



VISION 1: Healthy, Empowered Food Consumers

Background and National Trends

Healthy human communities depend on a healthy food system, including food production, processing, preparation, consumption, and waste management. A healthy food system is one that is economically, ecologically, and socially sustainable, and that provides all people access to safe, affordable, nutritious, culturally appropriate food at all times.

Despite dependence on the food system, many Americans are no longer aware of where their food comes from or how their choices may impact the food system. Increased urbanization and globalization in the food system likely contribute to this lack of awareness by increasing the distance between consumers and producers.¹

Lack of knowledge about food systems and nutrition, combined with people's increasingly sedentary lifestyles, contributes to growing rates of diet-related health problems in many communities. Currently, more than one third of Americans are overweight or obese,² with only about 30 percent consuming recommended amounts of fruits and vegetables,³ putting these Americans at greater risk of heart disease, high blood pressure, and stroke.⁴

According to the U.S. Centers for Disease Control (CDC), encouraging a better understanding of the origins of food and the benefits of healthy eating, combined with increased access to fresh fruits and vegetables, can help stem the tide of diet-related disease.⁵

The CDC also recommends food policy councils as one way to improve the food environment at state and local levels, stating that:

"Food policy councils and other types of food councils provide support and advise residents and

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- 1 Phoenix, L.E. (2009). Introduction to Volume 1. In L.E. Phoenix (Ed.), *Critical Food Issues: Problems and State-of-the-Art Solutions Worldwide* (xiii-xx). Santa Barbara, CA: Praeger.
 - 2 Ogden, C. L., Carroll, M. D., Kit, B. K., & Flegal, K. M. (2014). Prevalence of childhood and adult obesity in the United States, 2011-2012. *JAMA*, 311(8), 806-814.
 - 3 Casagrande, S. S., Wang, Y., Anderson, C., & Gary, T. L. (2007). Have Americans increased their fruit and vegetable intake?: The trends between 1988 and 2002. *American Journal of Preventive Medicine*, 32(4), 257-263.
 - 4 Van Duyn, M. A. S., & Pivonka, E. (2000). Overview of the health benefits of fruit and vegetable consumption for the dietetics professional: selected literature. *Journal of the American Dietetic Association*, 100(12), 1511-1521.
 - 5 Centers for Disease Control and Prevention. (2011). Strategies to prevent obesity and other chronic diseases: The CDC guide to strategies to increase the consumption of fruits and vegetables. Atlanta: Centers for Disease Control and Prevention, US Dept of Health and Human Services.



Orange trees, Kern County.

PHOTO CREDIT: SUSAN REEP

governments on how to develop policies and programs to improve local food systems. The goal is to increase access to and the availability of affordable, healthy foods such as fruits and vegetables.”⁶

The goals and indicators in Vision 1 generate a picture of how Kern County residents may move closer to becoming healthier, more empowered food consumers.

Kern County Trends

Education about nutrition and the food system more generally is a foundation upon which healthful food choices are made. Providing opportunities for K-12 students to learn about the food system and nutrition in classrooms, and through experiential learning in gardens, on farm tours and in school cafeterias can collectively make positive health impacts.⁷ Approximately 14 percent of Kern County public schools in the 2014–15 school year have school gardens (in about one third of all school districts), most clustered in and around Bakersfield. About 12 percent of all students are enrolled in schools with school gardens. Not all students might participate, but they are likely aware of their school gardens. In the 2013–14 school year, eight school districts (17 percent of all districts) reported some “farm-to-school” activity in which schools sourced food from local farms for their school cafeterias, engaged students in farm tours and/or school gardens, and/or integrated food, nutrition or agriculture in curricula. Of the six school districts that reported local purchasing, 31 percent of their food budgets were spent locally.

Nutrition education is often conducted with students through the Expanded Food and Nutrition Education Program (EFNEP), coordinated by UC Cooperative Extension staff and volunteer educators. The number of volunteer teachers and students reached has varied quite a bit over the last decade, from a low of 138 teacher volunteers (2012) and 3,955 students (2014) to a high of 406 volunteers (2014) and 10,626 students (2007).

⁶ Ibid.

