Why a Food System Assessment?

A food system assessment creates an opportunity for a community to learn more about the connections between production, distribution, consumption, and waste in the food system, and to better understand related economic, environmental, and health trends. Understanding trends and connections within the food system can help community members and policy makers identify successes and challenges, build relationships, and set priorities.

This assessment is the product of collaboration among a broad range of stakeholders across the food system in Kern County, including farmers, retailers, consumers, public health and social service and agriculture professionals, educators, advocates, policymakers, regulators, and more. It is intended to serve as a catalyst for collaborative learning, relationship building, and community-based policy development to strengthen Kern County's food system.

Collaborators and Process

In May of 2015, the Kern Food Policy Council (KFPC) asked the UC Sustainable Agriculture Research and Education Program (UC SAREP) to work with them to conduct a food system assessment in Kern County.

The purpose of this assessment was to collect quantitative trend data that would help the KFPC better understand current conditions, set priorities, and develop opportunities for partnerships and action. The food system assessment was funded through United Way of Kern County, with contributions from regional agricultural businesses and philanthropists.

Collaborative relationships among stakeholders are at the heart of the Kern Food Policy Council's vision for a thriving local food system. In this regard, the process of collaboratively conceptualizing and developing an assessment has served as a strategic opportunity.

As the first step in the process, the KFPC recruited stakeholders from across the food system to participate in a series of stakeholder meetings. During these meetings, UC SAREP facilitated the collaborative development of food systems visions, goals, and indicators to assess progress toward goals.

A framework using three overarching visions was selected. The visions chosen by the stakeholders included:

- Healthy Empowered Food Consumers
- Healthy Local Food Economy
- Healthy Farms and Environment

As a means of informing these larger visions, the group identified a series of goals, each addressing an important and specific aspect of the vision. To measure progress towards these goals, stakeholders then selected a set of quantitative indicators, for which the UC SAREP team (Smith, Capps and Feenstra) took the lead in collecting data. Participating stakeholders assisted the authors in identifying potential data sources and technical experts to provide context and help with data interpretation.

At the end of the assessment, the UC SAREP team made general observations of trends within and across sectors, and suggested opportunities for new connections, priorities, or partnerships. The KFPC can then move forward in developing strategic partnerships and an action plan.

The assessment was reviewed by multiple groups at various stages. Because of the highly technical information in Vision 3 (Healthy Farms and Environment), UCCE advisors with expertise in pesticide and water use reviewed those sections. An expert in the Western Center for Agricultural Health and

Safety at UC Davis reviewed the section on farmworker health and safety. A subgroup of the Kern Food Policy Council reviewed drafts of each section of the assessment before the entire report was sent out to the larger Kern Food Policy Council for comment and review.

Scope of the Assessment

The goal of this assessment is to deepen community understanding of relationships and trends in Kern County's food system, and to support stakeholders in taking an active role in promoting human, environmental and economic health in the food system. Given this broad goal and the diverse range of stakeholders involved, the scope of investigation was necessarily comprehensive, requiring analysis of a wide range of indicators across all sectors of the food system. The assessment focuses primarily on data gathered at the county level, though county data is often compared to similar data at the state level. In some instances, county data is compared to similar data in neighboring counties, or nationally, in order to provide context.

What is a Food System?

The phrase "food system" is used throughout this report to describe the entire set of processes involved in the production and consumption of food. Included within this definition are many activities and products that the consuming public may never see, including the manufacture and application of farm inputs (fertilizers, pesticides, seeds, for example), the distribution, processing and packaging of food products, and the eventual management of wastes generated along the way. As Figure 1 shows, food system components are dynamic and interact with one another. They are also impacted by and influence larger processes, including economic structures, agricultural policies, and community and cultural relationships. The state of a food system is constantly changing, which is why this report uses trends (rather than static points in time) whenever possible to describe the food system.

Figure 1. A Food System Framework

Source: Developed by: The Community and Regional Food Systems Project, University of Wisconsin-Madison. 6/2013. www.community-food.org.

