



Sedgwick County Local Food System Assessment

Report prepared by K-State Research & Extension-Sedgwick County
Report produced by the Health & Wellness Coalition
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Sedgwick County Local Food System Assessment

EXECUTIVE SUMMARY

Opportunities for a thriving local food system are abundant in Sedgwick County. The county is home to an array of agricultural producers and processors, from small community gardens to some of the state's largest grain processing facilities.

Residents have abundant choices for food. They may visit a farmers' market, a specialty food store or a grocery store to stock their pantries. Or, they may live in an area where a convenience store is the only viable location to buy groceries – a situation influenced by transportation, time and money.

The county has seen a growing interest in local food. Grocery stores are stocking local produce, honey and meat, sometimes even featuring the producers. Families are searching for ways to eat healthy food more often.

Sedgwick and surrounding counties have a number of positive attributes that could support a robust local food system, including a diversified agricultural system and excellent soil resources.

The economics are clear as well. According to a report from the Health & Wellness Coalition using data from the Bureau of Labor Statistics, Sedgwick County residents spent just over \$1 billion on food in 2012. If just 5% of those were local food purchases, an estimated \$54.6 million would circulate through the county each year.



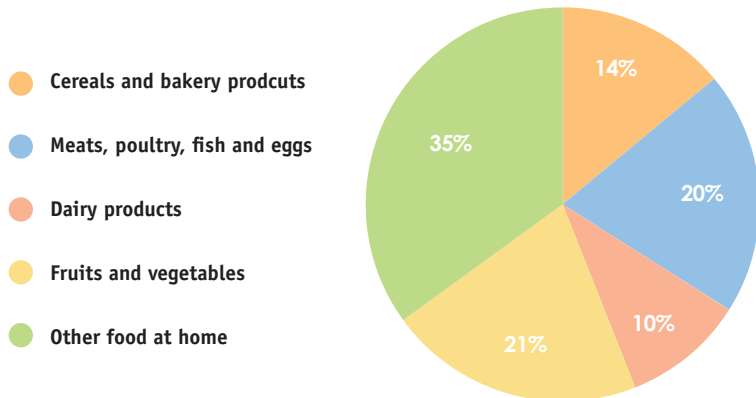
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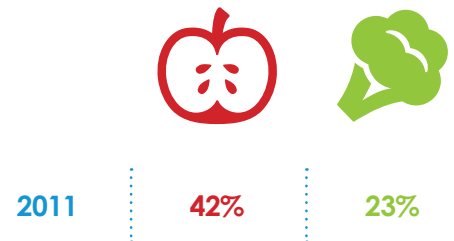
How Much Do We Eat and How Much Do We Spend on Food?

The purchase and consumption habits of Sedgwick County residents impact what foods are produced locally for direct market sales. According to the Bureau of Labor Consumer Expenditure Survey, (2011) the average per capita food expenditure in Sedgwick County is \$2,147.50, 62% of which is eaten at home, 38% away from home. The largest category of food expenditures for food eaten at home is "Other Food at Home," which includes sugar and sweets, fats and oils, non-alcoholic beverages, processed foods and "junk" foods. Behavioral Risk Factor Surveillance System (BRFSS) data for the Wichita MSA (2011) shows that a significant portion of the population is consuming far less than the recommended number of fruits and vegetables on a regular basis. Those who shop at farmers' markets and participate in community or home gardening are shown to consume more fruits and vegetables than those who don't.