⁷ Scherr, R.E., Dharmar, M., Linnell, J., Dharmar, M., Beccarelli, L.M., Bergman, J.J., Briggs, M., Brian, K., Feenstra, G., Hillhouse, J.C., Keen, C.L., Ontai, L.L., Schaefer, S.E., Smith, M.H., Spezzano, T., Steinberg, F.M., Sutter, C., Young, H.M., & Zidenberg-Cherr, S. (2017). A multi-component, school-based intervention, the *Shaping Healthy Choices Program*, improves nutrition-related outcomes. *Journal of Nutrition Education and Behavior*.

PHOTO CREDIT: SHOSHA CAPP'S



Community garden in Arvin, Kern County.

Another important element of becoming healthy, engaged food consumers is having access to nutritious, affordable food. Between 30 percent and 55 percent of Kern County residents at or below 200% of the Federal Poverty Level (FPL) are food insecure. Food insecurity rates in Kern County generally exceeded rates for California over the last decade except in a couple of years (2009 and 2014). Notably, in 2014, as a result of the drought emergency declared by Governor Jerry Brown, up to \$25 million was provided to California counties most impacted by the drought, including Kern County. In Kern County, this Drought Food Assistance Program provided food boxes to food banks, which were distributed by the Community Action Partnership of Kern (CAPK). Food insecurity among Kern County residents earning at or below 200% of the FPL subsequently dropped in 2014 to the

lowest level (30 percent) in ten years, although the percentage of individuals with incomes below the Federal Poverty Level remained high (approximately 25 percent).

About 16–18 percent of Kern County residents receive CalFresh benefits, which is about five to eight percentage points higher than California as a whole. California has the lowest participation rate for SNAP/CalFresh among working families compared to any state in the U.S. and is tied for lowest overall participation. In Kern County, about 35 percent of households that are eligible for CalFresh are not receiving it.

The emergency food system (food banks, pantries, gleaning programs, faith-based organizations and the like) has two purposes: (1) serving as a safety net to provide food to people experiencing food insecurity who may or may not receive assistance from government food programs and (2) serving to reduce edible food waste from farms and retail outlets through food recovery and distribution. In Kern County, three organizations account for the majority of emergency food distribution: The Garden Project, The Community Action Partnership of Kern (CAPK), and Golden Empire Gleaners. Pounds of food distributed or gleaned have increased steadily from 2012 to 2015 for CAPK Food Bank (more than 13 million pounds in 2015) and the Garden Project (almost 20,000 pounds in 2015). The Golden Empire Gleaners distributed less in 2014 than in 2015, although 1.7 million pounds were distributed in 2015.

The same data can also be used to show how much food recovery and distribution has occurred in Kern County.

Maps are a highly effective tool for juxtaposing food availability (stores, farmers markets) and areas of high poverty in the county. In these high poverty areas, low-income residents are less likely to own a vehicle and thus would find it much more difficult to get to a grocery store if one were not nearby. CAPK's GIS map highlights where these areas are throughout the Bakersfield area; there are some areas in the Central Bakersfield area and some south of Bakersfield that need attention.

GOAL 1.1:

Kern County students (K-12) have access to nutrition education and hands-on opportunities to learn about the food system.

Background

One way to increase public understanding and engagement with the food system is to provide educational opportunities for children and youth to learn how food is grown and prepared. Children that are exposed to healthy foods are more likely to make healthy eating choices throughout their lives.⁸

One of the most common strategies to encourage healthy eating for young children is through Farm to School programs, which may include nutrition education, school gardens, and the purchasing of local foods for school meals.

EDIBLE SCHOOLYARD KERN COUNTY: A program of the Grimm Family Education Foundation

The Edible Schoolyard Kern County (ESYKC) provides hands-on garden and kitchen education to students in Kern County. The goal is to encourage children in their discovery and development of a healthy relationship with the food they eat. The ESYKC is a signature program of the Grimm Family Education Foundation, whose mission is to close the achievement gap, graduating students at or above grade level in literacy and math, and improve the health of students and families.

The Grimm Family Education Foundation hosts two Edible Schoolyard locations in Kern County. Founded in 2010, the Buena Vista Edible Schoolyard in Bakersfield works in collaboration with the Panama Buena Vista Union School District, serving 1,000 students in Kindergarten through 6th grade. Grimmway Academy Edible Schoolyard, founded in 2012, is located in Arvin on the campus of Grimmway Academy, and serves 776 students in Kindergarten through 8th grade.

