North Central Kansas
Regional Food System Assessment

Clay County
Cloud County
Dickinson County
Ellsworth County
Jewell County
Lincoln County
Marshall County
Mitchell County
Ottawa County
Republic County
Saline County
Washington County

2017 - 2018

Report prepared by
Kolia Souza, MS Arch, MSCD
This report was prepared by Kolia Souza, independent consultant, on behalf of the North Central Kansas Food Council under contractual agreement with North Central Regional Planning Commission. Language used throughout this report was borrowed directly from LaClair Consulting Services.
## Contents

**Executive Summary**

**Demographics**

- Population
  - Age of the Population
- Households with Children
- Geographic Mobility
- Unemployment
- Poverty

**Natural Resources**

- Land Availability and Use
- Land Values
- Water
  - Irrigated Farmland in the North Central Kansas Region
  - Water Use

**Farming and Food Production**

- Farms
- Farm Production
  - Fruit and Vegetable Production
- Farm Operators
  - Age of Farm Operators
  - Farm Operator Experience
  - Gender of Principal Farm Operators
  - Principal Farm Operators, by Race and Ethnicity
  - Off-farm Employment
- Farm Sales
  - Farms, by value of sales
  - Sales through Alternative Market Channels
  - Net Farm Income

**Regional Farms and Food Production**

**Other Local Food Production**

- Home Gardening
- Community Gardens
- Hunting, Fishing and Food Foraging

**Food System Infrastructure**

- Food Processing
Executive Summary

Healthy and robust community food systems help to support and sustain healthy communities and strong local economies. The types and amounts of food that are available within a community, and the ways in which that food is presented and made available to members of the community population can exert profound influence on eating behaviors of community members and, in turn, community health outcomes. Food, and the many processes involved in producing it and eventually bringing it to a consumers’ table, also generate significant economic activity and jobs within the community.

One of the key steps to understanding a community food systems’ current strengths and gaps is to conduct a comprehensive assessment of the food system. This report summarizes the results of an assessment of the North Central Kansas regional food system. It brings together data and information from numerous secondary data sources to create a description of the current food system in the region. Highlights of assessment findings include:

**Demographics.** The North Central Kansas region includes the counties of Clay, Cloud, Dickinson, Ellsworth, Jewell, Lincoln, Marshall, Mitchell, Ottawa, Republic, Saline, and Washington. The total population for region is approximately 136,622 and the retiree age subpopulation is significantly higher compared to that of Kansas. Poverty rates are lower than the state average, both overall and among children.

**Farming and Food Production.** In 2012, there were 7,049 farms operating in the region, on about 4.95 million acres of land. Farming in the region is dominated by the production of grain crops, hay and beef cattle. In 2012, the average age of regional farm operators was 57 years. Average farm incomes in the region were generous in 2012 as compared to the state, with 31.7 percent of regional farms reporting net operating losses in 2012. Nearly one-third (31.8 percent) of principal farm operators in the region reported that their principal occupation was something other than farming, and more than one-quarter (28.4 percent) worked 200 days or more off the farm. Although farming in the region is predominantly commodity crops and livestock, there are a small number of farms growing fruits and selling their farm products directly to local consumers. In 2012, the region reported having 32 orchards and approximately 69 farms harvesting fruit or vegetables. Direct sales to individuals were $324,000 in 2012.

**Food Processing and Distribution Infrastructure.** There are currently 11 meat processors operating in Washington County. There is also a distributor (by primary service) and three wholesale suppliers located in Saline County. There is no manufacturing. There is a community kitchen facility located within Saline County; however, additional facilities may be located throughout each of the counties in churches and other community-based organizations.

**The Retail Food Environment.** Many rural areas of Kansas are struggling to retain their local grocery stores. In the North Central Kansas region, there were 27 grocery stores in operation in 2017. In addition to these stores, grocery items are also sold by a meat lockers and dollar and convenience stores. There was a total of 14 farmers’ markets in operation. According to 2016 data, the county is also served by 242 eating and drinking establishments, one of which is a fast food venue.

**Access to Healthy Foods.** Across the nation, Americans’ dietary intakes are poorly aligned with current dietary guidelines. Kansans are no exception. The availability of fruit and vegetable consumption data in the region is inconsistent. However, three counties reported that between 21 and 29 percent of adults were consuming fewer than one serving of vegetables per day and between 43 and 52 percent of adults were consuming fewer than one serving of fruits per day. Consumer expenditure data suggest that about 37 percent of all food expenditures by residents in the region is spent on food prepared and consumed away from home.

**Consumer Eating Behaviors.** In the North Central Kansas region, there are residents that lack ready access to full-service grocery stores that offer healthy food options. In 2015, there were six census tracts identified within region that met the definition of a food desert, meaning that a substantial portion of the tract’s population was low income and lived more than one mile from a grocery store if in an urban area, or more than 10 miles from a store if in a rural area. Nearly 11,000 people (8 percent of the regional population) were low-income and had limited access to a grocery store. In addition to access challenges created by distance from a grocery store, there
are residents that lack access to enough healthy food because they cannot afford to buy it. In 2016, an estimated 12.7 percent of residents (17,470 individuals) struggled just to get enough food, a condition referred to as ‘food insecurity.’ About one in five (19.5 percent) children lived in households that were food insecure. Additionally, between 41 and 58 percent of K-12 students within each county qualify for free or reduced-price school meals, and 10,785 individuals in the region receive food assistance through the SNAP program each month.

**Food Waste.** National research suggests that as much as 40 percent of all food grown in the United States is wasted, with a substantial share of that attributed to household/consumer waste. Although local-level measurements of food waste were not available, extending national per capita waste estimates to local population numbers suggest that annual food waste in the region might be in the neighborhood of 39.6 million pounds, with a value of $50.7 million.

**Economic Impact.** Agriculture and food represent major sectors of the economy, nationally and at the local level. Consumers in North Central Kansas region spend about $358.9 million annually on food purchases. Economic estimates from the Kansas Department of Agriculture indicate that agriculture and food-sector businesses in the county employ about 17,915 people and contribute $4.2 billion to the local economy. Farm product sales in the region totaled approximately $1.5 billion in 2012. In addition to farm product sales, economic activity is also generated by income received from government farm payments and federal food assistance programs and retail food sales.

**Conclusion**

The information presented in this report highlights many current strengths and gaps in the current food system for the North Central Kansas region. The region has a strong agricultural presence, with access to farmland and adequate water supplies. Although agriculture is predominantly focused on the production of grains, hay and beef, there are a promising, albeit small, number of smaller-scale producers growing and producing foods for direct sale to community residents. The presence of Kansas State University, the state’s land grant university, offers food producers and entrepreneurs in the region the opportunity to take advantage of a wealth of available scientific expertise and technical assistance. There is also access to retail grocery and farmers markets within the region.

Despite all of these strengths, however, there are still gaps and opportunities to improve and enhance the local food system. Many farmers are nearing retirement age without younger ones stepping in to fill the void, and high land prices and low farm profitability present significant challenges to the small numbers of younger people who would like to become farmers. Local production of dairy products, poultry and eggs, and fruits and vegetables fall significantly short of local consumption volumes. The vast majority of community residents do not eat the recommended amounts of vegetables and fruits. Approximately 17,470 residents in the region are food-insecure (or struggle to get enough food), because they lack the money to buy it. National research suggests that as much of 40 percent of the food grown in the United States is wasted. If this pattern holds true in the region, more than 39.6 million pounds of food is wasted each year.

These are just a few examples of current assets and gaps; readers of this report will likely identify others. While this report does not address or include every possible measure related to the local food system, it has been structured to provide a systems-level description that touches upon each of the major sectors within the food system, using data that are either readily available or could be collected with reasonable effort within the community setting. Because of that breadth of scope, the depth of information on any one subject is necessarily limited to prevent the assessment process and report from becoming totally unmanageable. It is likely that there will be some areas where the information included will generate interest or raise additional questions that are not answered by the brief topical summaries included in the report – those questions may identify areas the North Central Regional Planning Commission or the North Central Kansas Food Council will wish to conduct further exploration in the future.
This page left intentionally blank.
Demographics

The North Central Kansas Food Council (NCKFC) consists of 12 counties. These counties are located in the North Central Regional Planning Commission service area and include Clay, Cloud, Dickinson, Ellsworth, Jewell, Lincoln, Marshall, Mitchell, Ottawa, Republic, Saline, and Washington Counties. According to U.S. Census Bureau American Community Survey 2016 estimates, the largest city in the NCKFC region is Salina, which is located in Saline County and has a population of approximately 47,513.

Population

According to U.S. Census Bureau American Community Survey 2013-17 5-year estimates, a total of 136,622 people lives within the 9,208 square-mile NCKFC land area. Residents of the NCKFC region account for 4.7 percent of the total Kansas population. Population density is 14.8 people per square mile. Between the 2000 and 2010 decennial census enumerations, the NCKFC region population decreased by 2,700 persons, a 1.9 percent decrease in overall population.

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>Total Population, 2017</th>
<th>% Area Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clay County</td>
<td>8,203</td>
<td>6.0%</td>
</tr>
<tr>
<td>Cloud County</td>
<td>9,191</td>
<td>6.7%</td>
</tr>
<tr>
<td>Dickinson County</td>
<td>19,162</td>
<td>14.0%</td>
</tr>
<tr>
<td>Ellsworth County</td>
<td>6,331</td>
<td>4.6%</td>
</tr>
<tr>
<td>Jewell County</td>
<td>2,963</td>
<td>2.2%</td>
</tr>
<tr>
<td>Lincoln County</td>
<td>3,121</td>
<td>2.3%</td>
</tr>
<tr>
<td>Marshall County</td>
<td>9,853</td>
<td>7.2%</td>
</tr>
<tr>
<td>Mitchell County</td>
<td>6,230</td>
<td>4.6%</td>
</tr>
<tr>
<td>Ottawa County</td>
<td>5,957</td>
<td>4.4%</td>
</tr>
<tr>
<td>Republic County</td>
<td>4,705</td>
<td>3.4%</td>
</tr>
<tr>
<td>Saline County</td>
<td>55,334</td>
<td>40.5%</td>
</tr>
<tr>
<td>Washington County</td>
<td>5,572</td>
<td>4.1%</td>
</tr>
<tr>
<td>Regional Total</td>
<td>136,622</td>
<td>100%</td>
</tr>
</tbody>
</table>


Source geography: Tract.
Age of the Population

The retiree age population (age 65+) of the NCKFC region is significantly higher than that of Kansas or the United States. Its young adult population (age 20-34) is also lower compared to the state or nationally. Approximately 33.6 percent of residents in the region were 55 years or older as compared to 25.5 percent of the Kansas population. About 17 percent of residents were age 20-34 years as compared to 21.1 percent of all Kansans.
Households with Children

According to 2013-2017 American Community Survey estimates, nearly one-quarter of all occupied households in the NCKFC region were family households with one or more child(ren) under the age of 18. This is below the statewide proportion of 31.7 percent.

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>Total Households</th>
<th>Total Family Households</th>
<th>Families with Children (under age 18)</th>
<th>Families with children (under age 18), percent of total households</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clay County</td>
<td>4,069</td>
<td>2,424</td>
<td>1,075</td>
<td>31.60%</td>
</tr>
<tr>
<td>Cloud County</td>
<td>4,637</td>
<td>2,415</td>
<td>1,128</td>
<td>24.33%</td>
</tr>
<tr>
<td>Dickinson County</td>
<td>9,173</td>
<td>5,199</td>
<td>2,327</td>
<td>25.37%</td>
</tr>
<tr>
<td>Ellsworth County</td>
<td>3,231</td>
<td>1,585</td>
<td>566</td>
<td>17.52%</td>
</tr>
<tr>
<td>Jewell County</td>
<td>2,033</td>
<td>831</td>
<td>205</td>
<td>10.08%</td>
</tr>
<tr>
<td>Lincoln County</td>
<td>1,853</td>
<td>785</td>
<td>295</td>
<td>15.92%</td>
</tr>
<tr>
<td>Marshall County</td>
<td>4,890</td>
<td>2,775</td>
<td>1,065</td>
<td>21.78%</td>
</tr>
<tr>
<td>Mitchell County</td>
<td>3,299</td>
<td>1,613</td>
<td>661</td>
<td>20.04%</td>
</tr>
<tr>
<td>Ottawa County</td>
<td>2,789</td>
<td>1,684</td>
<td>647</td>
<td>23.20%</td>
</tr>
<tr>
<td>Republic County</td>
<td>2,888</td>
<td>1,308</td>
<td>417</td>
<td>14.44%</td>
</tr>
<tr>
<td>Saline County</td>
<td>24,350</td>
<td>13,963</td>
<td>6,276</td>
<td>25.77%</td>
</tr>
<tr>
<td>Washington County</td>
<td>2,943</td>
<td>1,549</td>
<td>582</td>
<td>19.78%</td>
</tr>
<tr>
<td>Regional Total</td>
<td>66,155</td>
<td>36,131</td>
<td>15,244</td>
<td>23.44%</td>
</tr>
<tr>
<td>Kansas</td>
<td>1,121,943</td>
<td>735,106</td>
<td>355,887</td>
<td>31.70%</td>
</tr>
<tr>
<td>United States</td>
<td>135,393,564</td>
<td>78,298,703</td>
<td>37,171,726</td>
<td>27.45%</td>
</tr>
</tbody>
</table>

Geographic Mobility

The NCKFC region population is slightly more transient than Kansas as a whole, or the national population. According to the American Community Survey estimates, approximately 0.65 percent of the regional population relocated outside the area between July 2016 and July 2017, compared to 0.28 percent of all Kansans. (Residents who moved to different households within the county are no included in this measure).
<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>Total Population</th>
<th>Population In-migration</th>
<th>Population In-migration %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clay County</td>
<td>8,203</td>
<td>(-512)</td>
<td>-1.08%</td>
</tr>
<tr>
<td>Cloud County</td>
<td>9,191</td>
<td>(-417)</td>
<td>-1.07%</td>
</tr>
<tr>
<td>Dickinson County</td>
<td>19,162</td>
<td>(-834)</td>
<td>-0.53%</td>
</tr>
<tr>
<td>Ellsworth County</td>
<td>6,331</td>
<td>(-32)</td>
<td>0.36%</td>
</tr>
<tr>
<td>Jewell County</td>
<td>2,963</td>
<td>(-134)</td>
<td>-1.01%</td>
</tr>
<tr>
<td>Lincoln County</td>
<td>3,121</td>
<td>(-160)</td>
<td>-0.83%</td>
</tr>
<tr>
<td>Marshall County</td>
<td>9,853</td>
<td>(-375)</td>
<td>-0.74%</td>
</tr>
<tr>
<td>Mitchell County</td>
<td>6,230</td>
<td>(-148)</td>
<td>-0.58%</td>
</tr>
<tr>
<td>Ottawa County</td>
<td>5,957</td>
<td>(-185)</td>
<td>-0.99%</td>
</tr>
<tr>
<td>Republic County</td>
<td>4,705</td>
<td>1</td>
<td>1.23%</td>
</tr>
<tr>
<td>Saline County</td>
<td>55,334</td>
<td>(-2,544)</td>
<td>-0.99%</td>
</tr>
<tr>
<td>Washington County</td>
<td>5,572</td>
<td>(-319)</td>
<td>-1.51%</td>
</tr>
<tr>
<td>Regional Total</td>
<td>136,622</td>
<td>(-6,589)</td>
<td>-0.65%</td>
</tr>
<tr>
<td>Kansas</td>
<td>2,853,118</td>
<td>(40,572)</td>
<td>-0.28%</td>
</tr>
<tr>
<td>United States</td>
<td>321,004,407</td>
<td>7,233,626</td>
<td>0.35%</td>
</tr>
</tbody>
</table>


**Unemployment**

During 2017, overall unemployment rates in the NCKFC were higher than the state unemployment rate of three percent. Increases in overall unemployment rates from 2008 to 2011 were consistent across each of the 12 counties and may reflect the residual effects of the 2008 recession. Unemployment rates consider only working-age adults who are actively seeking employment; those that are not currently in the workforce or have given up trying to find jobs are not reflected in these statistics.

![Average Annual Unemployment (Not Seasonally Adjusted)](chart.png)
**Poverty**

Poverty is a condition defined by household income levels that are insufficient to support a modest standard of living. In the United States, the Census Bureau sets annual poverty level thresholds, based upon household size and income levels. These poverty thresholds are used to monitor poverty conditions in the U.S. and to define eligibility for numerous social welfare programs. In 2017, Federal Poverty Levels (FPLs) were determined as shown in the table at the right.

The average overall poverty rate in the NCKFC region was estimated at 10.4 percent of the population during 2017, a rate that is lower than the statewide rate of 12.8 percent. Among children age 0 to 17 years, 15.3 percent of children in the region lived in poor households, compared to 16.4 percent statewide. The average for median household income in the region was $48,140. The following chart orders the counties by best ranking per category.

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>% in Poverty, all ages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitchell County</td>
<td>6.5%</td>
</tr>
<tr>
<td>Lincoln County</td>
<td>7.4%</td>
</tr>
<tr>
<td>Marshall County</td>
<td>8.9%</td>
</tr>
<tr>
<td>Clay County</td>
<td>9.4%</td>
</tr>
<tr>
<td>Ottawa County</td>
<td>9.7%</td>
</tr>
<tr>
<td>Washington County</td>
<td>9.7%</td>
</tr>
<tr>
<td>Regional Average</td>
<td>10.4%</td>
</tr>
<tr>
<td>Ellsworth County</td>
<td>11.0%</td>
</tr>
<tr>
<td>Dickinson County</td>
<td>11.6%</td>
</tr>
<tr>
<td>Republic County</td>
<td>11.7%</td>
</tr>
<tr>
<td>Cloud County</td>
<td>11.9%</td>
</tr>
<tr>
<td>Saline County</td>
<td>12.6%</td>
</tr>
<tr>
<td>Kansas</td>
<td>12.8%</td>
</tr>
<tr>
<td>Jewell County</td>
<td>14.2%</td>
</tr>
<tr>
<td>United States</td>
<td>14.6%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>% in Poverty, age 0-17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lincoln County</td>
<td>11.2%</td>
</tr>
<tr>
<td>Marshall County</td>
<td>11.3%</td>
</tr>
<tr>
<td>Cloud County</td>
<td>11.7%</td>
</tr>
<tr>
<td>Dickinson County</td>
<td>13.0%</td>
</tr>
<tr>
<td>Washington County</td>
<td>13.6%</td>
</tr>
<tr>
<td>Ellsworth County</td>
<td>14.4%</td>
</tr>
<tr>
<td>Clay County</td>
<td>14.6%</td>
</tr>
<tr>
<td>Mitchell County</td>
<td>15.3%</td>
</tr>
<tr>
<td>Regional Average</td>
<td>15.3%</td>
</tr>
<tr>
<td>Kansas</td>
<td>16.4%</td>
</tr>
<tr>
<td>Ottawa County</td>
<td>16.8%</td>
</tr>
<tr>
<td>Saline County</td>
<td>17.0%</td>
</tr>
<tr>
<td>Republic County</td>
<td>19.1%</td>
</tr>
<tr>
<td>United States</td>
<td>20.3%</td>
</tr>
<tr>
<td>Jewell County</td>
<td>25.7%</td>
</tr>
</tbody>
</table>


**Natural Resources**

Agriculture and food production are highly dependent upon having access to sufficient land, high-quality soils, and water to support crop or livestock production. This section examines the availability and use of these natural resources as it relates to food production.