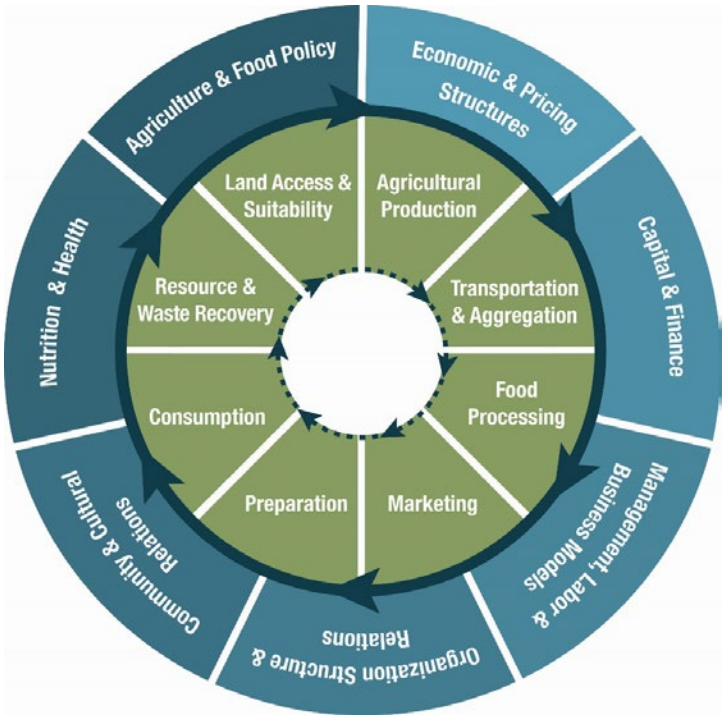


Figure 2: A Sustainable Food System
Source: UC Sustainable Agriculture Research and Education Program

This assessment uses the term "sustainable food system." A sustainable food system in this context is one that integrates sustainable food production, processing, distribution, consumption and waste management in order to enhance environmental, economic and human health. Farmers, consumers and communities all contribute to a sustainable food system.

Aspects of a sustainable food system may include:

- Farms that are economically, environmentally, and socially sustainable
- Marketing and processing practices that create opportunities for a range of food systems businesses to succeed, supporting local economies and increasing consumer choice
- Access to an adequate, affordable, nutritious diet by all community members
- Food and agriculture-related businesses that create good jobs
- Food and agriculture policies that promote sustainable food production, processing and consumption
- Adoption of dietary behaviors that reflect concern about individual, environmental and community health

Methodology

Multiple methods were used to gather data for this report. First, a participatory process was used in which Kern County stakeholders identified visions, goals and potential indicators related to Kern County's food system.

The UC SAREP team used numerous studies from a growing body of work on food system assessments to assist in indicator identification and data sourcing. The UC SAREP team then did the primary data gathering and developed graphs depicting trends over time. After compiling and organizing data for each indicator, phone and in-person interviews were conducted with Kern food system stakeholders and technical experts to assist in contextualizing and analyzing the trends.

Finally, site visits were conducted to provide an in-depth look at noteworthy programs or processes within the Kern County related to selected goals and indicators.

Major state and national level data sources used in this report include:

- The U.S. Department of Agriculture (USDA)'s National Agricultural Statistics Service (NASS), which conducts a Census of Agriculture every five years that generates national, state and county level data on numerous topics of value to this study
- The University of California, Los Angeles's California Health Interview Survey (CHIS)
- The U.S. Census Bureau's Current Population Survey Food Security Supplement (CPS-FSS) and American Community Survey (ACS)
- The California Department of Public Health (CDPH)

Aerial view of Highway 99, Kern County.