Each Edible Schoolyard site has a learning kitchen and a one-acre garden. Students come to the kitchen and garden classrooms a minimum of 16 times per year. The ESYKC holds Family Cooking Classes and Family Garden Days throughout the year for students and their families. Seasonal Markets, an Annual Plant Sale and Summer Camps are offered to the community throughout the year as well.

The Program will be expanding to Shafter, California in the 2017–2018 school year, providing edible education to a new community of families and students.



Edible Schoolyard learning kitchen.

PHOTO CREDIT: GRIMMWAY FAMILY EDUCATION FOUNDATION

⁸ Blanchette, L., & Brug, J. (2005). Determinants of fruit and vegetable consumption among 6–12-year-old children and effective interventions to increase consumption. *Journal of Human Nutrition and Dietetics*, 18(6), 431-443.

INDICATOR 1.1.1: Access to school gardens in Kern County

Background

School gardens connect children and youth to the natural world and provide a hands-on space where they can learn about where food comes from and how it is grown. School gardens may increase students' access to fresh fruits and vegetables, and can encourage healthier eating patterns because students are more likely to eat foods that are familiar to them.⁹ In addition to increasing food literacy and contributing to the physical health of students, school gardens have also been shown to promote academic achievement in a variety of subjects and to improve social and behavioral well-being.¹⁰ Attitudes toward food choices develop early in childhood and influence eating habits and health throughout the lifespan.¹¹ Additionally, research shows that students at schools that incorporate hands-on gardening into their curriculum demonstrate more concern for and willingness to care for living things.^{12,13}

For the purpose of this assessment, the definition of a school garden is adapted from Creating and Sustaining Your School Garden (CSYSG), a curriculum developed by the Western Growers Foundation and used by UC Cooperative Extension in Kern County.¹⁴

According to CSYSG, a school garden can take many shapes and forms—from a few tubs filled with potting soil, to a set of raised beds, to more traditional garden rows. One thing all school gardens have in common is that they grow plants (fruits and vegetables) that students have the opportunity to eat. School gardens may be available to all students or to just students that participate in a specific program.

MEASURE 1: Number of school gardens in Kern County

Background

The school gardens included here are those that partner with UC Cooperative Extension in Kern County to implement the CSYSG curriculum.¹⁵ Any school in any district can choose to participate in a CSYSG workshop for a small fee. The workshop covers planning and designing a school garden, basic garden skills, curriculum connections, and outdoor classroom management. Participating districts receive the full CSYSG curriculum as well as follow-ups with a school garden specialist who can also be hired to help get gardens started.

Kern County Trends

In Kern County, there are currently 34 schools (out of a total of 265 schools countywide, about 14 percent of all schools) with a school garden that participates in the CSYSG curriculum. These 34 different schools are located within 17 (out of 47) school districts across the county (36 percent of districts). Figure 1 shows the location of these school gardens in Kern County, most of which are located in the Bakersfield area.

9 Robinson-O'Brien, R., Story, M., & Heim, S. (2009). Impact of garden-based youth nutrition intervention programs: a review. *Journal of the American Dietetic Association*, 109(2), 273–280.

10 The Collective School Garden Network. (n.d.). Retrieved October 20, 2016, from <http://www.csgn.org/>

11 Adamo, K. and Brett, K. (2013). Parental perceptions and childhood dietary quality. *Maternal Child Health J*, 18(4). Published online: DOI 10.1007/s10995-013-1326-6.

12 Eames-Sheavly, M. (1994). Exploring horticulture in human culture: An interdisciplinary approach to youth education. *HortTechnology*, 4(1), 77–80.