FOOD AT HOME



LESS THAN 1 SERVING PER DAY



FOOD EXPENDITURE ESTIMATES







	Economic value if 5% of ALL food purchased from local sources	Economic value if 5% of fruits and vegetables purchased locally
SEDGWICK COUNTY Pop. 505,415 Annual total food expenditure ¹ : \$1 billion Fruits and vegetables ² : \$143 million	\$54.6 million	\$7.1 million
REGION Pop. 737,775 Annual total food expenditure ¹ : \$1.5 billion Fruits and vegetables ² : \$209 million	\$79.2 million	\$10.4 million

Bureau of Labor Statistics
¹Annual total food expenditure (population multiplied by average per capita food expenditure)
²Total amount spent on fruits and vegetables (population multiplied by average per capita used at home)

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Local Places to Buy Food and Places to Buy Local Food

Food Source	Summary	Local Food Support
 RETAILERS	<ul style="list-style-type: none"> • 389 places to purchase food in the eight-county region, mostly convenience stores • 234 food retailers in Sedgwick County, mostly national chains 	MODERATE <ul style="list-style-type: none"> • A few locally-owned stores • Many carry locally grown, raised or produced products • Challenge for farmers and stores to provide a consistent supply, even during peak growing season
 RESTAURANTS	<ul style="list-style-type: none"> • 40% of food dollars spent in restaurants • Heaviest concentration of restaurants in Sedgwick County • Most operators source through wholesalers like Sysco and Ben E. Keith 	WEAK <ul style="list-style-type: none"> • Time-consuming and high-maintenance operator/producer relationships • Patrons' willingness to pay more for locally-sourced menu items
 INSTITUTIONS	<ul style="list-style-type: none"> • USD 259 is the largest school district in the region • Serves upwards of 22,000 meals each day • Meals are prepared and packaged at a central location 	WEAK <ul style="list-style-type: none"> • Resources to prepare fresh fruit and vegetables • Volume needs • No active farm-to-school or farm-to-childcare programs
 EMERGENCY FOOD ASSISTANCE	<ul style="list-style-type: none"> • The Kansas Food Bank is the largest provider of emergency food assistance in the region • Serves as a warehouse to distribute items to smaller food pantries and soup kitchens in the region • Participates with Sedgwick County Extension Master Gardeners in the Plant a Row for the Hungry program (est. 2000) 	STRONG <ul style="list-style-type: none"> • 500,000+ pounds of produce collected from local gardeners and farmers' market vendors over the past 14 years to distribute to those in need • 50,000 pounds of produce donated annually the last 6 years
 FARMERS' MARKETS	<ul style="list-style-type: none"> • 10 farmers' markets in Sedgwick County during peak growing season • Five weekly markets in Wichita, the two largest on Saturdays • Other markets held in Cheney, Haysville, Kechi, Colwich and Derby 	STRONG <ul style="list-style-type: none"> • Two markets accept SNAP benefits/cards and numerous farms/vendors accept SFMNP vouchers • Boosts farm sales and provides access to fresh produce to those that may not be able to afford it otherwise
 COMMUNITY SUPPORTED AGRICULTURE FARMS (CSAS)	<ul style="list-style-type: none"> • Some fruit, vegetable and local meat farms use a subscription service to sell their products • A set rate is paid in advance for a box of produce or other products each week for a set number of weeks • Helps minimize risk for the farmers, but is management intensive • 14 CSAs in the region in 2012, 4 based in Sedgwick County 	WEAK <ul style="list-style-type: none"> • CSAs come and go quickly, with one local CSA quitting after the 2013 season and one going out of business in the 2014 season

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FARMERS' MARKET ASSESSMENTS

Market assessments were completed for the Saturday Kansas Grown and Old Town Farmers' Markets in 2011. The assessments estimated attendance, shopper home address, dollars spent and total sales. The Rapid Market Assessment model is designed to capture a conservative snapshot of the market day and cannot be extrapolated for the entire market season. Tomatoes are a major driver of market traffic and sales, but 2011 was a bad tomato year for the area.