**Land Availability and Use**

The NCKFC regional boundaries enclose an area approximately equal to 9,208 square miles, or approximately 5.9 million acres. Of that, 4,933,455 acres (83.7 percent) was in use for farming in 2012. The map at on the following page illustrates the locations of prime farmland in the region, regardless of its current use.
Farmland in the NCKFC region is used primarily for cropland (62 percent) and pastureland (32 percent). The chart at above right show how farmland and croplands in the region were being utilized in 2012. The table on the following page details regional land use.
Land Values

Access to land is essential for farming operations, and land holdings represent a significant asset on the farm balance sheet. When land values become too high, however, there may be negative impacts on the local food system. When land values are high and farming incomes are low, farm owners may be tempted to sell off land and essentially “cash out”, taking the capital gains from the high land prices. High land prices may also be a barrier for new farmers that lack the capital needed to purchase good farmland. Nationally, farmland values have risen steadily since the mid-1980s. Farmland values vary significantly by location and may be influenced by factors such as the general economy, local farm economies, policies, and development pressures.

Within the state of Kansas, there is significant variation in farmland values by region and by county. Values are generally higher for cropland than pastureland, with irrigated croplands bringing higher prices than non-irrigated lands.

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>Total Cropland Acres</th>
<th>Total Harvested Cropland</th>
<th># of Farms with Cropland</th>
<th>Farms with Harvested Cropland</th>
<th>Farms with Harvested Cropland</th>
<th>Cropland – summer fallow, in acres</th>
<th>Land enrolled in CRP, WRP, or CREP, in acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clay County</td>
<td>230,795</td>
<td>209,664</td>
<td>503</td>
<td>415</td>
<td>16,642</td>
<td>1,393</td>
<td>835</td>
</tr>
<tr>
<td>Cloud County</td>
<td>208,841</td>
<td>188,325</td>
<td>384</td>
<td>329</td>
<td>12,681</td>
<td>2,075</td>
<td>3,352</td>
</tr>
<tr>
<td>Dickinson County</td>
<td>335,353</td>
<td>292,261</td>
<td>878</td>
<td>702</td>
<td>310,910</td>
<td>1,823</td>
<td>4,987</td>
</tr>
<tr>
<td>Ellsworth County</td>
<td>182,724</td>
<td>132,524</td>
<td>391</td>
<td>263</td>
<td>26,056</td>
<td>16,238</td>
<td>4,773</td>
</tr>
<tr>
<td>Jewell County</td>
<td>294,769</td>
<td>266,163</td>
<td>403</td>
<td>346</td>
<td>15,613</td>
<td>6,151</td>
<td>2,172</td>
</tr>
<tr>
<td>Lincoln County</td>
<td>204,683</td>
<td>172,141</td>
<td>401</td>
<td>307</td>
<td>16,040</td>
<td>8,375</td>
<td>1,211</td>
</tr>
<tr>
<td>Marshall County</td>
<td>301,711</td>
<td>276,600</td>
<td>729</td>
<td>632</td>
<td>19,942</td>
<td>986</td>
<td>3,209</td>
</tr>
<tr>
<td>Mitchell County</td>
<td>303,529</td>
<td>273,381</td>
<td>393</td>
<td>343</td>
<td>13,518</td>
<td>8,772</td>
<td>1,504</td>
</tr>
<tr>
<td>Ottawa County</td>
<td>238,999</td>
<td>217,525</td>
<td>456</td>
<td>388</td>
<td>12,616</td>
<td>2,576</td>
<td>3,145</td>
</tr>
<tr>
<td>Republic County</td>
<td>258,537</td>
<td>237,799</td>
<td>533</td>
<td>463</td>
<td>11,808</td>
<td>1,625</td>
<td>5,245</td>
</tr>
<tr>
<td>Saline County</td>
<td>236,242</td>
<td>215,740</td>
<td>603</td>
<td>502</td>
<td>13,505</td>
<td>2,291</td>
<td>2,249</td>
</tr>
<tr>
<td>Washington County</td>
<td>298,156</td>
<td>274,030</td>
<td>653</td>
<td>561</td>
<td>16,411</td>
<td>1,454</td>
<td>5,140</td>
</tr>
<tr>
<td>Regional Total</td>
<td>3,094,339</td>
<td>2,756,153</td>
<td>6,327</td>
<td>5,251</td>
<td>485,742</td>
<td>53,759</td>
<td>37,822</td>
</tr>
<tr>
<td>Kansas</td>
<td>28,503,265</td>
<td>21,043,596</td>
<td>52,285</td>
<td>41,927</td>
<td>2,910,105</td>
<td>3,191,238</td>
<td>442,258</td>
</tr>
</tbody>
</table>

Data Source: U.S. Census of Agriculture, 2012

Average U.S. farm real estate value, nominal and real (inflation adjusted), 1970-2015

Note: Farm real estate includes land and buildings. Data reflect values as of June 1 of each year. Excludes Alaska and Hawaii. The GDP chain-type price index is used to convert NASB current-dollar statistics to 2009=100 equivalents (Bureau of Economic Analysis, Department of Commerce). Source: USDA, Economic Research Service using data from USDA, National Agricultural Statistics Service (NASS).
Kansas Farmland Values ($/ acre), 2016*

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>Non-irrigated Cropland</th>
<th>Irrigated Cropland</th>
<th>Pasture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clay County</td>
<td>$ 2,913</td>
<td>---</td>
<td>$ 2,097</td>
</tr>
<tr>
<td>Cloud County</td>
<td>$ 3,524</td>
<td>---</td>
<td>$ 2,544</td>
</tr>
<tr>
<td>Dickinson County</td>
<td>$ 3,330</td>
<td>---</td>
<td>$ 2,397</td>
</tr>
<tr>
<td>Ellsworth County</td>
<td>$ 781</td>
<td>---</td>
<td>$ 562</td>
</tr>
<tr>
<td>Jewell County</td>
<td>$ 2,354</td>
<td>---</td>
<td>$ 1,695</td>
</tr>
<tr>
<td>Lincoln County</td>
<td>$ 2,642</td>
<td>---</td>
<td>$ 1,902</td>
</tr>
<tr>
<td>Marshall County</td>
<td>$ 5,130</td>
<td>---</td>
<td>$ 3,692</td>
</tr>
<tr>
<td>Mitchell County</td>
<td>$ 2,758</td>
<td>---</td>
<td>$ 1,985</td>
</tr>
<tr>
<td>Ottawa County</td>
<td>$ 3,347</td>
<td>---</td>
<td>$ 2,409</td>
</tr>
<tr>
<td>Republic County</td>
<td>$ 2,486</td>
<td>---</td>
<td>$ 1,789</td>
</tr>
<tr>
<td>Saline County</td>
<td>$ 2,604</td>
<td>---</td>
<td>$ 1,874</td>
</tr>
<tr>
<td>Washington County</td>
<td>$ 3,129</td>
<td>---</td>
<td>$ 2,252</td>
</tr>
<tr>
<td>Kansas</td>
<td>$ 2,398</td>
<td>$3,400</td>
<td>$1,726</td>
</tr>
</tbody>
</table>

NOTE: Missing estimates for irrigated values are due to insufficient observations of irrigated land sales in the previous three years.
*Values shown are for bare land, minimum 40 acres in size. Values are estimated by the Kansas Property Valuations Department.

Data source: Taylor, 2017c

Estimated Cash Rental Rates ($/acre), 2016

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>Non-irrigated Cropland</th>
<th>Irrigated Cropland</th>
<th>Pasture</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Tenant-owned</td>
<td>Landowner-owned</td>
</tr>
<tr>
<td>Clay County</td>
<td>$ 70.50</td>
<td>$ 78.00</td>
<td>$104.00</td>
</tr>
<tr>
<td>Cloud County</td>
<td>$ 61.50</td>
<td>$ 78.00</td>
<td>$103.00</td>
</tr>
<tr>
<td>Dickinson County</td>
<td>$ 51.00</td>
<td>$ 51.00</td>
<td>$ 70.00</td>
</tr>
<tr>
<td>Ellsworth County</td>
<td>$ 40.00</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Jewell County</td>
<td>$ 75.00</td>
<td>$ 81.00</td>
<td>$107.00</td>
</tr>
<tr>
<td>Lincoln County</td>
<td>$ 53.00</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Marshall County</td>
<td>$ 103.00</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Mitchell County</td>
<td>$ 66.50</td>
<td>$ 72.00</td>
<td>$ 95.00</td>
</tr>
<tr>
<td>Ottawa County</td>
<td>$ 61.50</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Republic County</td>
<td>$ 87.00</td>
<td>$ 85.00</td>
<td>$112.00</td>
</tr>
<tr>
<td>Saline County</td>
<td>$ 61.50</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Washington County</td>
<td>$ 80.00</td>
<td>$ 77.00</td>
<td>$102.00</td>
</tr>
<tr>
<td>Kansas (avg.)</td>
<td>$ 60.94</td>
<td>$ 65.33</td>
<td>$ 89.50</td>
</tr>
</tbody>
</table>

*Values shown are for bare land, minimum 40 acres in size. Values are estimated by the Kansas Property Valuations Department.

Data Source: USDA NASS, Census of Agriculture via Taylor, 2017a, 2017b

Water

In addition to quality soils, water is another primary resource necessary to support crop and livestock production. In Western Kansas, where rainfall is less abundant and much of the water used in agriculture is obtained from aquifers, declining aquifer levels has become a significant concern. Eastern Kansas counties typically experience higher annual precipitation levels and are less dependent upon irrigation and surface or groundwater reservoirs for agricultural needs.

Irrigated Farmland in the North Central Kansas Region

A small percentage of farms (approximately 10 percent) utilize irrigation in the state. Farm irrigation in the NCKFC region is lower than the state average at 8.1 percent. The table on the following page shows the number of farms in the region which used irrigation in 2012 and the amount of acreage that was irrigated. The counties are rank ordered by irrigation used, highest to lowest.
## Percent of Cropland Irrigated in Kansas, by County, 2012

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>Total Farms</th>
<th>Farms Using Irrigation</th>
<th>% Farms Using Irrigation</th>
<th>Land in Irrigated Farms (acres)</th>
<th>Irrigated Land (acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Republic County</td>
<td>575</td>
<td>116</td>
<td>20.2%</td>
<td>153,091</td>
<td>46,533</td>
</tr>
<tr>
<td>Cloud County</td>
<td>461</td>
<td>86</td>
<td>18.7%</td>
<td>136,299</td>
<td>15,234</td>
</tr>
<tr>
<td>Clay County</td>
<td>541</td>
<td>78</td>
<td>14.4%</td>
<td>125,030</td>
<td>29,219</td>
</tr>
<tr>
<td>Jewell County</td>
<td>453</td>
<td>37</td>
<td>8.2%</td>
<td>79,371</td>
<td>14,983</td>
</tr>
<tr>
<td>Mitchell County</td>
<td>415</td>
<td>32</td>
<td>7.7%</td>
<td>10,084</td>
<td>8,399</td>
</tr>
<tr>
<td>Lincoln County</td>
<td>431</td>
<td>32</td>
<td>7.4%</td>
<td>3,044</td>
<td>567</td>
</tr>
<tr>
<td>Saline County</td>
<td>674</td>
<td>47</td>
<td>7.0%</td>
<td>58,007</td>
<td>4,838</td>
</tr>
<tr>
<td>Washington County</td>
<td>732</td>
<td>49</td>
<td>6.7%</td>
<td>85,991</td>
<td>9,721</td>
</tr>
<tr>
<td>Ottawa County</td>
<td>525</td>
<td>32</td>
<td>6.1%</td>
<td>77,918</td>
<td>4,221</td>
</tr>
<tr>
<td>Dickinson County</td>
<td>1,011</td>
<td>39</td>
<td>3.9%</td>
<td>48,895</td>
<td>4,269</td>
</tr>
<tr>
<td>Marshall County</td>
<td>796</td>
<td>19</td>
<td>2.4%</td>
<td>31,056</td>
<td>2,934</td>
</tr>
<tr>
<td>Ellsworth County</td>
<td>435</td>
<td>7</td>
<td>1.6%</td>
<td>6,742</td>
<td>574</td>
</tr>
<tr>
<td>Regional Totals</td>
<td>7,049</td>
<td>574</td>
<td>8.1%</td>
<td>67,961</td>
<td>11,791</td>
</tr>
<tr>
<td>Kansas</td>
<td>61,773</td>
<td>6,205</td>
<td>10%</td>
<td>13,927,077</td>
<td>2,881,292</td>
</tr>
</tbody>
</table>

### Data Source: USDA NASS, Census of Agriculture

---

## Farms and Irrigation Use, 2012

Water Use

The table on the following page outlines types of water use in the region. Definitions for water use categories are provided below.
Water Use, by type of Use (million gal/day)

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>Domestic Use</th>
<th>Irrigation</th>
<th>Livestock</th>
<th>Industrial</th>
<th>Mining</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clay County</td>
<td>0.59</td>
<td>7.28</td>
<td>0.52</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Cloud County</td>
<td>0.63</td>
<td>8.64</td>
<td>0.47</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Dickinson County</td>
<td>1.27</td>
<td>2.38</td>
<td>0.91</td>
<td>0.02</td>
<td>0.06</td>
</tr>
<tr>
<td>Ellsworth County</td>
<td>0.63</td>
<td>0.49</td>
<td>0.28</td>
<td>0.01</td>
<td>0.35</td>
</tr>
<tr>
<td>Jewell County</td>
<td>0.17</td>
<td>1.07</td>
<td>0.36</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Lincoln County</td>
<td>0.16</td>
<td>0.51</td>
<td>0.29</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Marshall County</td>
<td>0.65</td>
<td>0.44</td>
<td>0.32</td>
<td>0.03</td>
<td>0.01</td>
</tr>
<tr>
<td>Mitchell County</td>
<td>0.56</td>
<td>0.50</td>
<td>0.25</td>
<td>0.04</td>
<td>0.00</td>
</tr>
<tr>
<td>Ottawa County</td>
<td>0.54</td>
<td>3.14</td>
<td>0.60</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Republic County</td>
<td>0.51</td>
<td>13.29</td>
<td>0.45</td>
<td>0.00</td>
<td>0.01</td>
</tr>
<tr>
<td>Saline County</td>
<td>3.42</td>
<td>2.55</td>
<td>0.29</td>
<td>0.09</td>
<td>0.03</td>
</tr>
<tr>
<td>Washington County</td>
<td>0.42</td>
<td>2.96</td>
<td>1.19</td>
<td>0.02</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Data Source: U.S. Geological Survey, Water Data

Definitions of water use categories:
- **Municipal/domestic** – Household use (indoor or outdoor), and municipal water supply use
- **Irrigation** – Water applied by an irrigation system to support crop and pasture growth, or to maintain vegetation on recreational lands such as parks and golf courses
- **Livestock** – Water used for livestock watering, feedlots, dairy operations, and other on-farm needs
- **Industrial** – Water used for fabrication, processing, washing and cooling
- **Mining** – Water used for the extraction of naturally-occurring minerals (such as coal, sand and gravel), liquids (such as crude petroleum) and gases (such as natural gas)

Farming and Food Production

**Farms**

In 2012, there were 7,049 farms in the NCKFC region enumerated in U.S. Census of Agriculture, occupying nearly 5 million acres of land. The average farm size was 745 acres. Average farm sizes for each county are shown on the map on the following page. Both national and state trends have shown reductions in the numbers of farms and increases in the average farm size in recent years, and those statistics have fluctuated throughout the region since 1997.

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>Total Farms</th>
<th>Land in Farms (acres)</th>
<th>Avg. Farm Size (acres)</th>
<th>Total Cropland (acres)</th>
<th>Harvested Cropland (acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Republic County</td>
<td>575</td>
<td>362,520</td>
<td>670</td>
<td>230,795</td>
<td>209,664</td>
</tr>
<tr>
<td>Cloud County</td>
<td>461</td>
<td>321,962</td>
<td>698</td>
<td>208,841</td>
<td>188,325</td>
</tr>
<tr>
<td>Clay County</td>
<td>541</td>
<td>510,193</td>
<td>505</td>
<td>335,353</td>
<td>292,261</td>
</tr>
<tr>
<td>Jewell County</td>
<td>453</td>
<td>381,185</td>
<td>876</td>
<td>182,724</td>
<td>135,524</td>
</tr>
<tr>
<td>Mitchell County</td>
<td>415</td>
<td>463,695</td>
<td>1,024</td>
<td>294,726</td>
<td>266,163</td>
</tr>
<tr>
<td>Lincoln County</td>
<td>431</td>
<td>397,172</td>
<td>922</td>
<td>204,683</td>
<td>172,141</td>
</tr>
<tr>
<td>Saline County</td>
<td>674</td>
<td>438,438</td>
<td>551</td>
<td>301,711</td>
<td>276,600</td>
</tr>
<tr>
<td>Washington County</td>
<td>732</td>
<td>438,999</td>
<td>1,058</td>
<td>303,529</td>
<td>273,381</td>
</tr>
<tr>
<td>Ottawa County</td>
<td>525</td>
<td>419,823</td>
<td>800</td>
<td>238,999</td>
<td>217,525</td>
</tr>
<tr>
<td>Dickinson County</td>
<td>1,011</td>
<td>361,076</td>
<td>628</td>
<td>258,537</td>
<td>237,799</td>
</tr>
<tr>
<td>Marshall County</td>
<td>796</td>
<td>364,468</td>
<td>541</td>
<td>236,242</td>
<td>215,740</td>
</tr>
<tr>
<td>Ellsworth County</td>
<td>435</td>
<td>490,063</td>
<td>669</td>
<td>298,158</td>
<td>274,030</td>
</tr>
<tr>
<td>Regional Totals</td>
<td>7,049</td>
<td>4,949,594</td>
<td>702</td>
<td>3,041,341</td>
<td>2,759,153</td>
</tr>
</tbody>
</table>

Data Source: USDA NASS, Census of Agriculture
Farm Production

Farming in the NCKFC region is dominated by grain crops, hay and beef cattle production. There were approximately 10 farms that reported fruit and vegetable production each as a primary activity in the region in 2012.