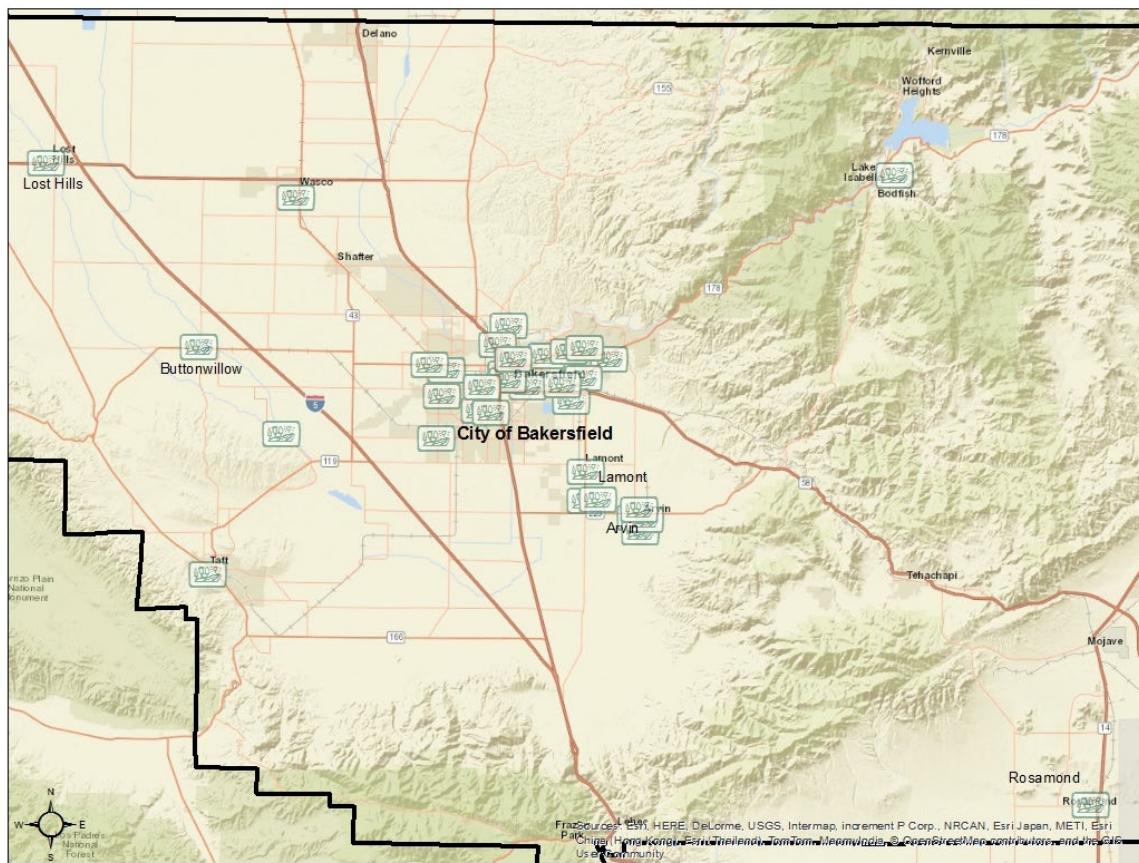
13 Murphy, J. M. (2003). Education for sustainability: findings from the evaluation study of The Edible Schoolyard. Berkeley, CA: Centre for Ecoliteracy and The Edible Schoolyard.

14 The Collective School Garden Network: Creating and Sustaining Your School Garden. (n.d.). Retrieved January 24, 2017, from <http://www.csgn.org/>

15 As of the writing of this report, the only organized and up-to-date information available on school gardens at the county level was based on UC Cooperative Extension records regarding CSYSG workshop participants and follow-up visits. There may be additional school gardens in Kern County that have not participated in this program.

Figure 1. School Gardens in Kern County (2015)

Source: Data provided by University of California Cooperative Extension, Kern County. Map created by Brady Bernhart, Community Action Partnership of Kern.



MEASURE 2: Percentage of Kern County students attending schools with school gardens

Background

In addition to looking at the total number of gardens, school garden access can also be viewed in terms of the percentage of students who attend a school with a garden.

Kern County Trends

Kern County contains 265 public schools in 47 school districts with a total of 180,304 students enrolled during the 2014–15 school year. An additional 2,068 students attended three charter schools, Grimmway Academy,¹⁶ Valley Oaks, and Wonderful College Prep Academy, which also have school gardens (not included in totals in Measure 1). Out of these 182,372 students, 21,391 (12 percent of all students) were enrolled in schools with a school garden in the 2014–15 school year. This includes all students who attended a school with a school garden, regardless of whether they actually came into contact with the garden. Some school gardens may be used primarily for after-school programs, seasonal curriculum, or other kinds of special curriculum that not all students participate in.

Appendix A shows the location and enrollment for each school in Kern County that has a school garden.