	Shoppers	Shopping Groups	Avg. \$ per Group	Estimated Total Sales	Date
KANSAS GROWN! <ul style="list-style-type: none"> • Saturday mornings at 21st & Ridge in west Wichita • Features products grown, raised, processed or handcrafted in Kansas • Up to 93 vendor stalls at peak season 	4481	2422	\$20.59	\$49,868.98	7.16.11
OLD TOWN <ul style="list-style-type: none"> • Saturday mornings at 1st & Washington in the Old Town district of downtown Wichita • Features meats, produce, prepared foods and hand-crafted items produced within 150 miles • Up to 30 vendor stalls at peak season 2018 	2018	1127	\$22.30	\$25,132.10	8.26.11

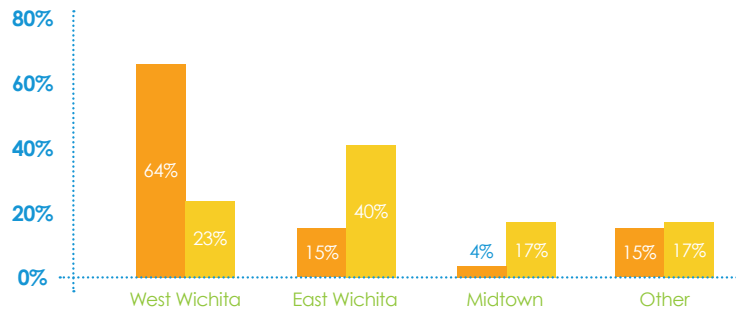
Where Market Shoppers Live



Old Town



Kansas Grown



CONSUMER PERSPECTIVES ON THE AVAILABILITY OF LOCAL FOOD

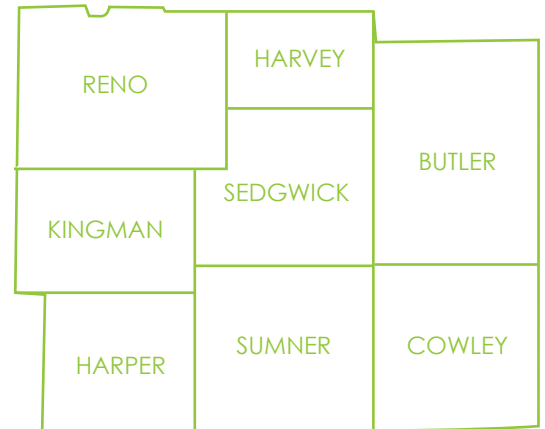
On March 31, 2014, a community conversation was held about the supply and demand of locally produced foods. Perspectives from farmers, food businesses and consumers were captured. Consumers believe local foods are not easily available and that it takes more time, money and scheduling to buy local food. From business hours to pricing transparency, consumers feel overall it's easier to shop at Dillons and other grocery stores. Consumers also expressed concern around a lack of knowledge and education. Even if they did shop at a farmers' market, they wouldn't know how to cook with or prepare the produce. "I know what goes in a salad," one said. "But I don't know what to do with some of this other stuff." Consumers indicated they'd be more likely to add a trip to a farmers' market, farm or retail business if the experience is worthwhile. Otherwise, it's just another stop to make.

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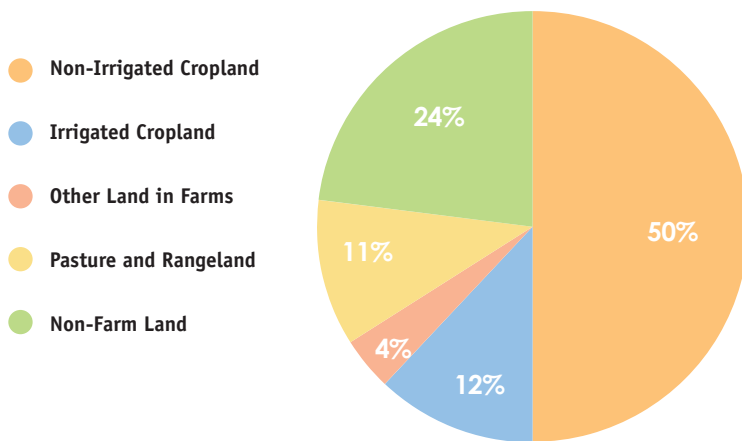


Overview of the Current Production and Consumption of Food

Sedgwick County is one of the most urban counties in the state, and cannot feed itself without global, regional and local farms. Sedgwick County has a wealth of natural resources that is reflected in the productivity of local farms. Most of our farms produce food that is sold through the broader food system on a regional and global level. In addition, many farm businesses from surrounding counties market their products directly to consumers, grocery stores or restaurants in the Wichita area. Because of that, the following data covers Sedgwick County and the city of Wichita in the greatest detail, but also includes statistics for surrounding counties that produce food for the greater Wichita area. These counties are considered part of the south central Kansas region.