The charts on the following page lists the top five crop items and livestock inventory for each county by state ranking (Kansas having 105 counties). Individual county reports reference reported quantities within each category.
Fruit and Vegetable Production

Commodity crops (corn, soybeans, and wheat) dominate overall crop production in Kansas, and the same is true in NCKFC region. During 2012, a total of 39 farms in the region that reported harvesting vegetables for sale. The number of acres those farms harvested was not fully disclosed. Approximately 32 farms reported having orchards, and fruit and vegetable production accounted for less than one percent of all cropland acres harvested in 2012.
Farm Operators

Age of Farm Operators

Across Kansas, the average age of farmers has been increasing for many years. The average age of NCKFC region Farm Operators in from 2007 to 2012 has remained at 57 years. The average age of all Kansas principal farm operators in 2012 was 58.2 years.

Farm Operator Experience

Across Kansas, and in the NCKFC region, the vast majority of principal farm operators have 10 or more years of experience as farm operators. The numbers of new farmers entering the occupation are small. This data, coupled with the data on aging of farm operators, raises concern over retirement. There may not be sufficient numbers of new farmers coming on board to sustain farming operations. In 2012, Kansas farmers reported an average of 27.1 years of farm operator experience; regional farmers averaged 27.8 years.
Gender of Principal Farm Operators
Across Kansas, and in the NCKFC region, a significant majority of principal farm operators are male. Although 25 percent of all regional farmer operators in 2012 were women, women accounted for only six percent of principal farm operators.

Principals Farm Operators, by Race and Ethnicity
Only a small percentage of Kansas farms have principal operators that are non-white, or of Hispanic/Latino ethnicity. The same is true in the NCKFC region. In 2012, over 10,000 principal farm operators in region self-identified as White and 76 self-identified as Hispanic or Latino. Additionally, 10 operators self-identified as Black, 27 as American Indian/Alaskan Native, and only two as Asian.
Off-farm Employment

The majority of farm operators find it necessary to supplement income from farming operations with other sources of income. In 2012, nearly one-third (31.8 percent) of principal farm operators in the NCKFC region reported that their primary occupation was something other than farming. Approximately 41.4 percent worked at least some days off the farm. Just over one-quarter of principal farm operators (28.4 percent) worked off the farm for 200 days or more during 2012.

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>Primary Occupation Other than Farming</th>
<th>Worked at Least Some Days Off-farm</th>
<th>Worked Off-farm 200 Days or More</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clay County</td>
<td>253</td>
<td>333</td>
<td>230</td>
</tr>
<tr>
<td>Cloud County</td>
<td>247</td>
<td>274</td>
<td>216</td>
</tr>
<tr>
<td>Dickinson County</td>
<td>591</td>
<td>685</td>
<td>423</td>
</tr>
<tr>
<td>Ellsworth County</td>
<td>223</td>
<td>301</td>
<td>227</td>
</tr>
<tr>
<td>Jewell County</td>
<td>153</td>
<td>246</td>
<td>135</td>
</tr>
<tr>
<td>Lincoln County</td>
<td>160</td>
<td>230</td>
<td>158</td>
</tr>
<tr>
<td>Marshall County</td>
<td>352</td>
<td>457</td>
<td>298</td>
</tr>
<tr>
<td>Mitchell County</td>
<td>164</td>
<td>264</td>
<td>178</td>
</tr>
<tr>
<td>Ottawa County</td>
<td>263</td>
<td>357</td>
<td>254</td>
</tr>
<tr>
<td>Republic County</td>
<td>226</td>
<td>320</td>
<td>232</td>
</tr>
<tr>
<td>Saline County</td>
<td>359</td>
<td>462</td>
<td>311</td>
</tr>
<tr>
<td>Washington County</td>
<td>349</td>
<td>422</td>
<td>323</td>
</tr>
<tr>
<td>Region</td>
<td>3,340</td>
<td>4,438</td>
<td>2,985</td>
</tr>
</tbody>
</table>

*Data Source: U.S. Census of Agriculture, 2012*

Farm Sales

During 2012, farms in the NCKFC region reported total sales of farm products valued at more than $50 million. Crop sales accounted for about two-thirds of total sales. The average market value of products sold by regional farms in 2012 was $110,403 – a significant increase over previous census-year reports. This increase in value of sales likely represents changes in market values of products as well as changes in production volumes.

<table>
<thead>
<tr>
<th>Year</th>
<th>Farms</th>
<th>Total Sales</th>
<th>Crop Sales</th>
<th>Livestock Sales</th>
<th>Avg. per Farm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>7,978</td>
<td>$ 766,029,000</td>
<td>$ 424,389,000</td>
<td>$ 341,640,000</td>
<td>$ 1,173,446</td>
</tr>
<tr>
<td>2002</td>
<td>7,666</td>
<td>$ 685,730,000</td>
<td>$ 303,564,000</td>
<td>$ 382,166,000</td>
<td>$ 1,078,925</td>
</tr>
<tr>
<td>2007</td>
<td>7,604</td>
<td>$ 1,146,257,000</td>
<td>$ 617,638,000</td>
<td>$ 514,138,800</td>
<td>$ 1,871,225</td>
</tr>
<tr>
<td>2012</td>
<td>7,049</td>
<td>$ 1,453,869,000</td>
<td>$ 940,527,000</td>
<td>$ 513,340,000</td>
<td>$ 2,553,676</td>
</tr>
</tbody>
</table>

*Data Source: U.S. Census of Agriculture, 2012*

Farms, by value of sales

When grouped by the total value of their sales, it becomes clear that the majority (57.3 percent) of NCKFC region farms operate at either a very small or large scale. Nearly one-quarter (23.9 percent) of farms had sales valued at less than $2,500 in 2012 while one-third (33.4 percent) of farms had sales valued at $100,000 or more.
Sales through Alternative Market Channels
Although traditional commodity farming dominates the Kansas farm market, a few NCKFC region farms are attempting to market their products through alternative marketing channels. The table below illustrates the number of farms that reported engaging in these activities.

<table>
<thead>
<tr>
<th>Market Approach, 2012</th>
<th>Kansas</th>
<th>North Central Kansas region</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Farms</td>
<td>$ Value</td>
</tr>
<tr>
<td>Direct sales to individuals, for human consumption</td>
<td>2,044</td>
<td>$8,957,000</td>
</tr>
<tr>
<td>Sales directly to retail outlets</td>
<td>406</td>
<td>No data</td>
</tr>
<tr>
<td>Sales of value-added commodities</td>
<td>1,615</td>
<td>No data</td>
</tr>
<tr>
<td>Sales through Community-Supported Agriculture program</td>
<td>144</td>
<td>No data</td>
</tr>
<tr>
<td>Agritourism Services</td>
<td>1,000</td>
<td>$8,271,000</td>
</tr>
</tbody>
</table>

(D) = data suppressed to prevent disclosure of data for individual farms

Data Source: U.S. Census of Agriculture, 2012

Net Farm Income
Net average incomes for NCKFC region farms in 2012 were generous at $63,402. By comparison, 2012 net farm income for all farms in Kansas averaged $50,903. Nearly one-third (31.7 percent) of regional farms reported net operating losses in 2012 as compared to about 41 percent for the state average.
### Farm Income, 2012

<table>
<thead>
<tr>
<th>Net cash farm income of operations (total)</th>
<th>$446,919,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average per farm</td>
<td>$63,402</td>
</tr>
<tr>
<td>Percent of farms that reported net gains</td>
<td>68.3%</td>
</tr>
<tr>
<td>Average net gain per farm</td>
<td>$106,822</td>
</tr>
<tr>
<td>Percent of farms that reported net losses</td>
<td>31.7%</td>
</tr>
<tr>
<td>Average net loss per farm</td>
<td>$33,402</td>
</tr>
</tbody>
</table>

Data Source: U.S. Census of Agriculture, 2012

### Regional Farms and Food Production

When considering the “local” food system, it is important to consider what food production is occurring in the North Central Kansas region. A review of vendor listings for farmers’ markets located in northcentral Kansas shows that vendor/producers regularly sell their products at venues outside of their home counties, and it is equally likely that some consumers travel outside of the county to bordering communities to purchase foods that satisfy their desires and expectations. The table below shows the number of farms in each of several counties within the region that harvested fruits or vegetables in 2012 or sold farm products directly to individual consumers or retail outlets.

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>Total Farms</th>
<th>Farms Harvesting Vegetables</th>
<th><em>Vegetables Harvested by acre</em></th>
<th>Farms with Orchard</th>
<th>Acres in Ornaments</th>
<th>Farms-selling direct to individuals</th>
<th>Value of Direct Sales</th>
<th>Farms-selling direct to retail outlets</th>
<th>Farms-producing value-added products</th>
<th>Farms participating in CSA programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clay County</td>
<td>541</td>
<td>2</td>
<td>D</td>
<td>0</td>
<td>0</td>
<td>14</td>
<td>$45,000</td>
<td>7</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>Cloud County</td>
<td>461</td>
<td>3</td>
<td>11</td>
<td>0</td>
<td>0</td>
<td>12</td>
<td>$19,000</td>
<td>2</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Dickinson County</td>
<td>1,011</td>
<td>4</td>
<td>0</td>
<td>7</td>
<td>13</td>
<td>34</td>
<td>$48,000</td>
<td>0</td>
<td>19</td>
<td>0</td>
</tr>
<tr>
<td>Ellsworth County</td>
<td>435</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>27,000</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Jewell County</td>
<td>453</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>8</td>
<td>10,000</td>
<td>2</td>
<td>17</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Lincoln County</td>
<td>431</td>
<td>1</td>
<td>D</td>
<td>0</td>
<td>4</td>
<td>16</td>
<td>$21,000</td>
<td>2</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>Marshall County</td>
<td>796</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>16</td>
<td>52,000</td>
<td>2</td>
<td>14</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Mitchell County</td>
<td>415</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>8</td>
<td>12,000</td>
<td>2</td>
<td>14</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Ottawa County</td>
<td>525</td>
<td>6</td>
<td>8</td>
<td>24</td>
<td>11</td>
<td>23,000</td>
<td>2</td>
<td>14</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Republic County</td>
<td>575</td>
<td>9</td>
<td>D</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Saline County</td>
<td>674</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>18</td>
<td>46,000</td>
<td>3</td>
<td>10</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Washington County</td>
<td>732</td>
<td>7</td>
<td>12</td>
<td>1</td>
<td>16</td>
<td>53,000</td>
<td>4</td>
<td>17</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Region</td>
<td>7,049</td>
<td>~39</td>
<td>37</td>
<td>~67</td>
<td>145</td>
<td>~$324,000</td>
<td>27</td>
<td>140</td>
<td>16</td>
<td>16</td>
</tr>
</tbody>
</table>

*Vegetable statistics include potatoes and melons

(D) = Data suppressed to avoid disclosure on information for individual farms

Data Source: U.S. Census of Agriculture, 2012
Other Local Food Production

Home Gardening

Although most communities lack reliable information about the numbers of community residents that grow at least some of their own foods, national studies tell us that interest in home gardening has enjoyed a strong resurgence in recent years. A study published by the National Gardening Association (2014) found that more than one-third (35 percent) of U.S. households had grown food for their own use during 2013. That finding indicates the highest overall participation levels seen in the U.S. in a decade, and an increase of 17 percent over five years. The study found that there had been an increased interest in food gardening among millennials (age 18-34 years old), with a 63 percent increase in participation in food gardening among that group between 2008 and 2013. The report also estimated that more than 2 million U.S. households participated in community gardens in 2013, a 200% increase in five years.

Participants in the same study were asked about the reasons why they participated in food gardening. Their responses may be helpful in understanding what factors are driving the increased interest. Results are shown in the chart below.

![REASONS FOR FOOD GARDENING](chart.png)


Community Gardens

Community Gardens are also growing in popularity – new gardens are being established in many Kansas Communities. Community Gardens are garden sites that offer growing space to multiple community members. Although rules and policies may vary, garden participants are assigned one or more plots upon which they may grow food plants, herbs or flowers of their choosing. Community Gardens are frequently organized by non-profit organizations or groups of community volunteers. Many gardens offer instruction and educational programming and access to shared tools and equipment. In addition to the obvious benefits of healthy foods and physical activity, community gardens provide social interaction that helps to build community. Because Community Gardens are often established on abandoned lots or other un-space within the community, they may also help to increase the attractiveness of a neighborhood by eliminating eyesores or hazardous conditions.

The chart on the following page lists community gardens in the NCKFC region.
### Geographic Area

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>Community Garden</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clay County</td>
<td>SonShine Community Garden</td>
<td>Clay Center, KS</td>
</tr>
<tr>
<td>Cloud County</td>
<td>Concordia Community Garden</td>
<td>Concordia, KS</td>
</tr>
<tr>
<td>Dickinson County</td>
<td>Abilene Community Garden</td>
<td>Abilene, KS</td>
</tr>
<tr>
<td>Dickinson County</td>
<td>Herington Community Garden</td>
<td>Herington, KS</td>
</tr>
<tr>
<td>Ellsworth County</td>
<td>Wilson Community Garden</td>
<td>Wilson, KS</td>
</tr>
<tr>
<td>Jewell County</td>
<td>Mankato Community Garden</td>
<td>Mankato, KS</td>
</tr>
<tr>
<td>Jewell County</td>
<td>Formoso Garden Club</td>
<td>Formoso, KS</td>
</tr>
<tr>
<td>Lincoln County</td>
<td>The Radish Patch of Lincoln County</td>
<td>Lincoln, KS</td>
</tr>
<tr>
<td>Marshall County</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Mitchell County</td>
<td>North Campus Community Garden</td>
<td>Beloit, KS</td>
</tr>
<tr>
<td>Ottawa County</td>
<td>Bennington Community Garden</td>
<td>Bennington, KS</td>
</tr>
<tr>
<td>Republic County</td>
<td>Harvest Community Garden</td>
<td>Belleville, KS</td>
</tr>
<tr>
<td>Saline County</td>
<td>Church Community Organic Garden</td>
<td>Salina, KS</td>
</tr>
<tr>
<td>Washington County</td>
<td>Linn Community Garden</td>
<td>Linn, KS</td>
</tr>
<tr>
<td></td>
<td>Washington PRIDE Committee Community Garden</td>
<td>Washington, KS</td>
</tr>
</tbody>
</table>

### Hunting, Fishing and Food Foraging

In addition to home gardening, households may also supplement their food supply by hunting, fishing or foraging for edible wild plants. Unfortunately, no data are available describing the extent to which these sources are a routine part of the community food supply.

### Food System Infrastructure

Most food consumed by humans does not go directly from harvest in the field or livestock operation to a home dinner table. It is far more common to have many intermediate steps in transporting, processing, packaging and distribution before foods reach retail outlet shelves or restaurant kitchens. Once there, most foods undergo additional preparation before being eaten by consumers.

In the conventional food system, most foods are not sold and consumed in the communities where the products originate. Instead, farm products are produced in larger quantities and sold to processors that may be long distances from the farm. Processors, in turn, sell and ship their finished products to distributors and wholesalers, who then sell products to retail stores or restaurants. By the time the food reaches the consumer’s plate, it may have traveled thousands of miles and changed hands numerous times.

### WHAT IS THE FOOD SYSTEM?

The combination of all processes and infrastructures needed to feed people typically falls into three primary categories:

**AGRICULTURE**
- Growing
- Harvesting
- Processing

**MARKET PREP**
- Packaging
- Distribution
- Transportation

**CONSUMER USE**
- Marketing
- Consumption
- Disposal

Image Source: http://charlestonorwig.com/
Food Processing

Meats
The limited number of meat processing facilities in Kansas is frequently cited as a barrier to local meat production by smaller scale or family farms. Under federal law, inspection standards in a state facility must be “equal to” those of federally inspected operations. The main difference between state and federal plants is that, by law, state inspected meats can only be sold within the state. In other words, meat products processed at state plants cannot enter commerce across state lines, which includes online sales, mail orders and other sales methods wherein meats are shipped out of state. Meat products processed at federal plants, on the other hand, may be sold across state lines, on the Internet and via mail order.

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>Company</th>
<th>City</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clay County</td>
<td>Dieck’s Inc./Clay Center Locker</td>
<td>Clay Center</td>
<td>Slaughter, processing, retail, red meat</td>
</tr>
<tr>
<td>Cloud County</td>
<td>Duis Meat Processing</td>
<td>Concordia</td>
<td>Slaughter, retail, red meat</td>
</tr>
<tr>
<td></td>
<td>Glasco Meat Processing</td>
<td>Glasco</td>
<td>Retail, red meat</td>
</tr>
<tr>
<td>Dickinson County</td>
<td>First Choice Meats, Inc.</td>
<td>Herington</td>
<td>Processing, red meat, retail</td>
</tr>
<tr>
<td>Ellsworth County</td>
<td>Ellsworth Packing, Inc.</td>
<td>Ellsworth</td>
<td>Retail, red meat</td>
</tr>
<tr>
<td>Jewell County</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Lincoln County</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Marshall County</td>
<td>Welch Brothers Meat Co.</td>
<td>Frankfort</td>
<td>Slaughter, processing, red meat</td>
</tr>
<tr>
<td></td>
<td>Frankfort Meat Processors, Inc.</td>
<td>Frankfort</td>
<td>Processing, red meat, retail</td>
</tr>
<tr>
<td></td>
<td>Beattie Locker</td>
<td>Beattie</td>
<td></td>
</tr>
<tr>
<td>Mitchell County</td>
<td>Heartland Choice Meats, Inc.</td>
<td>Beloit</td>
<td></td>
</tr>
<tr>
<td>Ottawa County</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Republic County</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Saline County</td>
<td>Smoky River Meats</td>
<td>Salina</td>
<td>Retail, red meat</td>
</tr>
<tr>
<td>Washington County</td>
<td>Bob’s Locker Plant</td>
<td>Washington</td>
<td>Slaughter, processing, red meat</td>
</tr>
</tbody>
</table>

Manufacturing
No manufacturers were identified from searches of the data sources utilized in producing this report.