¹⁶ As of the May, 2017, Grimmway is enrolling students in a new charter school that will open in Shafter in fall of 2017. This school will also have a school garden.

INDICATOR 1.1.2: Number of Farm to School programs in Kern County

Background

Farm to School programs create connections between local farms and local schools. These programs may involve sourcing locally produced foods for the cafeteria or classroom, taking students on field trips to farms, and/or integrating other food and agriculture topics into K-12 curricula. Farm to School programs are designed to benefit both school children and local farms.

The USDA Farm to School Program, which seeks to improve access to local foods in schools, was formally established by the Healthy, Hunger-Free Kids Act in 2010. In 2013, the USDA conducted the first national Farm to School Census to help establish realistic goals and track progress. A second Farm to School Census was conducted in 2015.

According to the 2015 Farm to School Census, 55 percent of California school districts reported Farm to School activities in the 2013–2014 school year, well above the national average of 42 percent. This represents 373 districts, 5,498 schools, 3,446,240 students, and more than \$167 million invested in local food in California.¹⁷

Kern County Trends

According to the 2015 National Farm to School Census, eight (out of 47) school districts in Kern County participated in Farm to School activities during the 2013–2014 school year. This accounts for 85 schools (out of 265 schools in the county).

Six of these eight districts purchased local food as part of their Farm to School activities. These six districts reported spending an average of 31 percent of their food budget locally.

Table 2 shows the six districts that sourced school food locally in Kern County in 2013–2014 and the way in which each district defined “local.”

Table 2. Kern County school districts that purchased local food in the 2013–2014 school year¹⁸

Source: USDA Farm to School Census

School District	How District Defines “Local”
Arvin Union Elementary	Produced within the state
Bakersfield City	Produced within a 200 mile radius
Beardsley Elementary	Produced within a 100 mile radius
Panama-Buena Vista Union	Produced within the state
South Fork Union	Produced within the same city/county
Taft City	Produced within a 100 mile radius

In addition to the local purchases made by school districts in Kern County, Kern County farms also contribute local food to school districts outside the county. Several other California school districts with Farm to School programs (including districts in Oakland, Los Angeles, Fresno, and Sacramento) use definitions of local that include farms in Kern County (for example “statewide” or “within a 250–300 mile radius”). Because districts outside of Kern County are more likely to be purchasing Kern products through a distributor than directly from a farmer, school food service directors may

¹⁷ USDA Food and Nutrition Service, Farm to School Program. (2016). 2015 Farm to School Census. Retrieved January 26, 2017 from <https://farmtoschoolcensus.fns.usda.gov/home>

¹⁸ Of the eight districts in Kern County that completed the 2015 Farm to School Census, only elementary or middle schools were represented. None of the districts above represent any of the high schools in the county.

not realize that these products (“local mandarins,” for example) come specifically from Kern County. Nonetheless, purchases made through Farm to School programs both inside and outside Kern County have the potential to benefit Kern County farmers.

INDICATOR 1.1.3: Nutrition education activities offered to students in Kern County schools

Background

Students who learn about where their food comes from, how to choose healthy foods, and how to prepare healthy meals have an increased likelihood of maintaining healthier eating habits into adulthood.^{19,20,21}

Communities across the U.S. use a range of methods and curriculums to educate young people about the importance of a healthy diet. One common source of nutrition education is the Expanded Food and Nutrition Education Program (EFNEP). EFNEP is a federally funded program through the United States Department of Agriculture’s National Institute of Food and Agriculture (USDA NIFA). EFNEP offers nutrition education to students in at-risk communities to help youth gain the skills and knowledge to follow nutritionally sound diets. Students learn how to select and identify healthy foods, increase physical activity, and practice safe food handling. Teachers can voluntarily opt in to receive EFNEP, which gives them access to training and allows them to distribute the EFNEP curriculum in their classrooms.²²

Wonderful College Prep Academy

Wonderful College Prep Academy, a public charter school located in Delano, CA, was founded by The Wonderful Company in 2009 to improve educational opportunities for young people across the Central Valley. The Academy currently serves grades 6–12 and will be adding kindergarten through first grade in 2017. The Academy recently received funds from the California Career Pathways Trust to support Ag Prep, a Career Technical Education program that prepares students for high-paying jobs in the technology-driven agriculture industry. Ag Prep is a regional collaborative of seven school districts, three community colleges, The Wonderful Company, Olam International, and Grimmway Farms.

