$1,000 or more in sales.

Land in farms. The acreage designated as "land in farms" consists primarily of agricultural land used for crops, pasture, or grazing. It also includes woodland and wasteland not actually under cultivation or used for pasture or grazing, provided it was part of the farm operator's total operation. Large acreages of woodland or wasteland held for nonagricultural purposes were deleted from individual reports during the edit process. Land in farms includes CRP, WRP, FWP, and CREP acres.

Land in farms is an operating unit concept and includes land owned and operated as well as land rented from others. Land used rent free was reported as land rented from others. All grazing land, except land used under government permits on a per-head basis, was included as “land in farms” provided it was part of a farm or ranch. Land under the exclusive use of a grazing association was reported by the grazing association and included as land in farms. All land in American Indian reservations used for growing crops, grazing livestock, or with the potential of grazing livestock was included as land in farms. Land in reservations not reported by reservation, individual American Indians, or non- Native Americans was reported in the name of the cooperative group that used the land. In many instances, an entire American Indian reservation was reported as one farm.

Land used for vegetables. Data are for the total land used for vegetable and melon crops. The acres were reported only once, even though two or more harvests of a vegetable or more than one vegetable were harvested from the same acres. Respondents also reported harvested acres, acres harvested for fresh market, and acres harvested for processing by individual vegetable crops.

Market value of agricultural products sold. This category represents the gross market value before taxes and production expenses of all agricultural products sold or removed from the place in 2012 regardless of who received the payment. It is equivalent to total sales and it includes sales by the operators as well as the value of any shares received by partners, landlords, contractors, or others associated with the operation. It includes value of direct sales and the value of commodities placed in the Commodity Credit Corporation (CCC) loan program. Market value of agricultural products sold does not include payments received for participation in other federal farm programs. Also, it does not include income from farm-related sources such as custom work and other agricultural services, or income from nonfarm sources.

The value of crops sold in 2012 does not necessarily represent the sales from crops harvested in 2012. Data may include sales from crops produced in earlier years and may exclude some crops produced in 2007 but held in storage and not sold. For commodities such as sugarbeets and wool sold through a co-op that made payments in several installments, respondents were requested to report the total value received in 2012.

The value of agricultural products sold was requested of all operators. If the operators failed to report this information, estimates were made based on the amount of crops harvested, livestock or poultry inventory, or number sold. Caution should be used when comparing sales in the 2012 census with sales reported in earlier censuses. Sales figures are expressed in current dollars and have not been adjusted for inflation or deflation. See Farms with sales and government payments of less than \$1,000.

Operator. The term operator designates a person who operates a farm, either doing the work or making day-to-day decisions about such things as planting, harvesting, feeding, and marketing. The operator may be the owner, a member of the owner’s household, a hired manager, a tenant, a renter, or a sharecropper. If a person rents land to others or has land worked on shares by others, he/she is considered the operator only of the land which is retained for his/her own operation. The census collected information on the total number of operators, the total number of women operators, and demographic information for up to three operators per farm.

Organic agriculture. Respondents were instructed to indicate if they had organic production according to USDA's National Organic Program (NOP) in 2012. Respondents reported whether their organic production was certified or exempt from certification and the sales from NOP produced commodities. They also reported whether they had acres transitioning into NOP production and the value of sales of USDA NOP certified or exempt organically produced commodities. Also see Total organic product sales.

Other cropland. This includes all cropland other than harvested cropland or other pasture and grazing land that could have been used for crops without additional improvements. It includes cropland idle, used for cover crops or soil improvement, cropland which all crops failed or were abandoned, and cropland in cultivated summer fallow.

Other pasture and grazing land that could have been used for crops without additional improvements. This category includes land used only for pasture or grazing that could have been used for crops without additional improvement. Also included are acres of crops hogged or grazed but not harvested prior to grazing. However, cropland that was pastured before or after crops were harvested in 2012 was included as harvested cropland rather than cropland for pasture or grazing. In 2007, this category was referred to as other pasture or grazing land that could have been used for crops without additional improvements. This is a wording change only; data are comparable.

Permanent pasture and rangeland, other than cropland and woodland pastured. This land use category encompasses grazable land that does not qualify as woodland pasture or cropland pasture. It may be irrigated or dry land. In some areas, it can be a high quality pasture that could not be cropped without improvements. In other areas, it is barely able to be grazed and is only marginally better than wasteland.

Persons per household. Or average household size, is obtained by dividing the number of persons in households by the number of households (or householders). For the complete definition, go to [ACS subject definitions](#) "Average household size."

Primary occupation of operator. Data on age and primary occupation were obtained from up to three operators per farm. The primary occupation classifications used were:

1. Farming or ranch work. The operator spent 50- percent or more of his/her worktime during 2012 at farming or ranching.
2. Other. The operator spent less than 50-percent of his/her worktime during 2012 in farming or ranching operations.

Total cropland. This category includes cropland harvested, other pasture and grazing land that could have been used for crops without additional improvements, cropland on which all crops failed or were abandoned, cropland in cultivated summer fallow, and cropland idle or used for cover crops or soil improvement but not harvested and not pastured or grazed.

Total organic product sales. The data represent the value of commodities produced according to USDA's National Organic Program and sold from operations during 2012. Crops, livestock, and poultry products were reported individually on the 2012 report form, but in 2007, these commodities were combined and may have come from either crops or livestock production. The data for the 2012 census years is not directly comparable.

Value of agricultural products sold directly to individuals for human consumption. This item represents the value of agricultural products produced and sold directly to individuals for human consumption from roadside stands, farmers' markets, pick-your-own sites, etc. It excludes non-edible products such as nursery crops, cut flowers, and wool but includes livestock sales. Sales of agricultural products by vertically integrated operations through their own processing and marketing operations were excluded.

Vegetables harvested for fresh market. Respondents reported the total vegetable acres harvested, harvested for fresh market and harvested for processing.

Vegetables harvested for sale. The acres of vegetables harvested is the summation of the acres of individual vegetables harvested. All of the individual vegetable items may not be shown. When more than one vegetable crop was harvested from the same acreage, acres were counted for each crop.



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