Distribution, Warehouses, and Wholesale Suppliers
The Schwan Food Company is a distributor based in the City of Salina. The 105,000 square foot facility serves a buffer between manufacturing and shipping. Schwan’s Pizza Plant is also a supplier located in Salina.

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>Distributor</th>
<th>City</th>
<th>Sector</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saline County</td>
<td>Stellar Distribution</td>
<td>Salina</td>
<td>Wholesale trade – Nondurable Goods</td>
<td>Groceries, General Line business/industry</td>
</tr>
<tr>
<td></td>
<td>Hoosier Food Service, Inc.</td>
<td>Salina</td>
<td>Food products - Wholesale</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>Frito-Lay, Inc.</td>
<td>Salina</td>
<td>Food products - Wholesale</td>
<td>Groceries</td>
</tr>
</tbody>
</table>

Infrastructure to Support Local Food Farmer/Producers
One of the most frequently-cited barriers to increasing sales of locally-grown foods to businesses and institutions within a community is the challenge of aggregating foods produced in small quantities by small-scale producers and adding the processing and packaging that is needed to transform the raw products into forms and quantities that are better-matched to the needs of those potential purchasers. Many smaller-scale farmers lack on-farm capacity for washing and packaging fruits and vegetables, and few have the food safety certifications that may be required by institutional buyers. Institutional purchasers need the convenience of being able to fill all their needs with purchases from a small number of vendors; procuring products from multiple farms is cumbersome and time consuming. Some institutional food purchasers have
become heavily reliant upon pre-processed foods like baby carrots or pre-cut apple slices, and no longer have access to the staff and equipment that would be necessary to process and prepare raw foods in-house.

To address this gap between small-scale producers and larger-scale potential purchasers, some form of centralized aggregation, processing, order fulfillment and distribution system may be indicated. Many communities have recognized that the market for locally-produced foods will be limited until this infrastructure gap is adequately addressed. Some communities have undertaken feasibility studies to explore options for creating food hubs to meet the needs. Food hubs fill the gap between small to intermediate-scale local food producers and larger commercial or institutional purchasers by aggregating and packaging farm products and providing a single sales point for purchasers interested in procuring local foods. Many also provide technical assistance to farmers on subjects such as food safety or assessment of market needs, and they may also provide some light processing and packaging.

In Kansas, two food hub feasibility studies have been completed in northeastern Kansas. Development of a regional food hub operating under the name Fresh Farm HQ has begun operations. The organization is structured as a member-owned co-op, and currently has ten producer/owners. The food hub serves as an intermediary marketing and distribution broker, coordinating aggregation of foods produced by small-scale farms and providing businesses interested in purchasing locally-grown foods with a centralized purchasing system. Additional services provided by the food hub organization include assistance with crop/stock planning, food safety planning, bulk packaging supply, and technical assistance and training.

A feasibility study for a regional food hub in North Central Kansas was also conducted in 2017.

Support for Value-Added Food Producers

For individuals or businesses wanting to develop and sell value-added food products, a number of support resources are available in the region.

Education and Technical Assistance

Kansas State University Value Added Foods programs provide assistance in developing value-added food products, meat products and bakery products. Their services include product and process development, shelf-life evaluation, nutrition labeling, and chemical and microbiological analysis and evaluation.

K-State is the only school in the United States that offers a four-year Bachelor of Science degree in Bakery Science and Management. The Bakery Science research laboratories include a modern pilot-scale bakery, and various analytical labs for testing ingredients, dough, and finished products.

The American Institute of Baking (now known as AIB International) in Manhattan as founded in 1919 as a technology and information transfer center for bakers and food processors. The original mission was to "put science to work for the baker", a theme that has expanded yet remains central to their programs, products, and services. The Institute’s staff includes experts in the fields of baking production, experimental baking, cereal science, nutrition, food safety and hygiene.
Community/Incubator Kitchens

Would-be entrepreneurs who would like to produce and sell value-added food products are often faced with challenges of how to meet food safety regulations and requirements without investing large sums of capital to acquire equipment and an appropriate kitchen workspace. Community or incubator kitchens, which offer certified kitchen space and commercial-grade food preparation equipment on a rental basis provide small-scale startup businesses with an affordable option for producing their food products.

The Kansas Department of Agriculture (KDA) has developed an Incubator Kitchen Resource Guide to provide critical information about incubator resources throughout the state of Kansas. Although the KDA only lists Kitchen 4 Hire, a shared kitchen facility located in Salina, as the only facility of its kind in the 12-county region, there are likely to be a number of other privately-owned commercial-grade kitchen facilities located in churches, schools and community centers in the region. Some of these may be willing to negotiate with individuals seeking kitchen access to allow leased use of kitchen facilities during otherwise idle time periods.

The Retail Food Environment

The food that is available in our environment and the manner in which it is presented to us exert strong influences on our eating choices. No matter how well-intentioned and knowledgeable a person might be, maintaining healthy eating behaviors and supporting a local food system can be difficult if healthy and local food options are not readily available, accessible, convenient or affordable in the community. When we consider the fact that, at times, an abundance of less healthy or non-local food options is more abundant, easier to find and cheaper to buy, we better understand the challenges individual consumers face when choosing what to buy and eat. Even when consumers are deliberately trying to maintain healthy diets, a barrage of subtle and not-so-subtle cues and messages in the food environment may derail their good intentions. Factors as varied as product placement and pricing, the words used to describe a menu offering, plate sizes, and ambient lighting in the dining environment have all been shown through research to influence eating choices and behaviors (Wansink, 2014).

The term ‘food environment’ describes the array of food options and environmental influences within a neighborhood or community. The U.S. Centers for Disease Control and Prevention (U.S. Centers for Disease Control and Prevention, 2016) defines the food environment as:

- The physical presence of food that affects a person’s diet,
- A person’s proximity to food store locations,
- The distribution of food stores, food service, and any physical entity by which food may be obtained, or
- A connected system that allows access to food.

Both the private and public sectors shape our food environment. Businesses seek to locate in neighborhoods where they have the best chances of making a profit. Restaurants and grocery stores remain where they find a reliable customer base. For local government and public agencies, zoning regulations influence where different types of commercial businesses can locate, while procurement and purchasing decisions can influence what foods are available in places like schools and city parks.

The factors that shape our food environment range from common to quite subtle factors:

- Cultural influences, and familiarity with various foods
- Knowledge and food preparation skills
- The physical availability to access food
- Access to cooking and food preparation facilities
- Time constraints
- Where various stores and food outlets are located
- The pricing of healthy or local food offerings
- Product placement on store shelves
- Plate size in restaurants
- The words used to describe a menu offering

Each of these factors, and many more, come into play as consumers select the food that they eat.
**Grocery Stores**

Traditionally, most families have purchased the majority of their food for home use at community grocery stores. That tradition is changing, however, as more large-scale ‘big-box’ stores like Walmart and Target devote significant sections of their store floor space to grocery items, and smaller convenience and discount stores also expand their offerings of food items. Even pharmacies are expanding their selection of grocery items.

Data from the proprietary InfoUSA market analysis database generated the following counts of retail food businesses operating in the region in 2017:

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>Supercenters</th>
<th>Grocery Stores</th>
<th>Meat Markets</th>
<th>Fruit &amp; Veg Markets</th>
<th>Convenience Stores</th>
<th>Dollar Stores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clay County</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Cloud County</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Dickinson County</td>
<td>0</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>13</td>
<td>3</td>
</tr>
<tr>
<td>Elsworth County</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Jewell County</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Lincoln County</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Marshall County</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Mitchell County</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Ottawa County</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Republic County</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Saline County</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>22</td>
<td>3</td>
</tr>
<tr>
<td>Washington County</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Region</td>
<td>4</td>
<td>27</td>
<td>6</td>
<td>1</td>
<td>69</td>
<td>19</td>
</tr>
</tbody>
</table>

The map below illustrates the number of grocery stores per 100,000 population. Grocery stores are defined as supermarkets and smaller grocery stores primarily engaged in retailing a general line of food, such as canned and frozen foods; fresh fruits and vegetables; and fresh and prepared meats, fish, and poultry. Included are delicatessen-type establishments. Convenience stores and large general merchandise stores that also retail food, such as supercenters and warehouse club stores are excluded. This indicator is relevant because it provides a measure of healthy food access and environmental influences on dietary behaviors.

*For more discussion of access to grocery stores in the North Central Kansas region, please refer to the Food Access section of this report.*
Farmers’ Markets

Farmers’ markets offer consumers the opportunity to purchase fresh, locally-grown foods directly from the farmers that produced them. This direct marketing approach is beneficial to both farmers and consumers in many ways. Farmers may retain more of the sales value for their products than they would if products were marketed through conventional food distribution systems, and farmers’ markets provide an ideal outlet for products that are only available in small quantities. Consumers gain access to products that are freshly-harvested, and the opportunity to build relationships with the farmers that grow their food. Interest in farmers’ markets has grown in recent years, both nationally and across Kansas.

The table below lists the farmers’ markets currently in operation in the NCKFC region. The map indicates their locations.

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>Farmers’ Market</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clay County</td>
<td>Clay Center Farmers’ Market</td>
<td>Clay Center, KS</td>
</tr>
<tr>
<td>Cloud County</td>
<td>Clyde Farmers’ Market</td>
<td>Clyde, KS</td>
</tr>
<tr>
<td></td>
<td>Concordia Farmers’ Market</td>
<td>Concordia, KS</td>
</tr>
<tr>
<td>Dickinson County</td>
<td>Abilene Farmers’ Market</td>
<td>Abilene, KS</td>
</tr>
<tr>
<td>Ellsworth County</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>Jewell County</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>Lincoln County</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>Marshall County</td>
<td>Marysville Farmers’ Market</td>
<td>Marysville, KS</td>
</tr>
<tr>
<td></td>
<td>Frankfort Farmers’ Market</td>
<td>Frankfort, KS</td>
</tr>
<tr>
<td>Mitchell County</td>
<td>Solomon Valley Farmers’ Market Association</td>
<td>Beloit, KS</td>
</tr>
<tr>
<td>Ottawa County</td>
<td>Minneapolis Farmers’ Market</td>
<td>Minneapolis, KS</td>
</tr>
<tr>
<td>Republic County</td>
<td>Belleville Main Street Farmers’ Market</td>
<td>Belleville, KS</td>
</tr>
<tr>
<td>Saline County</td>
<td>9th and Grand Farmers’ Market</td>
<td>Salina, KS</td>
</tr>
<tr>
<td></td>
<td>Salina Farmers’ Market</td>
<td>Salina, KS</td>
</tr>
<tr>
<td></td>
<td>Downtown Farmers’ Market</td>
<td>Salina, KS</td>
</tr>
<tr>
<td>Washington County</td>
<td>Clifton Farmers’ Market</td>
<td>Clifton, KS</td>
</tr>
<tr>
<td></td>
<td>Washington Farmers’ Market</td>
<td>Washington, KS</td>
</tr>
</tbody>
</table>

Farmers’ Markets Location, Dec. 2017, USDA
Consumer Eating Behaviors and Food Purchases

Eating Behaviors

Across the nation, and in Kansas, studies have repeatedly found that consumers’ diets are not well-aligned with current dietary recommendations. According to recent information from the Dietary Guidelines for Americans (U.S. Department of Health and Human Services, and U.S. Department of Agriculture), about three-quarters of Americans consume too little fruits, vegetables, dairy products and oils, and more than half eat more than the recommended amounts of grains and protein foods.

Dietary Intakes Compared to Recommendations.
Percent of the U.S. Population Ages 1 Year & Older
Who Are Below, At, or Above Each Dietary Goal or Limit

Fruit and Vegetable Consumption

At the state and county levels, information about consumers’ fruit and vegetable consumption are monitored as part of the annual Behavioral Risk Factor Surveillance System (BRFSS) survey. State-level results are available for most years; county-level results are available only in years where the survey sample was enlarged sufficiently to produce reliable estimates for most counties in Kansas. The way in which questions about fruit and vegetable intake were asked and reported was changed between 2009 and 2010, which makes comparisons between pre-2010 and later-year results invalid.
BFRSS data for Kansas shows that in 2009, 81.4 percent of adults were consuming fruits and vegetables less than five times per day. In 2015, 22.3 percent of adults were consuming vegetables less than one time per day and 43.7 percent of adults were consuming fruits less than one time per day.

The chart below lists available fruit and vegetable consumption data for the NCKFC region. Although county-level data is not available for many of the counties in the region, the following section provides additional insights into associated purchasing behaviors.

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>2009 Data</th>
<th>2015 Data</th>
<th>2015 Data</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% Adults Consuming Fruits and Vegetables &lt;5 times per day</td>
<td>% Adults Consuming Vegetables &lt;1 time per day</td>
<td>% Adults Consuming Fruits &lt;1 time per day</td>
</tr>
<tr>
<td>Clay County</td>
<td>81.7%</td>
<td>No data</td>
<td>No data</td>
</tr>
<tr>
<td>Cloud County</td>
<td>81.2%</td>
<td>No data</td>
<td>No data</td>
</tr>
<tr>
<td>Dickinson County</td>
<td>84.7%</td>
<td>21.0%</td>
<td>51.7%</td>
</tr>
<tr>
<td>Ellsworth County</td>
<td>85.9%</td>
<td>No data</td>
<td>No data</td>
</tr>
<tr>
<td>Jewell County</td>
<td>No data</td>
<td>No data</td>
<td>No data</td>
</tr>
<tr>
<td>Lincoln County</td>
<td>No data</td>
<td>No data</td>
<td>No data</td>
</tr>
<tr>
<td>Marshall County</td>
<td>71.7%</td>
<td>28.8%</td>
<td>46.0%</td>
</tr>
<tr>
<td>Mitchell County</td>
<td>79.4%</td>
<td>No data</td>
<td>No data</td>
</tr>
<tr>
<td>Ottawa County</td>
<td>No data</td>
<td>No data</td>
<td>No data</td>
</tr>
<tr>
<td>Republic County</td>
<td>No data</td>
<td>No data</td>
<td>No data</td>
</tr>
<tr>
<td>Saline County</td>
<td>84.1%</td>
<td>22.3%</td>
<td>42.9%</td>
</tr>
<tr>
<td>Washington County</td>
<td>63.9%</td>
<td>No data</td>
<td>No data</td>
</tr>
</tbody>
</table>

**Food Expenditures**

Data from the national Consumer Expenditure Survey provide regional estimates of consumer spending patterns for an array of goods and services. A proprietary company, Synergos Technologies, has combined those regional estimates with local-level demographic data to produce statistical estimates of consumer spending patterns at the county level.

In 2016, residents in the NCKFC region spend an estimated $358,915,648 annually on all food purchases. Of total food purchases, approximately $135,499,932 is spent on foods prepared away from home as compared to $223,415,715 spent on foods prepared at home. As illustrated in the chart below, the majority (42 percent) of food purchased for home use is on snacks and other foods and only 17 percent is spent on fruits and vegetables. Given this data, fruit and vegetable purchases are calculated at an average of 85 cents per person, per day.

---

**TOTAL ESTIMATED EXPENDITURES ON FOOD HOME USE, 2016**

- Bakery and Cereal Products: $42,465,034 (17%)
- Meats, Poultry, Fish, and Eggs: $105,566,570 (42%)
- Dairy Products: $23,365,985 (9%)
- Fruits and Vegetables: $48,863,521 (20%)
- Snacks and Other Foods: $30,326,530 (12%)

The Community Commons data system has acquired proprietary data on household food expenditures and compiled that information into rankings that compare food expenditures at the census tract level. Data are available for total expenditures for foods prepared at home; fruit and vegetable expenditures as a percent of total food-at-home expenditures, and soft drink consumption per household. Results for all census tracts in the 12-county region are displayed in the three maps that follow.

### North Central Kansas region population, 2016

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>North Central Kansas region population, 2016</td>
<td>136,248</td>
</tr>
<tr>
<td>Total county food spending</td>
<td>$358,915,648</td>
</tr>
<tr>
<td>Total annual food spending per capita</td>
<td>$2,634.28</td>
</tr>
<tr>
<td>Total daily food spending per capita</td>
<td>$7.22</td>
</tr>
<tr>
<td>Total spending on fruits and vegetables (at home)</td>
<td>$42,465,034</td>
</tr>
<tr>
<td>Total annual fruit and vegetable spending per capita</td>
<td>$311.67</td>
</tr>
<tr>
<td>Daily per capita spending on fruits and vegetables</td>
<td>$0.87</td>
</tr>
</tbody>
</table>

*Data Source: Synergos Technologies, Inc. forecasts Business Decision data system
Dining Away from Home
Restaurants comprise another important component in most community food systems. The share of total food dollars that U.S. households spend on food prepared away from home has risen steadily since the 1970s. A number of factors have contributed to this trend, including more women employed outside of the home, higher household incomes, and more affordable and convenient fast food outlets (USDA ERS, 2016). While foods prepared away from home are not necessarily less healthy than home-cooked meals, research conducted by USDA has found that meals and snacks based on food prepared away from home contained more calories per eating occasion than those based on at-home food. Away-from-home food was also higher in nutrients that Americans overconsume (such as fat and saturated fat) and lower in nutrients that Americans under-consume (calcium, fiber, and iron). (USDA ERS, 2016)

Residents of the NCKFC region have limited choices and options when they choose to eat foods prepared away from home, and data suggest that they may spend more time eating at home as a result. Business listings from the proprietary InfoUSA database indicate that there was a total of 242 eating and drinking establishments operating in the region in 2016. Results from the National Consumer Expenditure Survey estimate that regional residents spend approximately 37 percent of their food budgets on food prepared away from home ($2,297.82/household/year) for a total of $135,499,932 in annual spending (Synergos Technologies, Inc.).

Fast Food Restaurants
Just as a lack of access to healthy food options may influence individual’s eating behaviors, an over-abundance of less healthy food options may also negatively influence eating choices. Menu offerings at fast food restaurants are frequently filled with unhealthy choices that are high in calories, fats and salt levels. (Fast food restaurants are defined as limited-service food establishments where patrons generally order or select items and pay before eating.) Environments in which there are high concentrations of fast food restaurants may tempt consumers toward unhealthy food choices, especially if access to healthier food options is limited or more difficult.