PHOTO CREDIT: GREG IGOR

- The U.S. Bureau of Labor Statistics, including the National Agricultural Workers Survey (NAWS) and enforcement data for the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) and Wage and Hour Division (WHD)
- The California Department of Pesticide Regulation (CDPR)'s pesticide use reports (PUR)
- The U.S. and California Environmental Protection Agencies (EPA and CalEPA)
- The California Office of Environmental Health Hazard Assessment (OEHHA)
- The California State Water Resources Control Board
- The U.S. Geological Survey (USGS)
- The California Pesticide Illness Query (CalPIQ)

On the local level, data sources included:

- The Kern County Ag Commissioner's Office, which prepares annual Kern County Crop Reports, maintains county enforcement records related to pesticide regulation compliance, and provided guidance and interpretation regarding Kern County-specific data
- The Kern County Department of Public Health
- UC Cooperative Extension advisors based in Kern County

The authors of this report recognize that all data sources have limitations, and have taken care to note any of those limitations necessary for accurate interpretation of data. Limitations specific to a particular data source will be included along with the citation or in a footnote on the same page, while broader limitations and context (i.e. data collection methods) can be found in the appendices at the conclusion of the report. In some cases, the data necessary to most effectively measure progress toward the goals identified by stakeholders were not available. In these cases, indicators were either modified to match the best available proxy data or, in some cases, eliminated.

The next section contains a general overview of Kern County to help provide the broader context within which the food system is situated.

Kern County Profile

Size and Climate:

Kern County covers 8,132 square miles (5,204,428 acres).[1] It is the third largest county in California.[2]

Kern County extends east beyond the southern slope of the Eastern Sierra Nevada range into the Mojave Desert, west across the floor of the San Joaquin Valley to the eastern edge of the Coastal Range, and to the south over the ridge of the Tehachapi Mountains.[3]

Kern County's climate is generally described as Mediterranean, including wet winters and hot dry summers. Temperatures range from average lows of 31°F in January to average highs of 97°F in July. Average annual precipitation is around 6 inches,[4] though it varies both year to year and in different parts of the county.

Courtesy of Community Action Partnership of Kern, Brady Bernhart, AICP.

1 U.S Census Bureau. (2014). State and County Quick Facts: Kern County. 2014 Population Estimates Program. Retrieved October 22, 2015, from https://www.census.gov/quickfacts/fact/table/kerncountycalifornia/PST045216

2 Kern County Board of Trade. (2015). About Kern County. Retrieved October 22, 2015, from http://www.visitkern.com/about/

3 Key to the City. (2011). Kern County CA Index. Retrieved October 22, 2015, from http://www.usacitiesonline.com/cakerncounty.htm#communities

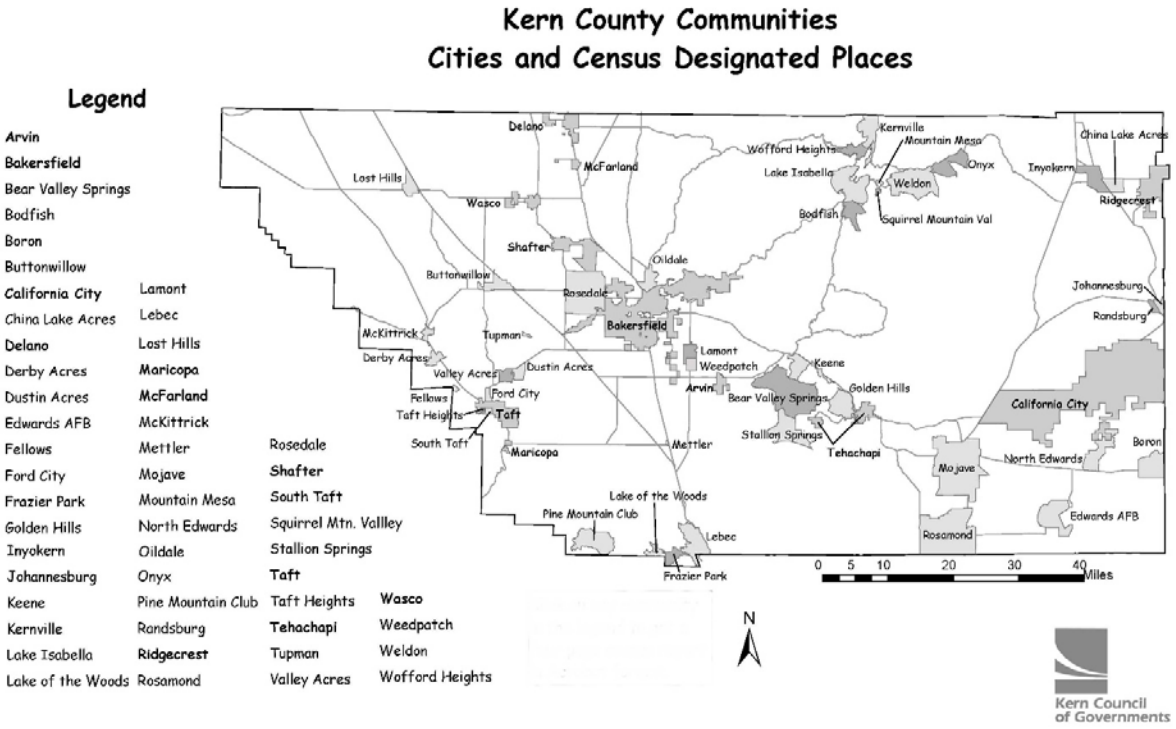
4 Kern Economic Development Corporation. Climate. Retrieved February 28, 2017, from http://kedc.com/quality-of-life/climate/