SEDGWICK COUNTY LAND USE



76% POTENTIAL FARMLAND

Only 62% used for crops and only 11% used for pasture/rangeland.

LESS THAN 1% used for fruit and vegetable crops.

NON-IRRIGATED CROPLAND - Agricultural land used to grow and harvest crops that is not artificially watered

IRRIGATED CROPLAND - Agricultural land used to grow and harvest crops that is watered by artificial or controlled means

OTHER LAND IN FARMS - Agricultural land that is not classified as cropland, pastureland, or woodland, such as barn lots, ditches, ponds, etc.

PASTURE AND RANGELAND - Agricultural land used for growing plants suitable for grazing livestock

NON-FARM LAND - Land that is zoned for purposes other than agriculture, such as residential, industrial, retail, etc.

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HORTICULTURAL CROPS AND ORGANIC FARMS

There are eight acres of orchards in Sedgwick County. Ten county farmers grow tree fruit and five grow berries. Despite the low numbers of vegetable and fruit acres, the value of the crops produced is not insignificant. The total value of all vegetables grown in the region in 2012 was \$1.1 million, followed by \$423,000 for fruits, nuts and berries. However, these are dwarfed by the total value of all agriculture products in the region, at \$1.35 billion. Sedgwick County has 51 acres of vegetables and 13 vegetable growers with an estimated value of \$498,000. These numbers reflect 2012 Department of Agriculture numbers and there might be additional producers not captured.

According to the National Organic Program database, there are no organic crop producers in Sedgwick County. The organic foods market is one of the fastest growing categories of the grocery industry, so there's likely substantial market share to gain locally. That being said, many local producers don't feel they can capture a premium price to make up for the cost of certification.

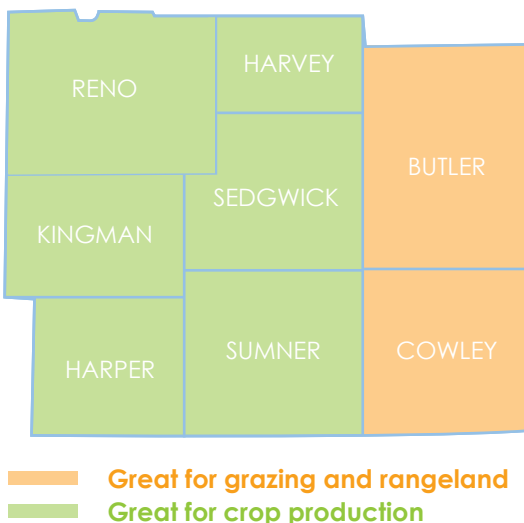
LESS THAN 1%

of total cropland and irrigated cropland is used for fruits and vegetables.

VALUE OF CURRENT FRUIT AND VEGETABLE CROPS

	Market Value of Fruit and Vegetable Crops	Market Value of All Agricultural Products
SEDGWICK COUNTY	\$498,000	\$148,484,000
REGION	\$1,538,000	\$1,350,377,000

NATURAL RESOURCES



RAINFALL AND CLIMATE

Regional rainfall levels vary from 25.5 inches in the western areas to 37.4 inches in Winfield on the eastern side. Wichita averages 30.4 inches (1971-2000) but has considerable year-to-year variation. In some years, more moisture is lost to evaporation in the summer than rain falls. There are 194 frost-free days in Wichita, with average last frost occurring in mid-April, and the average first frost in mid- to late October. This long growing season, combined with cold yet relatively mild winters, allows for growing a wide range of crops.