In 2016, there were 90 fast-food outlets located within the borders of the NCKFC region. On a per person basis, the density of fast food outlets in the region is lower than the Kansas and U.S. averages.

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>Total Population</th>
<th>Number of Establishments</th>
<th>Establishments, rate per 100,000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region</td>
<td>136,622</td>
<td>90</td>
<td>65.88</td>
</tr>
<tr>
<td>Kansas</td>
<td>2,853,118</td>
<td>2,036</td>
<td>71.36</td>
</tr>
<tr>
<td>United States</td>
<td>312,846,570</td>
<td>233,392</td>
<td>74.6</td>
</tr>
</tbody>
</table>

Data Source: U.S. Census Bureau, County Business Patterns
Additional data analysis by CARES, 2016
Comparison of Agricultural Production to Consumer Spending

For most Kansans, very little of the food that they consume has been produced locally. The vast majority of food consumed by residents in the NCKFC region is produced outside of the county. At a regional level, the quantities of beef and pork produced exceed consumption by community residents. Reported quantities of dairy products, fruit and vegetables, and poultry and eggs being produced locally are less than the amounts being consumed by residents of the region. Less than one percent of total sales by farms in the region were direct sales to individuals.

<table>
<thead>
<tr>
<th>North Central Kansas region</th>
<th>Consumer Expenditures on Food, 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Households</td>
<td>$12,462,414</td>
</tr>
<tr>
<td>Poultry/Eggs</td>
<td>$10,470,704</td>
</tr>
<tr>
<td>Pork</td>
<td>$15,535,338</td>
</tr>
<tr>
<td>Beef</td>
<td>$42,964,030</td>
</tr>
<tr>
<td>Fruits &amp; Vegetables</td>
<td>$107,381,622</td>
</tr>
<tr>
<td>Milk/Dairy</td>
<td></td>
</tr>
<tr>
<td>59,906</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>North Central Kansas region</th>
<th>Farm Products Sold, 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Farm Product Sales</td>
<td>$1,561,968,000</td>
</tr>
<tr>
<td>Poultry/Eggs</td>
<td>$136,000+</td>
</tr>
<tr>
<td>Hogs &amp; Pigs</td>
<td>$39,016,000+</td>
</tr>
<tr>
<td>Cattle &amp; Calves</td>
<td>$344,257,000+</td>
</tr>
<tr>
<td>Fruits &amp; Berries &amp; Nuts</td>
<td>$93,000+</td>
</tr>
<tr>
<td>Vegetables</td>
<td>$98,000+</td>
</tr>
<tr>
<td>Milk/Dairy</td>
<td>$18,762,000+</td>
</tr>
<tr>
<td>Direct Sales to Individuals</td>
<td>$456,000+</td>
</tr>
</tbody>
</table>

* + = Actual Sales Totals are higher than reflected here, due to suppressed data at county level

Source: Consumer expenditure estimates based upon regional expenditure patterns from Consumer Expenditure Survey and local population figures. Farm sales from 2012 U.S. Census of Agriculture.

Nutrition-related Health Conditions

Overweight and Obesity (Adult)

Maintaining a healthy weight is an important factor in maintaining overall health. Body weight is closely associated with two primary factors --- nutrition and physical activity. Excess body weight, which occurs when caloric intake exceeds the number of calories expended, places individuals at increased risk for many health issues, including heart disease, diabetes, some forms of cancers, and joint problems and physical disability. Obesity has become a widespread problem in the United States, with rates steadily increasing over the last several decades.

Rates of overweight and obesity in the population are routinely measured as part of the national Behavioral Risk Factor Surveillance System coordinated by the U.S. Centers for Disease Control and Prevention (CDC) and state health agencies. In Kansas, the Kansas Department of Health and Environment periodically includes an expanded sample size to make it possible to produce county-level results.

For the measures of overweight and obesity, survey respondents are asked to self-report their height and weight. In 2015, data was only available for three of the 12 counties in the NCKFC region. The results are listed in the table below.

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>% of Adults who are Overweight (BMI between 25.0 and 30.)</th>
<th>% of Adults who are Obese (BMI &gt;30)</th>
<th>% of Adults who are Overweight or Obese</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dickinson County</td>
<td>34.5%</td>
<td>27.0%</td>
<td>61.5%</td>
</tr>
<tr>
<td>Marshall County</td>
<td>38.1%</td>
<td>30.0%</td>
<td>68.1%</td>
</tr>
<tr>
<td>Saline County</td>
<td>36.8%</td>
<td>37.5%</td>
<td>74.3%</td>
</tr>
<tr>
<td>Kansas</td>
<td>33.8%</td>
<td>34.2%</td>
<td>68%</td>
</tr>
</tbody>
</table>

Data Source: Kansas Department of Health and Environment, Kansas Behavioral Risk Factor Surveillance Survey
Other Diet-related Health Conditions
The Behavioral Risk Factor Surveillance Survey also asks survey participants whether or not they have ever been told by a doctor or other health professional that they have any of several health conditions. Partial data was available for three of the 12 counties in the NCKFC region.

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>% of Adults Diagnosed with Diabetes</th>
<th>% of Adults Tested and Diagnosed with High Cholesterol</th>
<th>% of Adults Diagnosed with Hypertension</th>
<th>% of Adults who had Angina or Coronary Heart Disease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dickinson County</td>
<td>7.6%</td>
<td>33.5%</td>
<td>31.1%</td>
<td>No data</td>
</tr>
<tr>
<td>Marshall County</td>
<td>13.7%</td>
<td>41.7%</td>
<td>37.8%</td>
<td>No data</td>
</tr>
<tr>
<td>Saline County</td>
<td>8.6%</td>
<td>39.8%</td>
<td>32.9%</td>
<td>2.7%</td>
</tr>
<tr>
<td>Kansas</td>
<td>9.7%</td>
<td>37.4%</td>
<td>31.6%</td>
<td>3.8%</td>
</tr>
</tbody>
</table>

Data Source: Kansas Department of Health and Environment, Kansas Behavioral Risk Factor Surveillance Survey, 2015

Access to Healthy Foods
Access to healthy food options is essential to healthy eating habits which are, in turn, essential to good health. When we talk about access to healthy food options, there are two considerations. First, a consumer must be able to physically get to places where healthy foods are available for purchase. Second, the consumer must be able to afford to buy the healthier food options or must be able to obtain assistance that enables her/him to do so. These are minimum requirements for food access. In addition, it is desirable that community residents have access to foods that are culturally appropriate and are able to access food through socially acceptable means that respect and preserve individuals’ dignity.

Physical Access
Physical access to healthy food options is commonly measured by considering two factors - the distance that the consumer must travel to the nearest retail grocery store and the consumer’s access to reliable transportation to travel to that closest store. In urban areas, a distance of one mile or less to the nearest grocery store is commonly considered to be adequate; in rural areas a distance of 10 miles or less is commonly considered adequate. The proportion of low-income household in an area is often used as a proxy indicator of less access to reliable transportation. Geographic areas in which a substantial portion of the population is low income (a poverty rate of 20 percent or higher), and one-third or more of households live further than one mile (in urban areas) or ten miles (in rural areas) from the closest full-service grocery stores are designated as ‘food deserts’ to denote challenges with getting to a grocery store that offers a variety of healthy food options.

Population with Limited Food Access
Based upon data from 2015, analysis by the U.S. Department of Agriculture found that six census tracts located within the NCKFC region met the definition of a food desert (low income and low access at a distance of one mile in urban areas or 10 miles in rural area). Two tracts were located in Cloud County; one tract was located in Jewell County; and three tracts were located in Saline County. The total population residing in those census tracts was 21,355 (15.6% percent of the regional population).

Looking at the access question in a slightly different way, the table on the following orders the counties by number and percent of residents in the region that were both low-income (a family income equal to or less than 200 percent of the Federal Poverty Level) and had low access to a supermarket or large grocery store.

Locations of retail grocery stores in 2017 are also shown on the food desert map that follows.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dickinson County</td>
<td>19,162</td>
<td>6,445</td>
<td>900</td>
<td>13.96%</td>
</tr>
<tr>
<td>Marshall County</td>
<td>9,853</td>
<td>2,997</td>
<td>592</td>
<td>19.75%</td>
</tr>
<tr>
<td>Saline County</td>
<td>55,334</td>
<td>17,321</td>
<td>3,635</td>
<td>20.99%</td>
</tr>
<tr>
<td>Region</td>
<td>136,622</td>
<td>43,368</td>
<td>10,946</td>
<td>25.24%</td>
</tr>
<tr>
<td>Jewell County</td>
<td>2,963</td>
<td>1,168</td>
<td>298</td>
<td>25.51%</td>
</tr>
<tr>
<td>Ottawa County</td>
<td>5,957</td>
<td>1,694</td>
<td>438</td>
<td>25.86%</td>
</tr>
<tr>
<td>Republic County</td>
<td>4,705</td>
<td>1,561</td>
<td>438</td>
<td>28.06%</td>
</tr>
<tr>
<td>Mitchell County</td>
<td>6,230</td>
<td>2,110</td>
<td>601</td>
<td>28.48%</td>
</tr>
<tr>
<td>Kansas</td>
<td>2,903,820</td>
<td>874,995</td>
<td>253,257</td>
<td>28.94%</td>
</tr>
<tr>
<td>Clay County</td>
<td>8,203</td>
<td>2,266</td>
<td>751</td>
<td>33.14%</td>
</tr>
<tr>
<td>Ellsworth County</td>
<td>6,331</td>
<td>1,749</td>
<td>644</td>
<td>36.82%</td>
</tr>
<tr>
<td>Cloud County</td>
<td>9,191</td>
<td>3,444</td>
<td>1,291</td>
<td>37.49%</td>
</tr>
<tr>
<td>Lincoln County</td>
<td>3,121</td>
<td>886</td>
<td>388</td>
<td>43.79%</td>
</tr>
<tr>
<td>Washington County</td>
<td>5,572</td>
<td>1,727</td>
<td>970</td>
<td>56.17%</td>
</tr>
</tbody>
</table>

Data Source: Community Commons

Affordability of Healthy Food Options

Affordability is the second component of access to healthy foods. It does little good to have an abundant supply of healthy food options if consumers in the community lack the financial means with which to purchase the food. The term ‘food insecurity’ is commonly used in the United States to describe the lack of consistent access to enough food to maintain a healthy lifestyle, because of a lack of resources. Households that express anxiety or uncertainty about their ability to consistently obtain enough food are termed ‘food-insecure’. Rates of household food insecurity are measured annually at the national and state level as a component of the Current Population Survey administered by the U.S. Census Bureau.

At the National level, rates of household food insecurity increased sharply with the onset of the economic recession and have remained elevated since that time. Only since 2012 have the national rates of food insecurity begun to decrease slightly. In Kansas, rates of food insecurity exceeded national rates prior to the onset of the 2008 recession and increased further with the recession’s onset. Although national food insecurity rates appear to have decreased slightly in recent years, rates in Kansas have been slower to begin decreasing.

![Household Food Insecurity Rates, KS vs. US 3-year Rolling Averages](image)

Statistical estimates of county-level food insecurity rates have been produced by the national food assistance organization Feeding America. The most recent estimates, from 2016, show that approximately 12.7 percent of residents in the NCKFC region (17,470 individuals) were food-insecure. About one in five children (19.5 percent, or 6,290 children) in the region lived in households which were food-insecure. With an average regional meal cost of $2.98, the total annual food budget shortfall in the region is estimated at $8,746,000.

Although risk for food-insecurity is highest among lower-income households, food insecurity is not always limited to the very poor. Many working families with incomes above the poverty level still struggle to meet basic needs such as food, housing, medical care, transportation and childcare on their earnings. The Feeding America estimates suggest that one-third of food-insecure households in the region had income levels high enough that they would not be eligible for any of the food assistance programs sponsored by the Federal Government. Similarly, just under one-third (31 percent) of food-insecure children in the region live in families where the household income would be too high for them to be eligible for free or reduced-price school meals or for assistance through the Supplemental Nutrition Program for Women, Infants and Children (WIC) program. For these families, when help is needed, it must come from privately-funded assistance programs like Harvesters, or other food assistance or emergency meal programs in the community.
### Food Insecurity: Snapshot (2016)

#### Overall and Child Food Insecurity Rate, 2016

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>Food Insecure Individuals, Total</th>
<th>Overall Food Insecurity Rate</th>
<th>Geographic Area</th>
<th>Food Insecure Children, Total</th>
<th>Child Food Insecurity Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ottawa County</td>
<td>660</td>
<td>11.0%</td>
<td>Ellsworth County</td>
<td>210</td>
<td>17.4%</td>
</tr>
<tr>
<td>Lincoln County</td>
<td>360</td>
<td>11.6%</td>
<td>Marshall County</td>
<td>410</td>
<td>17.6%</td>
</tr>
<tr>
<td>Marshall County</td>
<td>1,160</td>
<td>11.6%</td>
<td>Kansas</td>
<td>131,130</td>
<td>18.3%</td>
</tr>
<tr>
<td>Washington County</td>
<td>660</td>
<td>11.7%</td>
<td>Ottawa County</td>
<td>270</td>
<td>18.9%</td>
</tr>
<tr>
<td>Ellsworth County</td>
<td>760</td>
<td>11.9%</td>
<td>Lincoln County</td>
<td>140</td>
<td>19.3%</td>
</tr>
<tr>
<td>Clay County</td>
<td>1,000</td>
<td>12.0%</td>
<td>Washington County</td>
<td>250</td>
<td>19.3%</td>
</tr>
<tr>
<td>Republic County</td>
<td>570</td>
<td>12.0%</td>
<td>Mitchell County</td>
<td>270</td>
<td>19.4%</td>
</tr>
<tr>
<td>Mitchell County</td>
<td>790</td>
<td>12.6%</td>
<td>Dickinson County</td>
<td>910</td>
<td>19.5%</td>
</tr>
<tr>
<td>Regional Average</td>
<td>17,470</td>
<td>12.7%</td>
<td>Regional Average</td>
<td>6,290</td>
<td>19.5%</td>
</tr>
<tr>
<td>Kansas</td>
<td>375,360</td>
<td>12.9%</td>
<td>Saline County</td>
<td>2,670</td>
<td>19.8%</td>
</tr>
<tr>
<td>Saline County</td>
<td>7,320</td>
<td>13.2%</td>
<td>Clay County</td>
<td>410</td>
<td>19.9%</td>
</tr>
<tr>
<td>Cloud County</td>
<td>1,250</td>
<td>13.5%</td>
<td>Republic County</td>
<td>190</td>
<td>20.0%</td>
</tr>
<tr>
<td>Dickinson County</td>
<td>2,530</td>
<td>13.6%</td>
<td>Cloud County</td>
<td>420</td>
<td>20.3%</td>
</tr>
<tr>
<td>Jewell County</td>
<td>410</td>
<td>13.7%</td>
<td>Jewell County</td>
<td>140</td>
<td>23.4%</td>
</tr>
</tbody>
</table>

*Data Source: Feeding America, Map the Meal Gap, 2016*

*Assistance eligibility is determined based on household income of the food insecure households relative to the maximum income-to-poverty ratio for assistance programs (SNAP, WIC, school meals, CSFP and TEFAP).

#### Food Program Assistance Eligibility, 2016

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>Food-Insecure Population, Total</th>
<th>% of Food-Insecure Population Ineligible for Assistance</th>
<th>Geographic Area</th>
<th>Food-Insecure Children, Total</th>
<th>% of Food-Insecure Children Ineligible for Assistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jewell County</td>
<td>410</td>
<td>15.0%</td>
<td>Jewell County</td>
<td>140</td>
<td>2%</td>
</tr>
<tr>
<td>Cloud County</td>
<td>1,250</td>
<td>20.0%</td>
<td>Cloud County</td>
<td>420</td>
<td>9%</td>
</tr>
<tr>
<td>Republic County</td>
<td>570</td>
<td>26.0%</td>
<td>Republic County</td>
<td>190</td>
<td>11%</td>
</tr>
<tr>
<td>Lincoln County</td>
<td>360</td>
<td>27.0%</td>
<td>Lincoln County</td>
<td>140</td>
<td>21%</td>
</tr>
<tr>
<td>Marshall County</td>
<td>1,160</td>
<td>28.0%</td>
<td>Mitchell County</td>
<td>270</td>
<td>26%</td>
</tr>
<tr>
<td>Dickinson County</td>
<td>2,530</td>
<td>32.0%</td>
<td>Ellsworth County</td>
<td>210</td>
<td>30%</td>
</tr>
<tr>
<td>Jewell County</td>
<td>410</td>
<td>15.0%</td>
<td>Washington County</td>
<td>250</td>
<td>33%</td>
</tr>
<tr>
<td>Regional Average</td>
<td>17,470</td>
<td>33.0%</td>
<td>Regional Average</td>
<td>6,290</td>
<td>31%</td>
</tr>
<tr>
<td>Mitchell County</td>
<td>790</td>
<td>34.0%</td>
<td>Dickinson County</td>
<td>910</td>
<td>33%</td>
</tr>
<tr>
<td>Saline County</td>
<td>7,320</td>
<td>35.0%</td>
<td>Saline County</td>
<td>2,670</td>
<td>34%</td>
</tr>
<tr>
<td>Kansas</td>
<td>375,360</td>
<td>36.6%</td>
<td>Kansas</td>
<td>131,130</td>
<td>34%</td>
</tr>
<tr>
<td>Ottawa County</td>
<td>660</td>
<td>39.0%</td>
<td>Ottawa County</td>
<td>270</td>
<td>41%</td>
</tr>
<tr>
<td>Washington County</td>
<td>660</td>
<td>39.0%</td>
<td>Washington County</td>
<td>660</td>
<td>39.0%</td>
</tr>
<tr>
<td>Ellsworth County</td>
<td>760</td>
<td>41.0%</td>
<td>Ellsworth County</td>
<td>760</td>
<td>41.0%</td>
</tr>
<tr>
<td>Clay County</td>
<td>1,000</td>
<td>42.0%</td>
<td>Clay County</td>
<td>410</td>
<td>35%</td>
</tr>
<tr>
<td>Marshall County</td>
<td>410</td>
<td>35%</td>
<td>Marshall County</td>
<td>410</td>
<td>35%</td>
</tr>
<tr>
<td>Ottawa County</td>
<td>270</td>
<td>41%</td>
<td>Ottawa County</td>
<td>270</td>
<td>41%</td>
</tr>
</tbody>
</table>

*Data Source: Feeding America, Map the Meal Gap, 2016*

### Food Assistance Programs

In the United States, and in Kansas, a patchwork quilt of public- and private-sector programs and agencies provide food assistance to low-income families in need. Aid is provided through a variety of mechanisms, including prepared meals at schools, distribution of foods for home preparation, and vouchers or electronic benefits that may be used to purchase grocery items. These programs play a vital role in preventing food insecurity from progressing to full-blown hunger and malnutrition.
Children Eligible for Free/Reduced Price School Meals
For many low-income families, school meals provide an important source of food for children. In addition to lunches, many schools also offer breakfasts and some offer after-school snack or supper programs. Children from households where earnings are less than 130 percent of the Federal Poverty Level are eligible to receive free meals; those from households where income is between 130 and 185 percent of the poverty level qualify to purchase meals at reduced prices. In NCKFC region public schools, free or reduced-price school meal eligibility rates among K-12 students enrolled for the 2017-2018 range from 41 to 58 percent. Ellsworth County had the lowest rate of qualified students at 40.59 percent while Jewell County had the highest rate at 57.83 percent. In comparison, 48.5 percent of all Kansas K-12 students were eligible for free or reduced-price school meals during the same timeframe (Kansas Action for Children, n.d.).