Population, Density and Demographics

The population of Kern County was approximately 882,000 in 2015.[5] It is the eleventh largest county in California by population. [6]

The population of Kern County grew by 0.7 percent between 2014 and 2015[7] and is predicted to continue to grow due to a young population, affordable home prices, and growing job opportunities.[8]

Kern County has 11 incorporated cities with the three most populated cities being Bakersfield (population 379,505), followed by Delano (population 52,222), and Ridgecrest (population 28,419).[9]



5 874,589 in 2014

6 U.S Census Bureau. (2014). State and County Quick Facts: Kern County. 2014 Population Estimates Program. Retrieved October 22, 2015, from https://www.census.gov/quickfacts/fact/table/kerncountycalifornia/PST045216

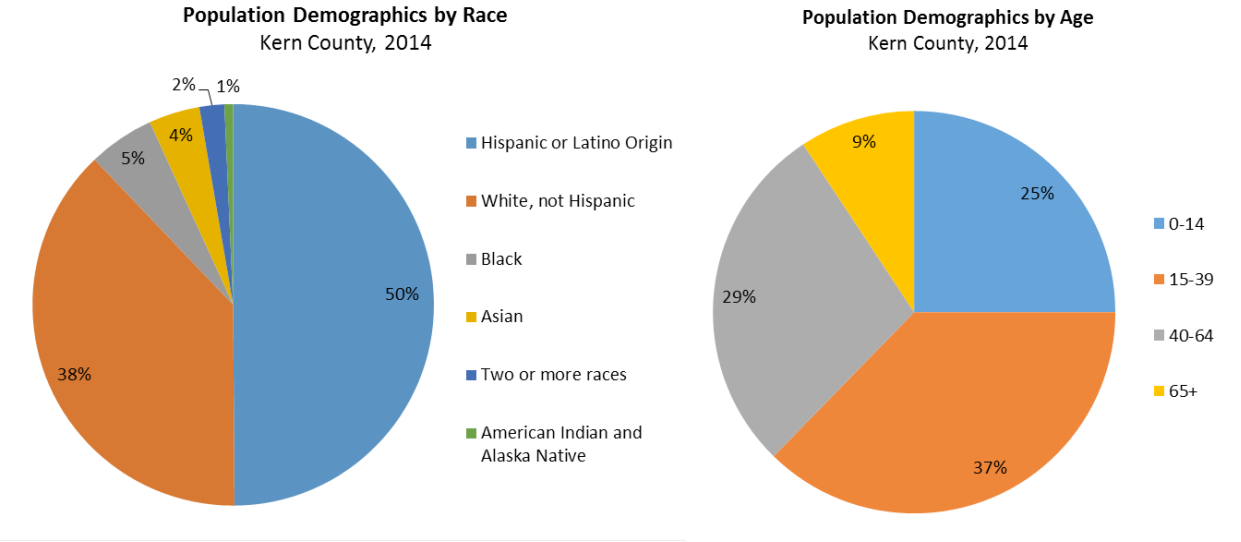
7 State of California, Department of Finance. (2015). E-1 Population Estimates for Cities, Counties and the State with Annual Percent Change—January 1, 2014 and 2015. Sacramento, California.