SOIL RESOURCES

Compared to the rest of Kansas, Sedgwick County has more high quality soils excellent for crop production. Counties to the north, west and south also contain similar soils, while the two counties to the east are on a different geologic formation, representing the southern range of the Flint Hills bio-region in Kansas. These soils are much better adapted to grazing and rangeland than crop production.

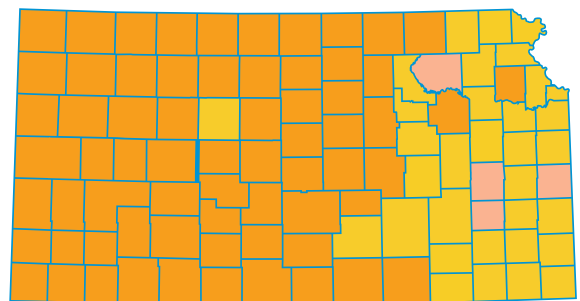
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WATER QUANTITY AND QUALITY

Overall, Kansas' climate requires irrigation for most specialty crops like fruits and vegetables. Sedgwick County's water needs during the main growing season are typically higher than rainfall, highlighting the need for some sort of irrigation for fruits and vegetables. However, given the large number of irrigated field crop acres in the region, it is feasible to think that some of that land could be diverted to fruits and vegetables if there was motivation to do so.

State policy regarding water management is guided by the Water Appropriation Act. A water right does not constitute ownership of water, but only the right to use it for beneficial purposes. The date of a water right, not the type of use, determines the priority to divert and use water at any time when supply is not sufficient to satisfy all water rights (Kansas Water Plan 2014 - Introduction and Background). Overall, Kansas' water resources are considered "mature" in development, so the potential for development of new resources is limited. Water quality is also an issue in Sedgwick County. If vegetable or fruit farming was to expand in this region, the water would need to be carefully tested to determine safety of use for both pathogens and salt content.

Water Usage



IMPLICATIONS:

- Existing surface and ground water rights for irrigation purposes are already allocated, so specialty crop irrigation would need to come from land with an existing water right, or a water right would need to be purchased from another user.
- Even if a water right were obtained, during prolonged drought, younger claims would be cut off first. In some cases of severe drought, agricultural uses may come second to municipal needs.
- A farm well can be used to irrigate up to 2 acres around a house, but additional irrigation would require obtaining a water right.
- Rural water could be used for irrigation, but it could also be expensive for a larger area, possibly making the farm less profitable.
- For small-scale backyard or urban agriculture, municipal or rural water district supplies could be used, but these are expensive.
- The City of Wichita passed a Water Supply Emergency ordinance after the most recent drought period. It allows watering of home and community food gardens using drip irrigation or hand watering to be exempt from outdoor water use bans through Stage 3 of drought. Water fees would still have to be paid, but watering could continue if the homeowner was willing to pay.

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How Much Do We Eat as Compared to What We Grow Now?

Sedgwick County produces far more grains and beef than are needed, and they are important agricultural exports for the region. Soybeans for oil are also an export product. Far less of other foods are produced in Sedgwick County. Several foods, like pork, lamb, oats and dairy products, are produced in significant quantities, but still not sufficient for consumption needs.

A number of other foods we produce in very small quantities compared to what we eat. We produce only 0.04% of the chicken we consume and 4.4% of the turkey. We produce 1.44% of the eggs we eat and 0% of the fish. We produce only about 2% of the vegetables we consume and 0.1% of the fruit.