Summer Meals for School-aged Children
For families that rely upon free or reduced-price school meals to help feed their children, summer recess periods may create additional food hardship. The federally-sponsored Summer Food Service Program is designed to help fill that need. Under this program, all children aged 18 years and younger may receive free meals (usually lunches) at participating community sites located in areas where at least half of children qualify for free or reduced-price meals during the school year. The chart below lists summer feeding program sites in the NCKFC region during the summer of 2017.

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>Number of Sites</th>
<th>Site Location(s)</th>
<th>Total Food Insecure Children in County (2016)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clay County</td>
<td>2</td>
<td>Clay Center, KS</td>
<td>410</td>
</tr>
<tr>
<td>Cloud County</td>
<td>1</td>
<td>Clyde, KS</td>
<td>420</td>
</tr>
<tr>
<td>Dickinson County</td>
<td>3</td>
<td>Abilene, KS</td>
<td>910</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Solomon, KS</td>
<td></td>
</tr>
<tr>
<td>Ellsworth County</td>
<td>1</td>
<td>Lorraine, KS</td>
<td>210</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Hollyrod, KS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Wilson, KS</td>
<td></td>
</tr>
<tr>
<td>Jewell County</td>
<td>---</td>
<td>---</td>
<td>140</td>
</tr>
<tr>
<td>Lincoln County</td>
<td>2</td>
<td>Lincoln, KS</td>
<td>140</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Beverly, KS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Sylvan Grove, KS</td>
<td></td>
</tr>
<tr>
<td>Marshall County</td>
<td>1</td>
<td>Frankfort, KS</td>
<td>410</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Marysville, KS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Waterville, KS</td>
<td></td>
</tr>
<tr>
<td>Mitchell County</td>
<td>---</td>
<td>---</td>
<td>270</td>
</tr>
<tr>
<td>Ottawa County</td>
<td>---</td>
<td>---</td>
<td>270</td>
</tr>
<tr>
<td>Republic County</td>
<td>1</td>
<td>Belleville, KS</td>
<td>190</td>
</tr>
<tr>
<td>Saline County</td>
<td>11</td>
<td>Salina, KS</td>
<td>2,670</td>
</tr>
<tr>
<td>Washington County</td>
<td>1</td>
<td>Clifton, KS</td>
<td>250</td>
</tr>
</tbody>
</table>

Data Sources: Kansas Department of Education, 2017; Feeding America, Map the Meal Gap, 2016

Supplemental Nutrition Assistance Program (SNAP)
The SNAP program, formerly referred to as ‘food stamps’, is a federally-funded program that provides qualifying low-income families with monthly benefits in the form of a debit card that can be used to purchase foods for home use. Benefits may also be used to purchase seeds or plants to be used for growing food at home. Households must have incomes below 130 percent of the Federal Poverty level (approximately $31,500 for a family of four) and meet other eligibility guidelines to qualify for benefits.
Most college students are not eligible to receive assistance through the SNAP program, even though their incomes may be low enough to meet the eligibility guidelines. According to the USDA Food and Nutrition Service, able-bodied students age 18 through 49 who are enrolled in college or other institutions of higher learning at least half time must meet the following conditions to qualify for assistance:

- Taking care of a dependent child
- Working at least 20 hours per week, or
- Are participating in any of several specified work training programs (USDA 2015).

Many households that would be eligible to receive snap benefits do not apply and participate in the program. There are many reasons, including stigma of participation, burdensome paperwork associated with application, and a lack of understanding of eligibility requirements. Participation rates vary considerably between states, ranging from 51 to 100 percent in 2013. Compared to other states, SNAP participation rates (the number of participants divided by the number of eligible) in Kansas have historically been low. The U.S. Department of Agriculture estimated that in 2013, the SNAP participation rate in Kansas was 71 percent, ranking Kansas 40th among the states (Cunnyham, 2016).

During state fiscal year 2017 (July 2016 to June 2017), an average of 10,785 residents in the NCKFC region received SNAP benefits each month. The number of SNAP participants in the region has declined since reaching a high in Fiscal Year 2013 – these declines are similar to what has happened across Kansas in the same time period. Average monthly benefits were approximately $107.30 per participant during fiscal year 2017; the SNAP program provided a total of $13,886,947 in food purchasing dollars to low-income families in the region during 2017.

SNAP benefits may only be redeemed at retail locations that have been approved by the USDA as SNAP retail vendors. As of December 2017, there were 126 SNAP retailers operating in the region. In addition to grocery stores, participating SNAP retailers included dollar stores, convenience stores, and meat lockers.

The Special Supplemental Nutrition Program for women, Infants and Children (WIC)
The Special Supplemental Nutrition Program for Women, Infants, and Children– better known as the WIC Program– is a federally-funded program that serves to safeguard the health of low-income (household incomes up to 185 percent of the Federal Poverty Level) women, infants, and children up to age 5 who are at nutritional risk by providing nutritious foods to supplement their diets, information on healthy eating, and referrals to health care. Program participants are given monthly...
coupons or vouchers that may be redeemed at participating retail locations for specified foods. The program serves low-income pregnant, post-partum, and breastfeeding mothers as well as infants and children age 0 through 4 years. Foods that may be purchased with WIC vouchers include milk, juice, cereals, cheese, eggs, fruits and vegetables (fresh, canned or frozen), whole-grain bread, canned fish, beans, peanut butter, baby foods, and baby formula.

Approximately 2,448 women and children in the NCKFC region participated in the WIC program each month during 2017 (Kansas Health Matters, 2017). The average monthly number of participants in the WIC program in the region has decreased in recent years; this trend is similar to those at the state and national levels. There are 30 retail grocery vendors, in the region where WIC participants may use their vouchers to obtain food.

The Emergency Food Assistance Program
The Emergency Food Assistance Program (TEFAP) is a Federally-sponsored program that provides free foods to low-income households. TEFAP food is shipped five to six times per year to participating organizations for distribution. Participant organizations determine when and how often food is distributed. The foods may include canned vegetables, fruit, juice, meat, cereal, peanut butter, nonfat dry milk, and pasta. Each shipment provides a minimum of four and a maximum of 10 foods per household.

Persons who work but have low income, as well as those who do not work, are eligible for this program. Individuals seeking assistance from the TEFAP program must apply in their home county, provide proof of their amount of income and household size (if asked), and must sign a form stating that they qualify for the program. Participants may pick up food at only one location in their community.

There are currently three TEFAP distribution locations in the region.

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>City</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clay County</td>
<td>Clay Center</td>
<td>Elks Lodge</td>
</tr>
<tr>
<td></td>
<td>Longford</td>
<td>Longford Bethel United Methodist Church</td>
</tr>
<tr>
<td></td>
<td>Wakefield</td>
<td>Neighbors N Need</td>
</tr>
<tr>
<td>Cloud County</td>
<td>Concordia</td>
<td>First United Methodist Church</td>
</tr>
<tr>
<td>Dickinson County</td>
<td>Abilene</td>
<td>Abilene Area Food &amp; Clothing Center</td>
</tr>
<tr>
<td></td>
<td>Herington</td>
<td>First Christian Church</td>
</tr>
<tr>
<td></td>
<td>Solomon</td>
<td>Solomon Housing Authority</td>
</tr>
<tr>
<td>Ellsworth County</td>
<td>Ellsworth</td>
<td>Assembly of God of Ellsworth</td>
</tr>
<tr>
<td></td>
<td>Wilson</td>
<td>Wilson Senior Center</td>
</tr>
<tr>
<td></td>
<td>Esbon</td>
<td>City of Esbon</td>
</tr>
<tr>
<td></td>
<td>Formoso</td>
<td>Formosa Pride</td>
</tr>
<tr>
<td></td>
<td>Jewell</td>
<td>Jewell Ministerial Union</td>
</tr>
<tr>
<td></td>
<td>Mankato</td>
<td>Mankato Ministerial Alliance</td>
</tr>
<tr>
<td>Lincoln County</td>
<td>Sylvan Grove</td>
<td>Sylvan Senior Center</td>
</tr>
<tr>
<td></td>
<td>LaCygne</td>
<td>LaCygne United Methodist Church</td>
</tr>
<tr>
<td>Marshall County</td>
<td>Marysville</td>
<td>Marshall County Agency on Aging</td>
</tr>
<tr>
<td>Mitchell County</td>
<td>Hunter</td>
<td>Grace Chapel Methodist Church</td>
</tr>
<tr>
<td></td>
<td>Cawker City</td>
<td>Knights of Columbus - Cawker City</td>
</tr>
<tr>
<td>Ottawa County</td>
<td>Ada</td>
<td>Ada Senior Citizens</td>
</tr>
<tr>
<td></td>
<td>Tescott</td>
<td>American Legion Auxiliary</td>
</tr>
<tr>
<td></td>
<td>Delphos</td>
<td>First Presbyterian Church - Delphos</td>
</tr>
<tr>
<td></td>
<td>Minneapolis</td>
<td>Minneapolis Student Council</td>
</tr>
<tr>
<td>Republic County</td>
<td>Bennington</td>
<td>United Church of Bennington</td>
</tr>
<tr>
<td>Saline County</td>
<td>Belleville</td>
<td>Republic Co Ministerial Alliance</td>
</tr>
<tr>
<td>Washington County</td>
<td>Salina</td>
<td>Sunrise Presbyterian Church</td>
</tr>
</tbody>
</table>
Senior Farmers’ Market Nutrition Program
The Senior Farmers’ Market Nutrition Program offers low-income seniors in participating locations checks or vouchers that can be used to purchase locally-grown fresh fruits and vegetables, honey, or herbs at participating farmers’ markets or farm stands. Seniors are eligible to receive checks if their individual income is less than $1,800/month and their age is 60 years or older. Seniors participating in the Commodity Supplemental Food Program (CSFP) or The Emergency Food Assistance Program (TEFAP) automatically qualify for the Kansas Senior Farmers Market Nutrition Program. During the 2016 summer season, each participating senior in Kansas received a book of checks that could be redeemed for up to $30 in purchases.

Private-sector Food Assistance
Food-insecure households that are not qualify for Federally-sponsored food assistance programs such as SNAP or free school meals (because their incomes are too high, or they do not meet other eligibility criteria) must rely upon private-sector charitable organizations for help. In addition, many low-income families who do receive government food assistance find that the benefits are not sufficient to meet all of their food needs and seek to supplement those benefits with aid from charitable organizations.

Federal and state policy changes in recent years have tightened eligibility requirements and reduced benefits for many government-sponsored food assistance programs, resulting in increased numbers of people seeking charitable help to meet their food needs.

In addition to agencies that provide food assistance or meals on-site, a number of community organizations partner with Harvesters Community Food Network to host monthly food distributions through mobile food pantry operations.

Food Waste, Recycling and Recovery
Food waste is a significant problem in the United States. USDA estimates that nearly one-third (31 percent) of the available food supply at the retail and consumer levels went to waste in 2010. This equates to 133 billion pounds of wasted food and does not include on-farm losses or losses between the farm and the retailer (Buzby, 2014). The U.S. Environmental Protection Agency (EPA) estimated that food waste accounted for 21 percent of municipal solid waste in 2011, with nearly all (97 percent) of that waste going to landfills or incinerators.

Image Source: adapted from Environmental Protection Agency, 2012

Food waste represents significant loss of money and other resources invested in food production (land, water, labor, energy and agricultural chemicals) to produce food that does not end up feeding people. Food waste occurs at all steps along the food production cycle, from farm to table. Some of the common causes of food waste are:
Common Food Waste Causes

Farm Level
- Damage by insects, rodents, birds, or unfavorable weather conditions
- Edible crops left unharvested due to diminishing returns for additional production
- Overplanting due to difficulty estimating customer demand

Farm-to-Retail Level
- Rejection due to food safety standards or regulation
- Out-grading of blemished or imperfect foods
- Spillage and damage, improper storage
- Byproducts from food processing

Retail Level
- Dented cans, damaged packaging
- Unpurchased seasonal food items
- Spillage, breakage, bruising, inadequate storage, equipment malfunctions
- Culling of blemished or imperfect foods to meet consumer demand
- Overstocking or overpreparing

Consumer Level
- Spillage, breakage, inadequate storage
- Confusion about “use-by”, and “best before” dates resulting in food being discarded when still safe to eat
- Consumer demand for high cosmetic standards
- Lack of knowledge about preparation, appropriate portion sizes
- Consumer tastes, attitudes and preferences leading to plate waste

Fruits and vegetables account for a large share of food loss, with more than half of what is grown being lost to waste. Milk and meat products have the lowest loss ratios (Gunders, August 2012).

Although food loss occurs at all steps in the food production chain, consumer waste accounts for the largest share. According to a report issued by the Natural Resources Defense Council, Americans throw away about 25 percent of the food that they buy. The estimated annual cost of food waste for a family of four is between $1,350 and $2,275 (Gunders, August 2012).
Reducing food waste offers many benefits to a community and its residents, including financial savings, preservation of natural resources, reduced demand on waste management systems and landfills, and increased amounts of potentially wasted food diverted to feed individuals at risk for hunger. When foods or food by-products are not safe or appropriate for human consumption, they may still be usable as animal feed. Composting of food scraps and spoiled foods recovers some value from the waste stream by producing a rich soil amendment that can be used in gardens to reduce the need for chemical fertilizers. The EPA has developed a Food Recovery Hierarchy that assigns preferential order to various strategies for reducing food waste (right).
Local Estimates of Food Waste

Community-level data on food waste are not generally available. It is, however, still possible to derive an estimate of local food waste by assuming that the local patterns are similar to those at the national level. Multiplying county population numbers by national per capita food waste estimates suggest that nearly 40 million pounds of food would be wasted annually in the NCKFC region, with an estimated value of $50.7 million, as shown in the table below.

<table>
<thead>
<tr>
<th>Estimated level of consumer-level food waste in the United States and in the North Central Kansas region</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Per-person basis (national)</strong>*</td>
</tr>
<tr>
<td>----------------------------------</td>
</tr>
<tr>
<td>North Central KS region estimate**</td>
</tr>
</tbody>
</table>

*National figures drawn from USDA, Economic Research Service, 2010 ERS Loss-Adjusted Food Availability

**County population estimate based upon 2013-2017 American Community Survey

Economic Impact of the Food System

Food and food production are big business in Kansas having significant impact on the Kansas economy, both at the state and local levels. According to the Kansas Department of Agriculture, the agricultural, food and food processing business sectors in the NCKFC region employ nearly 18,000 people and contribute an estimated $4.15 billion to the regional economy each year.

There are a number of measures that determine the importance of various economic data. These measures include direct, indirect, and induces effects; value added; gross regional product (GRP); and output.

- **Direct effects** capture the contribution from agricultural and food products.
- **Indirect effects** capture the economic benefit from farms and agricultural businesses purchasing inputs from supporting industries within the state.
- **Induced effects** capture the benefits created when employees of farms, agricultural businesses, and the supporting industries spend their wages on goods and services within the state.
- **Value added** is the summation of labor income, indirect business taxes, and other property income.
- **GRP** is the summation of final demand of households, government expenditures, capital, and exports **minus** imports and institutional sales.
- **Output** is the summation of intermediate inputs and value added.

Based on the most recent IMPLAN data available (2016) adjusted for 2018, there were more than 20 agriculture, food, and food processing sectors in the region supporting 11,411 jobs with a total direct output of $3.3 billion. Including indirect and induced effects, total jobs supported rises to 17,915. Altogether, these sectors provide approximately $4.2 billion to the regional economy. Another important metric used to calculate importance of sectors in an economy is their value added as a percentage of GRP. Total value added by the sectors was approximately $1.2 billion (Kansas Department of Agriculture, 2018).

### Agriculture, Food, and Food Processing Sector Contribution in the North Central Kansas Region (2018)

<table>
<thead>
<tr>
<th>Impact Type</th>
<th>Total Regional Employment</th>
<th>Total Regional Value Added</th>
<th>Total Regional Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Effect</td>
<td>11,411.8</td>
<td>$764,824,955</td>
<td>$3,324,694,094</td>
</tr>
<tr>
<td>Indirect Effect</td>
<td>3,959.0</td>
<td>$287,055,863</td>
<td>$543,237,184</td>
</tr>
<tr>
<td>Induced Effect</td>
<td>2,517.8</td>
<td>$171,536,790</td>
<td>$307,728,953</td>
</tr>
<tr>
<td>Total Effect</td>
<td>17,915.4</td>
<td>$1,201,233,809</td>
<td>$4,148,660,231</td>
</tr>
</tbody>
</table>

Data Source: Kansas Department of Agriculture, Kansas Agriculture’s Economic Impact, 2018

Data illustrating various economic measures related to the NCKFC food system are included in this section.
Farm Sales
During 2012, NCKFC regional farms reported total sales of farm products valued at approximately $1.45 billion. Crops accounted for 65 percent of total sales. The per-farm average market value of farm products sold by regional farms was $206,252 in 2012.