8 Kern Economic Development Corporation. (2015). Kern County Demographics. Retrieved November 4, 2015, from http://kedc.com/community-profile/demographics/

9 State of California, Department of Finance. (2015). E-1 Population Estimates for Cities, Counties and the State with Annual Percent Change—January 1, 2014 and 2015. Sacramento, California.

The majority of residents in Kern County are between the ages of 15 and 39, with a median age of 35 (see Figure 3).[10] The principal race in Kern County is Hispanic/Latino (50 percent), followed by White Non-Hispanic (38 percent).[11]

Figure 3: Kern County population by age and race
Source: Source: U.S. Census Bureau, 2014 American Community Survey



Main Economic Drivers:

Kern County's agriculture sector is the largest economic sector in the county. In 2014, the gross value of all agricultural commodities produced in Kern County was over $7.5 billion.[12] Grapes, almonds, milk, citrus, and cattle and calves generated more than $5 billion in revenue. The county's agriculture sector is expanding, with employment growth exceeding most other California counties. Over 20 percent of the county's workforce is employed in this sector.[13]

One of the other main economic drivers is oil. Kern County is the number one oil-producing county in the continental United States.[14]

Oil production and agriculture are two of the largest economic sectors in Kern County.

PHOTO CREDIT: SUSAN REEP

10 U.S. Census Bureau. (2014). State and County Quick Facts: Kern County. 2014 American Community Survey. Retrieved February 22, 2016, from http://www.census.gov/quickfacts/table/RHI825214/06029,00l

11 Ibid.

12 Ibid.

13 Kern Economic Development Corporation. (2015). Value-Added Agriculture. Retrieved November 4, 2015, from http://kedc.com/site-selection/target-industries/value-added-agriculture/

14 Kern Economic Development Corporation. (2014). Kern County Takes the Lead for Oil Production. Retrieved November 4, 2015, from http://kedc.com/kern-county-takes-the-lead-for-oil-production/

Kern County landscape.

PHOTO CREDIT: DOUG KESSLER

Poverty, unemployment and public benefits:

In Kern County, approximately 22.9 percent of the population lives below the poverty level, compared to 15.9 percent for the state of California.[15]

The unemployment rate in Kern County was 10.4 percent in December 2015, compared to 5.9 percent in the state of California for the same period.[16] [17]

About 22.7 percent of the total population in Kern County receives food stamps, compared to 18.1 percent in the state of California.[18]

The percentage of low income individuals (at or below 200 percent of the Federal Poverty Level) experiencing food insecurity in Kern County in 2014 was 30.4 percent.[19]

15 U.S. Census Bureau. (2013). State and County Quick Facts: Kern County. 2013 American Community Survey. Retrieved October 22, 2015, from http://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml

16 California Employment Development Department. Historical data for unemployment rate and labor force (not seasonally adjusted) in Kern County; also, California Economic Indicators: California seasonally adjusted labor force, unemployment rate, and labor force participation rate.

17 As of January 2017, the unemployment rate has risen to 11.1% in Kern County and decreased to 5.5% in California.

18 California Health Interview Survey, UCLA. (2014). http://ask.chis.ucla.edu/AskCHIS/tools/_layouts/AskChisTool/home.aspx#/results

19 Ibid.