Fruits and Vegetables

■ Percent Produced
■ Current Consumption



Potatoes

0.1%



Vegetables (Not Potatoes)

2.0%



Fruit

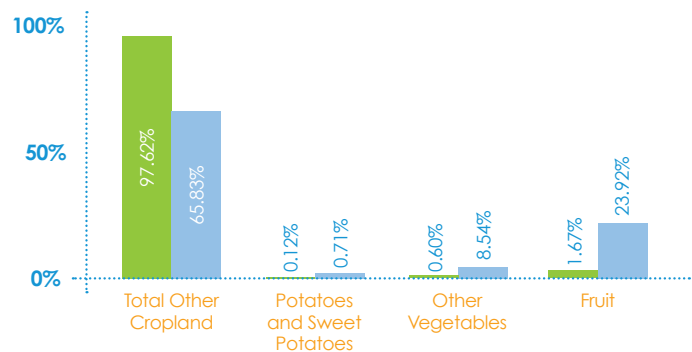
0.1%

Good soil is abundant, though water is somewhat scarce.

The climate (temperature and rainfall) is challenging but not insurmountable, and the region enjoys a long growing season. While some agricultural goods may not be feasible to produce here, there are many that could be produced locally, such as fruits and vegetables.

Acres Needed to Grow Fruit and Vegetables Assuming Recommended Consumption

■ Percent Acres in Cropland
■ Percent Acres in Irrigated Cropland



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Barriers to and Opportunities for Producing More Fruits and Vegetables

INCREASING LOCAL FOOD PRODUCTION IN THE REGION REQUIRES SEVERAL OR ALL OF THE FOLLOWING:

- Increase capacity of existing farmers and ranchers
- Increase number of medium- and large-scale commercial growers selling in the local food system
- Increase number of small-scale commercial growers, including urban agriculture
- Develop a food hub
- Increase small and mid-sized food processors
- Encourage non-commercial gardening activities, such as community and school gardens and home gardening

Barriers

Opportunities



COMMERCIAL PRODUCTION

- Access to and cost of water and land
- Expertise and know-how
- Risk of natural disasters
- Challenge of marketing perishable crops
- Volume of production limits marketing opportunities
- Cost of equipment suitable to scale of operation
- Labor availability and cost

- Ability to market to chain grocery stores or larger specialty stores
- Ability to sell to local food processors/value added producers
- Ability to use agri-tourism to market the farm and educate consumers
- May be able to focus on growing fewer types of produce, enabling better economies of scale
- Ability to produce a high diversity of products
- Development of a food hub may give small-scale producers more opportunities to sell to institutions
- Many niche markets may exist for specialty products, particularly in Wichita



FOOD HUBS

- Need enough growers producing enough volume who are interested in participating
- Need significant start-up capital or grant funding to reach the break-even point (5+ years into the project)
- Need infrastructure (warehouse with coolers, trucks, etc.)
- Need a manager with a wide skill set to effectively run the enterprise

- Ability to aggregate products from many small to medium producers in order to sell efficiently to both retail and institutional buyers
- Provide stability in the marketplace to consumers of local foods, especially produce. Make locally grown foods more accessible to more consumers



FOOD PROCESS FACILITIES

- Consistent supply of raw product to process
- Cost of equipment, inspections and infrastructure

- Value-added processing connected to a farm can help provide year-round employment for farm workers
- Access to value-added processing helps prevent loss of fruits and vegetables that are not sold when fresh

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Non-commercial gardening



COMMUNITY GARDENS

Barriers

- Identifying locations viable for gardening
- Soil contamination issues in urban sites
- Location near interested parties
- Access to quality water at a reasonable cost
- Matching interested volunteers with garden locations
- Lack of gardening expertise and experience

Opportunities

- Open lots in low-income neighborhoods could become garden locations
- Long-term viability for gardens sponsored by non-profit organizations or other entities
- Gardeners are more likely to consume recommended amounts of fruits and vegetables
- Community gardens improve neighbor connection, increase community beautification and pride and reduce crime in the area

Current Efforts

- Diverse plot locations from Mulvane to Main Street to the Hilltop neighborhood
- Typically between 25-30 garden sites per year in the area
- Some gardens are a few raised beds, many are a city lot in size, and others are a few acres
- Space utilized for gardens includes land owned by the city, churches, individuals, businesses and non-profits