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>Farms, 2012</th>
<th>Total Sales</th>
<th>Crop Sales</th>
<th>Livestock Sales</th>
<th>Average per farm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clay County</td>
<td>541</td>
<td>$115,868,000</td>
<td>$80,502,000</td>
<td>$35,366,000</td>
<td>$214,174</td>
</tr>
<tr>
<td>Cloud County</td>
<td>461</td>
<td>$80,042,000</td>
<td>$67,590,000</td>
<td>$12,453,000</td>
<td>$173,628</td>
</tr>
<tr>
<td>Dickinson County</td>
<td>1,011</td>
<td>$157,051,000</td>
<td>$82,393,000</td>
<td>$74,658,000</td>
<td>$155,342</td>
</tr>
<tr>
<td>Ellsworth County</td>
<td>435</td>
<td>$51,634,000</td>
<td>$34,476,000</td>
<td>$17,158,000</td>
<td>$118,699</td>
</tr>
<tr>
<td>Jewell County</td>
<td>453</td>
<td>$136,479,000</td>
<td>$105,290,000</td>
<td>$31,188,000</td>
<td>$301,277</td>
</tr>
<tr>
<td>Lincoln County</td>
<td>431</td>
<td>$63,510,000</td>
<td>$43,230,000</td>
<td>$20,280,000</td>
<td>$147,355</td>
</tr>
<tr>
<td>Marshall County</td>
<td>796</td>
<td>$127,917,000</td>
<td>$104,099,000</td>
<td>$23,817,000</td>
<td>$160,699</td>
</tr>
<tr>
<td>Mitchell County</td>
<td>415</td>
<td>$153,497,000</td>
<td>$87,948,000</td>
<td>$65,549,000</td>
<td>$369,873</td>
</tr>
<tr>
<td>Ottawa County</td>
<td>525</td>
<td>$99,031,000</td>
<td>$60,033,000</td>
<td>$38,988,000</td>
<td>$188,630</td>
</tr>
<tr>
<td>Republic County</td>
<td>575</td>
<td>$197,267,000</td>
<td>$115,977,000</td>
<td>$81,289,000</td>
<td>$343,072</td>
</tr>
<tr>
<td>Saline County</td>
<td>674</td>
<td>$84,424,000</td>
<td>$59,490,000</td>
<td>$24,934,000</td>
<td>$125,259</td>
</tr>
<tr>
<td>Washington County</td>
<td>732</td>
<td>$187,149,000</td>
<td>$99,499,000</td>
<td>$87,650,000</td>
<td>$255,668</td>
</tr>
<tr>
<td>Regional Total</td>
<td>7,049</td>
<td>$1,453,869,000</td>
<td>$940,527,000</td>
<td>$513,330,000</td>
<td>$206,252</td>
</tr>
</tbody>
</table>

Government Farm Payments
In addition to income from the sale of farm products, many farms receive payments from various federal government programs. In 2012, 5,372 NCKFC regional farms reported receiving federal government payments that totaled $50,445,000.

Consumer Expenditures on Food
Everyone must eat, and most households purchase the majority of their food. Food purchases represent a significant contribution to the local economy. Residents in the NCKFC region spend an estimated $358.9 million annually on food.

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>Total Spending</th>
<th>Spending on Food at Home</th>
<th>Spending on Food Away from Home</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clay County</td>
<td>$22,271,318</td>
<td>$13,955,322</td>
<td>$8,315,998</td>
</tr>
<tr>
<td>Cloud County</td>
<td>$22,606,504</td>
<td>$14,122,799</td>
<td>$8,483,705</td>
</tr>
<tr>
<td>Dickinson County</td>
<td>$51,187,744</td>
<td>$31,901,929</td>
<td>$19,285,818</td>
</tr>
<tr>
<td>Ellsworth County</td>
<td>$15,160,936</td>
<td>$9,448,719</td>
<td>$5,712,218</td>
</tr>
<tr>
<td>Jewell County</td>
<td>$8,339,048</td>
<td>$5,286,034</td>
<td>$3,053,019</td>
</tr>
<tr>
<td>Lincoln County</td>
<td>$8,068,961</td>
<td>$5,016,741</td>
<td>$3,052,211</td>
</tr>
<tr>
<td>Marshall County</td>
<td>$27,483,431</td>
<td>$17,570,927</td>
<td>$9,912,509</td>
</tr>
<tr>
<td>Mitchell County</td>
<td>$16,517,452</td>
<td>$10,259,788</td>
<td>$6,257,677</td>
</tr>
<tr>
<td>Ottawa County</td>
<td>$15,842,506</td>
<td>$9,617,223</td>
<td>$6,225,279</td>
</tr>
<tr>
<td>Republic County</td>
<td>$13,179,434</td>
<td>$8,399,786</td>
<td>$4,779,648</td>
</tr>
<tr>
<td>Saline County</td>
<td>$143,195,556</td>
<td>$88,292,477</td>
<td>$54,903,066</td>
</tr>
<tr>
<td>Washington County</td>
<td>$15,062,758</td>
<td>$9,543,970</td>
<td>$5,518,793</td>
</tr>
<tr>
<td>Regional Total</td>
<td>$358,915,648</td>
<td>$223,415,715</td>
<td>$128,446,691</td>
</tr>
</tbody>
</table>

Consumer Expenditures on Food
In addition to income from the sale of farm products, many farms receive payments from various federal government programs. In 2012, 5,372 NCKFC regional farms reported receiving federal government payments that totaled $50,445,000.

Consumer Expenditures on Food
Everyone must eat, and most households purchase the majority of their food. Food purchases represent a significant contribution to the local economy. Residents in the NCKFC region spend an estimated $358.9 million annually on food.

Annual Consumer Spending on Food, 2016

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>Total Spending</th>
<th>Spending on Food at Home</th>
<th>Spending on Food Away from Home</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clay County</td>
<td>$22,271,318</td>
<td>$13,955,322</td>
<td>$8,315,998</td>
</tr>
<tr>
<td>Cloud County</td>
<td>$22,606,504</td>
<td>$14,122,799</td>
<td>$8,483,705</td>
</tr>
<tr>
<td>Dickinson County</td>
<td>$51,187,744</td>
<td>$31,901,929</td>
<td>$19,285,818</td>
</tr>
<tr>
<td>Ellsworth County</td>
<td>$15,160,936</td>
<td>$9,448,719</td>
<td>$5,712,218</td>
</tr>
<tr>
<td>Jewell County</td>
<td>$8,339,048</td>
<td>$5,286,034</td>
<td>$3,053,019</td>
</tr>
<tr>
<td>Lincoln County</td>
<td>$8,068,961</td>
<td>$5,016,741</td>
<td>$3,052,211</td>
</tr>
<tr>
<td>Marshall County</td>
<td>$27,483,431</td>
<td>$17,570,927</td>
<td>$9,912,509</td>
</tr>
<tr>
<td>Mitchell County</td>
<td>$16,517,452</td>
<td>$10,259,788</td>
<td>$6,257,677</td>
</tr>
<tr>
<td>Ottawa County</td>
<td>$15,842,506</td>
<td>$9,617,223</td>
<td>$6,225,279</td>
</tr>
<tr>
<td>Republic County</td>
<td>$13,179,434</td>
<td>$8,399,786</td>
<td>$4,779,648</td>
</tr>
<tr>
<td>Saline County</td>
<td>$143,195,556</td>
<td>$88,292,477</td>
<td>$54,903,066</td>
</tr>
<tr>
<td>Washington County</td>
<td>$15,062,758</td>
<td>$9,543,970</td>
<td>$5,518,793</td>
</tr>
<tr>
<td>Regional Total</td>
<td>$358,915,648</td>
<td>$223,415,715</td>
<td>$128,446,691</td>
</tr>
</tbody>
</table>
Government Food Assistance Programs

Government-sponsored food assistance programs also provide a significant infusion of dollars into the local economy. Through either direct reimbursement for the cost of meals served (as in school meals) or providing consumers with additional money to spend on food purchases (SNAP and WIC benefits), those dollars support jobs and increase retail sales within the community. As those dollars circulate through the local community, they generate additional economic benefit. USDA economists estimate that each $5 in SNAP benefits infused into a community generates approximately $9 in economic activity.

Food-sector Employment

Food production, and food-related businesses also create jobs which employ community members and infuse money into the local economy. Data from the U.S. Bureau of Labor Statistics provide detailed information about the types of businesses operating in a location, the number of individuals employed by those businesses, and their earnings. As illustrated in the graph and tables below, average worker earnings in food-sector jobs vary significantly by the type of work. In Kansas, jobs in food manufacturing and grocery wholesale pay significantly better than jobs in grocery retail or food service businesses.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Clay County</td>
<td>$615,893</td>
<td>$646,934</td>
<td>$57,547</td>
<td>No data</td>
</tr>
<tr>
<td>Cloud County</td>
<td>$877,589</td>
<td>$949,539</td>
<td>$120,830</td>
<td>No data</td>
</tr>
<tr>
<td>Dickinson County</td>
<td>$1,725,707</td>
<td>$1,861,911</td>
<td>$72,107</td>
<td>No data</td>
</tr>
<tr>
<td>Ellsworth County</td>
<td>$332,160</td>
<td>$332,503</td>
<td>$36,711</td>
<td>No data</td>
</tr>
<tr>
<td>Jewell County</td>
<td>$177,414</td>
<td>$208,109</td>
<td>No data</td>
<td>No data</td>
</tr>
<tr>
<td>Lincoln County</td>
<td>$240,862</td>
<td>$292,186</td>
<td>No data</td>
<td>No data</td>
</tr>
<tr>
<td>Marshall County</td>
<td>$796,768</td>
<td>$852,270</td>
<td>$101,262</td>
<td>No data</td>
</tr>
<tr>
<td>Mitchell County</td>
<td>$318,622</td>
<td>$405,907</td>
<td>$37,544</td>
<td>No data</td>
</tr>
<tr>
<td>Ottawa County</td>
<td>$428,600</td>
<td>$490,709</td>
<td>$38,268</td>
<td>No data</td>
</tr>
<tr>
<td>Republic County</td>
<td>$255,836</td>
<td>$282,291</td>
<td>$43,658</td>
<td>No data</td>
</tr>
<tr>
<td>Saline County</td>
<td>$7,852,749</td>
<td>$8,278,558</td>
<td>$217,063</td>
<td>No data</td>
</tr>
<tr>
<td>Washington County</td>
<td>$264,747</td>
<td>$277,008</td>
<td>$15,090</td>
<td>No data</td>
</tr>
<tr>
<td>Regional Total</td>
<td>$13,886,947</td>
<td>$14,877,925</td>
<td>$740,081</td>
<td>---</td>
</tr>
</tbody>
</table>

Data Source: SNAP benefit disbursement from Kansas Department of Children and Families, Annual County Pocket Reports
SNAP redemption data derived from USDA FNS data tables

Data Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages
Equity Issues in the Food System

Health equity issues have received much attention from public health practitioners and philanthropic organizations in recent years. When closely scrutinized, health outcomes measures identify many situations where some segments of the population suffer poorer health outcomes related to issues of social disadvantage or inequity. Similarly, inequities can be identified in the food system, many of which may contribute to disparities in health outcomes. Aspects of the food system where equity issues are frequently identified are outlined briefly in this section. More detail on many of these issues is available in the main body of this report.

Farming and Food Production
- Access to land, capital and financing, especially for young or minority farmers
- Access to water rights
- Farmworker compensation and working conditions, particularly for field hands and immigrant workers

Food System Infrastructure
- Hazardous conditions in meat processing facilities, often employing immigrant or minority workers

Food Retail (processing, manufacturing, distribution)
- Low wages in retail grocery stores
- Low wages in food and beverage operations

Consumer Access to Healthy Food Options
- Underserved locations, food deserts – in urban areas, usually low-income areas. Rural residents may also be underserved and have challenges accessing healthy food options
- Pricing differentials, higher prices often in underserved communities
- Food insecurity (families that cannot afford to buy enough food, high-quality food) – rates of food insecurity are markedly higher for minority households, single parent households, disabled individuals
- Stigma, loss of dignity for individuals who participate in food assistance programs

These equity issues, and others not included in this list, will not apply equally to every community. Community-level issues will likely vary with the types of agriculture and food production in practice in the location, the types of food processing businesses in the area, and socio-demographic characteristics of the population such as racial/ethnic diversity, poverty rates, and educational attainment. In Kansas, the issues of safe working conditions and fair wages for fieldworkers are less salient because the vast majority of crop production is commodity crops that require less hands-on labor. In some parts of Kansas, however, working conditions and safety concerns at meat packing facilities are cause for concern. Many communities in Kansas have locations where residents lack physical access to retail stores that offer healthy foods, and all Kansas counties have community members who cannot afford to buy enough food to feed themselves and their families. The data included in this report describe some of the more widespread food equity issues in Kansas, including lack of access to grocery retail outlets, food insecurity, and low wages in some sectors of the food system.

Community-based Data Collection: Online Surveys and Focus Groups

Online Survey Process
During the months of June and July 2018, the North Central Kansas Food Council launched a survey within the 12-county region to collect additional data directly from a broad cross-section of local community members. A survey questionnaire was designed by the contracted consultant, working in collaboration with representatives of the Council. When the questions had been finalized, survey questionnaires were developed in both paper and electronic (online) formats.

The survey was open for approximately 10 weeks. Survey promotion took place through face-to-face platforms and online. North Central Regional Planning Commission utilized an intern to distribute paper surveys at county fairs and to local businesses and organizations in collaboration with key community partners such as K-State Research and Extension. North Central Kansas Food Council members also assisted with survey distribution in their respective communities. The link to the
An online survey was featured on the North Central Regional Planning Commission website where community members could easily access it. North Central Regional Planning Commission staff and a Council member entered data from paper surveys by hand. Data from surveys completed on paper forms were entered into the online survey system prior to analysis.

A total of 4,449 individuals from the 12-county region participated in the North Central Kansas Food Council Community Food Survey. The survey featured 20 questions across a range of topics. Of the total respondents, the following table highlights survey participation in the 12-county region.

<table>
<thead>
<tr>
<th>By Portion of Survey Responses</th>
<th>Top 3 Counties</th>
<th>Bottom 3 Counties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saline County (50.72%)</td>
<td>Clay County (2%)</td>
<td></td>
</tr>
<tr>
<td>Mitchell County (7.33%)</td>
<td>Ottawa County (3.13%)</td>
<td></td>
</tr>
<tr>
<td>Dickinson County (6.2%)</td>
<td>Lincoln County (3.65%)</td>
<td></td>
</tr>
</tbody>
</table>

Because the survey employed a non-random, convenience sampling approach, the results of the survey may not be representative of the county population as a whole. One way to increase likely representativeness of a convenience sample is to obtain a larger group of survey responses. Comparison of the demographic characteristics of survey respondents to the regional population suggest that the survey results may be somewhat under-representative of males and adults between 18 and 24 years of age as well as between 45 and 54 years of age.

Nevertheless, the results represent an important cross-section of community member perspectives and voices and contribute to an overall understanding of the food environment and community member needs in the region. Survey participants have provided many comments which provide valuable insights regarding their satisfaction with the current regional food environment and where they would like to see changes.

The following are highlights from the online survey. Note, however, that this does not include all question responses.

**Online Survey Summary for the NCKFC Region**

**Demographics**

- Respondent age: <25 years (5.8%); 25-44 years (35.5%); 45-64 years (35.1%); 65+ years (23.6%)
- Respondent sex: female (74%); male (26%)
- Respondent household sizes: 1-2 (55.4%); 3-4 (29.3%); 5 or more (15.3%).
- Approximately 78.6% of respondents live in a town as opposed to outside of city limits.
- Approximately 55.6% of respondents grew up in a different county.

**Food Access**

- Approximately 57.7% of respondents live less than 2 miles from a grocery store; approximately 73.4% live less than 5 miles away from a grocery store.
- Approximately 48.9% of respondents cited no issues accessing food.
  - Approximately 35% of respondents cited affordability as an issue.
  - Approximately 22.9% of respondents cited lack of fresh food selection as an issue.
- Approximately 84.5% of respondents cited they do not use public benefits or other strategies to acquire food.
  - Approx. 11% of respondents indicated SNAP or WIC utilization.
- When asked what preferred food access channels would be, the top five responses were:
  - one large supermarket (56.5%);
  - several small corner stores (53.7%);
  - community gardens that sell fruits and vegetables (14.5%); and
  - Dollar Store with fresh fruits, vegetables, and proteins (36.7%) or
• my own garden growing my own food (33.1%).

• Approximately 42.9% of respondents would be interested in subscribing to a delivery service for food grown or produced regionally.

Dietary Habits
• Only 1.5% and 3.6% of survey respondents eat the recommended 5 servings of fruits and vegetables, respectively, per day.
  o Approximately 49.9% or respondents eat 1 or fewer servings of fruit daily.
  o Approximately 33.7% of respondents eat 1 or fewer servings of vegetables daily.

Shopping Behaviors & Preferences
• Nearly half (45.5%) of survey respondents spend less than $300 on groceries per month.
• When asked where groceries are purchased, the top three responses were: supermarkets (71.3%); supercenters (64.9%); and independent, locally-owned grocery stores (41.7%).
  o Aldi’s was the most popular write-in
  o There were also several write-ins for growing and raising one’s own food
• Approximately 95.8% of respondents spend the majority of their grocery dollars at either a supermarket (47.3%), superstore (26%), or independent, locally-owned grocery store (22.5%).
• When asked about the most important considerations for purchasing food, the top four were:
  o freshness (85.2%);
  o affordability (80.4%);
  o variety (52.7%); and
  o healthy selection (41.7%).

Local Foods Economy
• Approximately 81.5% of survey respondents do not grow, raise, or produce food or food-based products for public sale.
  o Approximately 14.5% of respondents produce vegetables.
• Survey respondents agree or strongly agree that they would be more likely to purchase regionally grown or produced foods if...
  o They knew it was healthy for them (88.9%)
  o They knew it would benefit the local economy (92.3%)
  o They knew it was better for the environment (88.8%)
  o There was a wider variety of to choose from (91.4%)
  o They knew who grew it (77.8%)
  o They knew where they could purchase it (90.9%)

Communications
• When asked what the preferred communications channels for learning about local foods are, the top four responses were:
  o word of mouth (63.9%);
  o Facebook (47.3%);
  o flyers or bulletins (45.4%); and
  o newspaper (39.5%).
  o Online was a popular write-in

Online Survey Summary sans Saline County
Saline County residents accounted for half of all survey responses. Such a response rate skews overall results. The table below highlights survey participation with Saline County data removed.
The following is a summary of the online survey results with Saline County data removed.

**Demographics**
- Respondent age: <25 years (4.6%); 25-44 years (32.6%); 45-64 years (35.5%); 65+ years (27.3%)
- Respondent sex: female (74.8%); male (25.2%)
- Respondent household sizes: 1-2 (57.27%); 3-4 (29.41%); 5 or more (13.3%)
- Approximately 66.7% of respondents live in a town as opposed to outside of city limits.
- Approximately 52% of respondents grew up in a different county.

**Food Access**
- Approximately 48.6% of respondents live less than 2 miles from a grocery store; approximately 57.79% live less than 5 miles away from a grocery store.
- Approximately 30% of respondents live 10 or miles away from a grocery store.
- Approximately 43.9% of respondents cited no issues accessing food.
  - Approximately 34.7% of respondents cited affordability as an issue.
  - Approximately 34.6% of respondents cited lack of fresh food selection as an issue.
  - Popular write-ins also referred to poor quality of food and limited store hours.
- Approximately 88.8% of survey responses cited they do not use public benefits or other strategies to acquire food.
  - Approximately 6.5% of respondents indicated SNAP or WIC utilization.
- When asked what preferred food access channels would be, the top four responses were:
  - one large supermarket (54.9%);
  - several small corner stores (41.3%);
  - community gardens that sell fruits and vegetables (66.6%); or
  - my own garden growing my own food (35.1%).
- Approximately 45.4% of respondents would be interested in subscribing to a delivery service for food grown or produced regionally.

**Dietary Habits**
- Only 1.6% and 3.1% of survey respondents eat the recommended 5 servings of fruits and vegetables, respectively, per day.
  - Approximately 52.6% or respondents eat 1 or fewer servings of fruit daily.
  - Approximately 32.6% of respondents eat 1 or fewer servings of vegetables daily.

**Shopping Behaviors & Preferences**
- Nearly half (46.6%) of survey respondents spend less than $300 on groceries per month.
- When asked where groceries are purchased, the top three responses were: independent, locally-owned grocery stores (74.2%); supercenters (66.7%); and supermarkets (48%).
  - There were also several write-ins for growing and raising one's own food.
- Approximately 95.3% of respondents spend the majority of their grocery dollars at either an independent, locally-owned grocery store (43.7%); supercenter (31.2%); or supermarket (20.5%).
- When asked about the most important considerations for purchasing food, the top four were:
  - freshness (87.4%);
  - affordability (80.8%);
variety (55.6%); and
healthy selection (38.5%).

Local Foods Economy
• Approximately 77.3% of survey respondents do not grow, raise, or produce food or food-based products for public sale.
  o Approximately 17.6% of respondents produce vegetables.
• Survey respondents agree or strongly agree that they would be more likely to purchase regionally grown or produced foods if...
  o They knew it was healthy for them (89%)
  o They knew it would benefit the local economy (93.5%)
  o They knew it was better for the environment (87.8%)
  o There was a wider variety of to choose from (91.8%)
  o They knew who grew it (79.3%)
  o They knew where they could purchase it (91.5%)

Communications
• When asked what the preferred communications channels for learning about local foods are, the top four responses were:
  o word of mouth (65.8%);
  o Facebook (53%);
  o flyers or bulletins (47.6%); and
  o newspaper (45.6%).
  o Write-ins included: classes or presentations, information distributed by local organizations (i.e., public schools, health department, hospital) and the grocery store

Focus Group Process
To complement information gleaned from secondary data sources and the community survey, key community stakeholders within each of the 12 counties comprising the North Central Kansas Food Council were sought to participate in a focus group. Focus groups were organized by North Central Regional Planning Commission in collaboration with North Central Kansas Food Council members, and personal invitations were made. In at least one case, the focus group was advertised in the local newspaper. Participants were provided with a packet of information for review at least one week prior to the focus group. The packet included a copy of the full community survey results for their county; a summary of secondary data collected; and a one-page, double-sided information sheet of secondary data and community survey highlights.

Focus groups were facilitated by two consultants and lasted two hours. Participants were provided with the one-page information sheet of county data highlights, an agenda that included two additional questions for which to provide a written response, and name tents on which to not only indicate their name and food sector represented but also provide written responses to questions that would be asked during the focus group. In many cases, food and refreshments were provided as well. The objectives of the focus groups were to:

• ground-truth the survey data;
• create linkage between the local food system and the survey;
• enrich and deepen the assessment process and corresponding data collected; and
• engage community members.

Focus groups took place from August to November 2018 with a total of 112 participants across all 12 counties. Each focus group began with an overview of the food assessment process by North Central Planning Commission staff and discussion ground rules followed by a “warm-up” exercise where participants were asked what came to mind when thinking about their “local or regional food system.”
The focus group was conducted in three parts that focused on reactions to the community survey; the local food economy; and conclusions drawn. The following is a brief summary of focus group responses from participants.

**Part 1: Survey Reactions**

Reactions to survey data varied from county to county. Overall, however, focus group participants were surprised by the low-income rates in their county, low rates of fruit and vegetable consumption, and the amount of estimated food waste in the county. Focus participants were unsure as to how representative the data collected was of the entire county, that certain towns within the county may have had stronger representation. Several participants also felt that the survey results suggested that key sectors of the population had not been reached, including low-income and young families.

**Part 2: Economic Data**

Nearly all focus group participants did not feel that survey respondents’ preferences regarding regional food systems development was representative. Many felt that the responses reflected attitudes and not behaviors. In terms of supply chain awareness, the focus groups’ perception of both their own and the community’s knowledge was widespread. However, overall, participants felt that community member knowledge regarding production, processing, distribution, and marketing were generally low.

Focus group participants agreed that consumers’ primary concern is affordability and convenience, especially for those families who are low-income and in “survival mode” or those who are on fixed incomes. Furthermore, cultural upbringing may influence food preparation practices, including instant gratification. For this reason, home delivery service of pre-packaged meals provided by businesses like Hello Fresh and Blue Apron are an emerging trend. Consumers like to have a variety of foods readily available to them as well; however, offerings for novel food items may inconsistent and carrying such items can be a burden on small food retailers. Commodity crop production in Kansas also overshadows specialty crop production. Locally based farmers would need to know what consumer preferences are to determine whether there is a market that would offset the costs associated with specialty crop production.

**Part 3: Conclusions**

After rigorous discussion about their local food systems, participants felt that there was much work to be done and behavior changes are needed. However, there are disparities between what consumers desire and what is currently possible within the food system. It is acknowledged that influencing behavior change is incredibly challenging, and individuals must first be willing to make those changes. These changes can be facilitated by “meeting people where they are at”, making the healthy choice the easy choice, and involving more community stakeholders to gain the buy-in needed to facilitate changes.

When focus group participants were asked what they would like to change about their local food system, there were 97 total responses. These responses were aggregated for analysis, and seven themes emerged:

- **Create major and minor infrastructure for food system development and promotion.** Food system infrastructure is critical for operations that build the local food economy. Infrastructure may include major developments such as processing and aggregation facilities or minor developments such as community gardens and local grocery store delivery mechanisms.
- **Build a local food economy.** Keeping consumer dollars local contributes to the local tax base and stimulates communitywide development. Building the local food economy may include increasing the affordability of fresh foods by creating markets, increasing buying power at both the consumer and producer levels, and promoting “buy local” initiatives.
- **Policy strategies.** Food systems infrastructure is critical to building a local food economy, but decisions resulting in regulations or incentivization at the government level – whether local, state, or federal – can inhibit or facilitate action. This may include institutional purchasing, food sales tax, and community planning. These are just a few examples.
- **Consumer education.** Informing consumers of their options is an initial step toward making better decisions and eventual behavior change. This may include nutrition education, meal preparation, and financial literacy.
• **Stakeholder engagement and relationships.** Decision making is influenced by the interactions between and among community stakeholders. Cooperative purchasing, consumer – producer connections, and partnership with the food policy council are examples of stakeholder engagement and relationship strategies.

• **Strategic communications.** Communications targeted to specific stakeholder groups to influence action facilitate decision making for behavior change and buy-in. Marketing campaigns to raise awareness and developing stakeholder relationships require communications strategies.

• **Improve individual and organizational food system practices.** Behavior change ultimately leads to a change in practices, whether that is manifested in a shift in consumer perceptions and actions or emerges programmatically, for example. Changing production methods and some community development decisions may also evidence changes in practice.

Focus group responses may be categorized within multiple themes. These responses are included in the appendix. Of the 97 focus group participants responses...

- 29 responses were categorized into *create major and minor infrastructure for food system development and promotion* (29.9%)
- 18 responses were categorized into *build a local food economy* (18.6%)
- 19 responses were categorized into *policy strategy* (19.6%)
- 20 responses were categorized to *consumer education* (20.6%)
- 11 responses were categorized to *stakeholder engagement and relationships* (11.3%)
- 15 responses were categorized to *strategic communications* (15.5%)
- 34 responses were categorized to *improve individual and organizational food system practices* (35.1%)

Although focus group responses were categorized into emergent theme, a systems-based approach posits that each category is connected to one another. For example, local food systems infrastructure may be critical to the development of a local foods economy but may not be possible without policy. Policy development requires stakeholder engagement and relationships and strategic communications. Furthermore, these actions may require education and change in practices. Priority setting for food systems development planning at the county-level should consider the policy, systems, and environmental change recommendations emerging from these focus groups and the greater local communities.

**Conclusions**

The information presented in this report highlights many current strengths and gaps in the current food system for the North Central Kansas region. The region has a strong agricultural presence, with access to farmland and adequate water supplies. Although agriculture is predominantly focused on the production of grains, hay and beef, there are a promising, albeit small, number of smaller-scale producers growing and producing foods for direct sale to community residents. The presence of Kansas State University, the state’s land grant university, offers food producers and entrepreneurs in the region the opportunity to take advantage of a wealth of available scientific expertise and technical assistance. There is also access to retail grocery and farmers markets within the region.

Despite all of those strengths, however, there are still gaps and opportunities to improve and enhance the local food system. Many farmers are nearing retirement age without younger ones stepping in fill the void, and high land prices and low farm profitability present significant challenges to the small numbers of younger people who would like to become farmers. Local production of dairy products, poultry and eggs, and fruits and vegetables fall significantly short of local consumption volumes. The vast majority of community residents do not eat the recommended amounts of vegetables and fruits. Approximately 17,470 residents in the region are food-insecure (or struggle to get enough food), because they lack the money to buy it. National research suggests that as much of 40 percent of the food grown in the United States is wasted. If this pattern holds true in the region, more than 39.6 million pounds of food is wasted each year.

These are just a few examples of current assets and gaps; readers of this report will likely identify others. While this report does not address or include every possible measure related to the local food system, it has been structured to provide a
systems-level description that touches upon each of the major sectors within the food system, using data that are either readily available or could be collected with reasonable effort within the community setting. Because of that breadth of scope, the depth of information on any one subject is necessarily limited to prevent the assessment process and report from becoming totally unmanageable. It is likely that there will be some areas where the information included will generate interest or raise additional questions that are not answered by the brief topical summaries included in the report – those questions may identify areas the North Central Regional Planning Commission or the North Central Kansas Food Council will wish to conduct further exploration in the future.

Appendix
<table>
<thead>
<tr>
<th>What would you change about your local food system?</th>
<th>Focus Group Participant Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>42</td>
<td>Create central location like a hub or co-op</td>
</tr>
<tr>
<td>43</td>
<td>Create an educational center for nutrition and a community kitchen (connect with hub/coop)</td>
</tr>
<tr>
<td>44</td>
<td>Central place for incubator (include with community kitchen); find different entry point</td>
</tr>
<tr>
<td>45</td>
<td>Affordability</td>
</tr>
<tr>
<td>46</td>
<td>Accessibility</td>
</tr>
<tr>
<td>47</td>
<td>On-line local delivery (initiated by local grocery stores)</td>
</tr>
<tr>
<td>48</td>
<td>Infrastructure for delivery for institutional purchasing</td>
</tr>
<tr>
<td>49</td>
<td>Donation system for expired/dated food; create food waste policy</td>
</tr>
<tr>
<td>50</td>
<td>Affordability</td>
</tr>
<tr>
<td>51</td>
<td>Environment; recycling access; recycle grocer bags</td>
</tr>
<tr>
<td>52</td>
<td>State legislation</td>
</tr>
<tr>
<td>53</td>
<td>100% buy local</td>
</tr>
<tr>
<td>54</td>
<td>Availability</td>
</tr>
<tr>
<td>55</td>
<td>Convenience/meal prep/planning</td>
</tr>
<tr>
<td>56</td>
<td>Cooperative/CSA/group buying/consumer buying power</td>
</tr>
<tr>
<td>57</td>
<td>Delivery service</td>
</tr>
<tr>
<td>58</td>
<td>More growing your own</td>
</tr>
<tr>
<td>59</td>
<td>Education on food production to raise awareness, educate local production alternatives</td>
</tr>
<tr>
<td>60</td>
<td>Seasonality/regional/Kansas cuisine</td>
</tr>
<tr>
<td>61</td>
<td>Make lifestyle change</td>
</tr>
<tr>
<td>62</td>
<td>Organized collection of production</td>
</tr>
<tr>
<td>63</td>
<td>Need a local meat processor</td>
</tr>
<tr>
<td>64</td>
<td>Farm bill supportive of local healthy food and producers</td>
</tr>
<tr>
<td>65</td>
<td>Everyone would have education and awareness of health – food connection</td>
</tr>
<tr>
<td>66</td>
<td>Facilitate producers getting in touch with consumers</td>
</tr>
<tr>
<td>67</td>
<td>Change mentality and perception of shopping local and buying fresh</td>
</tr>
<tr>
<td>68</td>
<td>Increase knowledge to result in self-sufficiency</td>
</tr>
<tr>
<td>69</td>
<td>Educate to increase health awareness and personal responsibility to your health; start at a young age and stay consistent</td>
</tr>
<tr>
<td>70</td>
<td>Local markets and access in small communities</td>
</tr>
<tr>
<td>71</td>
<td>Make more affordable as in increase ability to purchase</td>
</tr>
<tr>
<td>72</td>
<td>Educate about cost vs. value</td>
</tr>
<tr>
<td>73</td>
<td>Educate about affordability</td>
</tr>
<tr>
<td>74</td>
<td>Increase access regardless of income</td>
</tr>
<tr>
<td>75</td>
<td>Keep more dollars here</td>
</tr>
<tr>
<td>76</td>
<td>Perception of we can't buy from you (as in schools)</td>
</tr>
<tr>
<td>77</td>
<td>Change the System of the world from discouraging local producer purchases</td>
</tr>
<tr>
<td>78</td>
<td>Make food and health a value!</td>
</tr>
<tr>
<td>79</td>
<td>Unify producers</td>
</tr>
<tr>
<td>80</td>
<td>Connect consumers of food system; educate on affordability</td>
</tr>
<tr>
<td>81</td>
<td>Connect producers with markets to make it more profitable</td>
</tr>
<tr>
<td>82</td>
<td>Make more affordable</td>
</tr>
<tr>
<td>83</td>
<td>Placement of markets centralized</td>
</tr>
<tr>
<td>84</td>
<td>With community planning create repetition with more community gardens and greencapes</td>
</tr>
<tr>
<td>85</td>
<td>Educate on seasonal markets</td>
</tr>
<tr>
<td>86</td>
<td>Help with financial literacy</td>
</tr>
<tr>
<td>87</td>
<td>Long term planning to get new customers to healthy food</td>
</tr>
<tr>
<td>88</td>
<td>Flow of people and food markets designed into community plan</td>
</tr>
<tr>
<td>89</td>
<td>Have entertainers at farmers markets, make it an event</td>
</tr>
<tr>
<td>90</td>
<td>Develop relationship between customer and producer</td>
</tr>
<tr>
<td>91</td>
<td>Include more people; give them a stake; if more people worked in food sector, this might raise awareness of issues</td>
</tr>
</tbody>
</table>
### What would you change about your local food system?

**Focus Group Participant Responses**

<table>
<thead>
<tr>
<th>Response</th>
<th>Create modern and fair food system development &amp; promotion</th>
<th>Build local food economy (500+ local, 1000+ state)</th>
<th>Consumer education</th>
<th>Stakeholder engagement and relationships</th>
<th>Policy strategy</th>
<th>Strategic communications</th>
<th>Improve food system practices – individual and organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>93 Internship programs with local farms and food stores</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>94 Develop relationship between customer and producer</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>95 Include more people; give them a stake; if more people worked in food sector, this might raise awareness of issues</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>96 Increase:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>o Culinary diversity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>o Sustainable family farms</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>o Understanding of market power of those in supply chain</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>o Accessibility – what barriers have we created that we can remove? (ease of access)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>97 CSA delivery</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><strong>TOTAL responses</strong></td>
<td>29</td>
<td>18</td>
<td>20</td>
<td>11</td>
<td>19</td>
<td>15</td>
<td>34</td>
</tr>
</tbody>
</table>

### References


Synergos Technologies, Inc. (n.d.). Business Decision Database; Retail Goods and Services Expenditures.


**Data Sources**

- Community Commons - [http://www.communitycommons.org/](http://www.communitycommons.org/)
- Feeding America, Map the Meal Gap - [http://map.feedingamerica.org/](http://map.feedingamerica.org/)
- Kansas Action for Children, via Kids Count - [http://datacenter.kidscount.org/data#USA/2/16/17,18,19,20,22,21,2720/char/0](http://datacenter.kidscount.org/data#USA/2/16/17,18,19,20,22,21,2720/char/0)
- Kansas Department of Children and Families, Public Assistance Reports - [http://www.dcf.ks.gov/services/ees/Pages/EESreports.aspx](http://www.dcf.ks.gov/services/ees/Pages/EESreports.aspx)
- Kansas Department of Children and Families, Annual County Packet Reports - [http://www.dcf.ks.gov/services/ees/Pages/EESreports.aspx](http://www.dcf.ks.gov/services/ees/Pages/EESreports.aspx)
- Kansas State Department of Education, Data and Reports - [http://www.ksde.org/Data-Reports](http://www.ksde.org/Data-Reports)
- InfoGroup USA, ReferenceUSA database, accessed through Public Library Subscription - [http://resource.referenceusa.com/](http://resource.referenceusa.com/)
- U.S. Census Bureau, American Community Survey - [https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml](https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml)
- U.S. Environmental Protection Agency, Sustainable Management of Food - [https://www.epa.gov/sustainable-management-food](https://www.epa.gov/sustainable-management-food)