SCHOOL GARDENS

- Support is necessary from teachers, administration, maintenance and parent volunteers on an ongoing basis for long-term success
- Teachers or other staff may not have the gardening knowledge needed to run a gardening program
- Identifying garden sites on school grounds with good soil, drainage, sun, accessibility
- Access to water (physically and financially)
- Schools closed during prime gardening season

- Children benefit from learning how their food grows
- Improved learning in garden environment vs. traditional classroom setting
- Using produce for classroom snacks can introducing new produce and help students enjoy the fruits of their labor

- Maize High School (MHS) recently implemented an Agricultural Science program with a grant from KDA to test different food production methods
- One teacher solely dedicated to program
- MHS plans to serve school-grown produce in the cafeteria



HOME GARDENING

- Time or interest of homeowners
- Soil quality
- Water access or cost of municipal water for a large garden or landscape
- Mature landscapes with large trees may limit full sun area for gardens
- HOAs may limit or prohibit fruit or vegetable gardening
- Lack of expertise and experience

- Gardeners and their friends/family consume more produce than the average consumer
- Home gardeners have access to gardening resources like garden clubs and K-State Research & Extension to improve knowledge and skills

- Class attendance, garden hotline questions and plant sales at local nurseries indicate a sustained interest in food gardening
- Interest started during recession and has continued through recent drought and heat

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How Do We Grow Our Local Food System?

There are many paths for growing our local food system and making locally grown, raised or produced products available to the general population. Many communities that have been working on similar projects have successfully improved their local food system through a combination of activities, including policy changes, resource allocation and project implementation. These activities were undertaken by non-profits, universities, government and independent groups. The following chart outlines a sample of recommendations found by auditing a mix of local food assessments from across the country. The areas of local food production that may be impacted by each recommendation are noted.

Policy Changes	Home Food Production	Community Gardening	Urban Agriculture	Commercial Food Production
Zoning ordinances	X	X	X	X
Increase public funding to support resource allocation or education projects	X	X	X	X
Nuisance restrictions (small animals, bees, etc.)	X	X	X	X
Build regional non-profit capacity	X	X	X	X
Corner store initiatives	X	X	X	X
Incentives to institutional buyers to support community gardens or farms		X	X	X
Fresh food financing initiatives (public, private, non-profit)		X	X	X
Land purchase policies/commercial gardens valid land use		X	X	X
Greenhouse/high tunnel permissions (rural and urban)		X	X	X
Ordinances for where, when, how produce can be sold		X	X	X
Organic certification training/cost-share		X	X	X
Financial incentives to develop food production facilities and infrastructure			X	X
Financially support farm/business incubators			X	X
Food hub development			X	X
Incentivize small to mid-size processors			X	X
Assist with GAP certification			X	X
Mobile distribution opportunities			X	X
Commercial shared-use kitchen			X	X
Farm-to-school/childcare programs			X	X
Landscaping requirements for homeowners/HOAs	X			

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A Process to Create a Vision for Our Local Food System

Why Have a Vision for the Food System?

As seen in this report, the food system is highly varied and complex. It encompasses a wide range of entities from farms and gardeners to non-profits and health-related organizations to consumers and government. Each stakeholder group has different ideas about what is important, what should be done first, and how to accomplish those goals. Finding common ground will be essential for progress to occur. While developing a unified vision for the food system may be a time-consuming process, it will allow for better collaboration and leveraging of resources in the future.

Educate stakeholders about the entire food system, not just their sector. This report could be an important tool and catalyst for that discussion.

Engage a diverse group of stakeholders for a detailed evaluation of assets, strengths, opportunities, barriers and challenges for the region. This report has attempted to look at some of those, but it's important to engage stakeholders directly. Some stakeholder groups, such as restaurant operators, may be more difficult to engage and may require special efforts.

Identify some initial goals supported by a wide group of stakeholders. Start working towards these goals to help build momentum and more interest from the community, and leverage future funds and other opportunities.

Develop a strategic plan moving forward. Ideally this plan would engage many or all sectors of the food system and help leverage funds and collaborative opportunities. It would paint a clear path for improving the local food system.

Continue to implement goals, programs and policies that support the food system vision and update the plan as needed. Measure a baseline and progress towards goals. Celebrate achievements and learn from setbacks and roadblocks.

Is an Organization or Coalition Needed to Facilitate this Process?

The first step of educating stakeholders should begin as soon as possible and may not need a formal group to progress. The remaining steps, however, would benefit from either oversight by an organization or an organizational structure that could lend credence to the proceedings and provide support to the time and effort needed to complete the remaining steps of the process.

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SOURCES

1. "Census of Agriculture," United States Department of Agriculture, 2012.
<http://www.agcensus.usda.gov/Publications/2012/>
2. "Census of Agriculture," United States Department of Agriculture, 2007.
<http://www.agcensus.usda.gov/Publications/2007/>
3. "Food Environment Atlas," United States Department of Agriculture.
<http://www.ers.usda.gov/data-products/food-environment-atlas/go-to-the-atlas.aspx>
4. "Wichita Food Deserts. Why We Should Care," Health and Wellness Coalition of Wichita, 2013.
<http://findyourfitwichita.com/food-study.pdf>
5. "Building a Deep-Rooted Local Food System," Douglas County Food Policy Council, 2011.
<http://old.kansasruralcenter.org/publications/LFPCfullreport.pdf>
6. "Strategies to Prevent Obesity and Other Chronic Disease: The CDC Guide to Strategies to Increase the Consumption of Fruits and Vegetables," Centers for Disease Control and Prevention, 2011.
http://www.cdc.gov/obesity/downloads/FandV_2011_WEB_TAG508.pdf
7. "The State Indicator Report on Fruits and Vegetables," Centers for Disease Control and Prevention, 2013.
<http://www.cdc.gov/nutrition/downloads/State-Indicator-Report-Fruits-Vegetables-2013.pdf>
8. "The State Indicator Report on Fruits and Vegetables," Centers for Disease Control and Prevention, 2009.
<http://www.cdc.gov/nutrition/downloads/StateIndicatorReport2009.pdf>
9. "State-Specific Trends in Fruit and Vegetable Consumption Among Adults – United State, 2000-2009," Morbidity and Mortality Weekly Report, Centers for Disease Control and Prevention, 2010.
<http://www.cdc.gov/mmwr/pdf/wk/mm5935.pdf>
10. "National Organic Program Database," United States Department of Agriculture, September 2014.
<https://apps.ams.usda.gov/integrity/>
11. "Kansas Water Plan 2014 – Introduction and Background," Kansas Water Office, 2014.
http://www.kwo.org/Water%20Plan/KWP2014/Rpt_KWP_Volume_I_Draft_021913.pdf
12. "Kansas Weather Data Library," Kansas State, Accessed September 2014
<http://climate.k-state.edu/>
<http://mesonet.k-state.edu/>
13. "Behavioral Risk Factor Surveillance System (BRFSS)," Centers for Disease Control and Prevention, 2009.
http://www.cdc.gov/brfss/annual_data/annual_2009.htm
14. "Behavioral Risk Factor Surveillance System (BRFSS)," Centers for Disease Control and Prevention, 2012.
http://www.cdc.gov/brfss/annual_data/annual_2012.html
15. "Loss-Adjusted Food Availability Data Sets," United States Department of Agriculture.
[http://www.ers.usda.gov/data-products/food-availability-\(per-capita\)-data-system/.aspx#26705](http://www.ers.usda.gov/data-products/food-availability-(per-capita)-data-system/.aspx#26705)
16. D. Swenson. "The Economic Impacts of Increased Fruit and Vegetable Production and Consumption in Iowa: Phase II," The Leopold Center for Sustainable Agriculture, 2006.
<https://www.storycountyiowa.gov/DocumentCenter/Home/View/112>
17. "Data Results 2011 Kansas BRFSS," Kansas Department of Health and Environment, 2011.
http://www.kdheks.gov/brfss/Expansion_2011/index.html