The school used a portion of this funding to create a learning garden so that 6–8 graders have hands-on experiences in science and STEM classes, reinforcing core learning while allowing students to explore subjects and career pathways that they can pursue in high school. Students grow and care for their own plants throughout the year, learning about plant growth cycles and the effects of pH and minerals on plant health. In addition, students learn to take ownership and develop pride in their work. The learning garden also supports the school’s health and wellness initiative by encouraging students to think about their roles in the local food system and to make healthy and sustainable choices.

19 Murphy, J. M. (2003). Education for sustainability: Findings from the evaluation study of The Edible Schoolyard. Berkeley, CA: Centre for Ecoliteracy and The Edible Schoolyard.

20 Joshi, A., Misako Azuma, A., & Feenstra, G. (2008). Do farm-to-school programs make a difference? Findings and future research needs. *Journal of Hunger & Environmental Nutrition* 3.2-3 (2008): 229–246.

21 Lytle, L. A. (1994). Nutrition Education for School-Aged Children: A Review of Research.

22 University of California, Division of Agriculture and Natural Resources. (n.d.). Expanded Food and Nutrition Education Program. Retrieved March 02, 2017, from <http://efnep.ucanr.edu/>

been used in the county since 1995. The program is funded by the USDA NIFA, which has allocated a budget of approximately \$50,000 annually to EFNEP programming in Kern County schools. Kern County schools used to rely on teacher volunteers to adapt and distribute this program in their classrooms. As of summer 2017, EFNEP nutrition educators are not allowed to use teachers as "extenders" of nutrition education, but must provide the information directly.²³ Often, but not always, schools that have gardens use the EFNEP curriculum as a supplement to the gardening program.

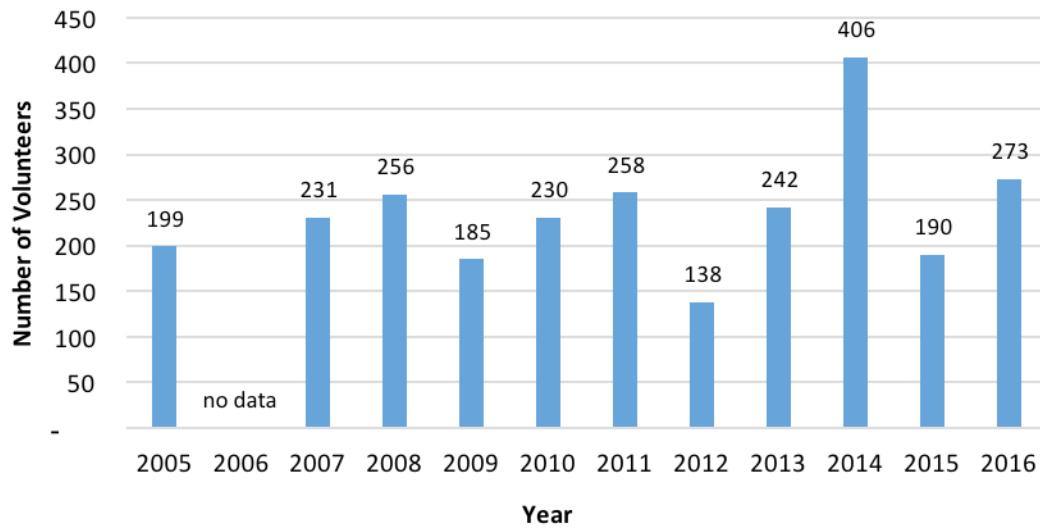
The UC Cooperative Extension office in Kern County maintains records of EFNEP activities, including the number of teacher volunteers using EFNEP and the number of students enrolled in EFNEP.

Figure 2 shows the number of teacher volunteers using EFNEP in Kern County over the last decade.

Figure 2. Number of teacher volunteers using EFNEP in Kern County

Source: Margaret Johns, Nutrition Family Consumer Science Advisor, UC Cooperative Extension (UCCE), emeritus

**Number of Teacher Volunteers using EFNEP Curriculum
Kern County (2005–2016)**



²³ Personal conversation with Katie Panarella, California State EFNEP Office, June 5, 2017.



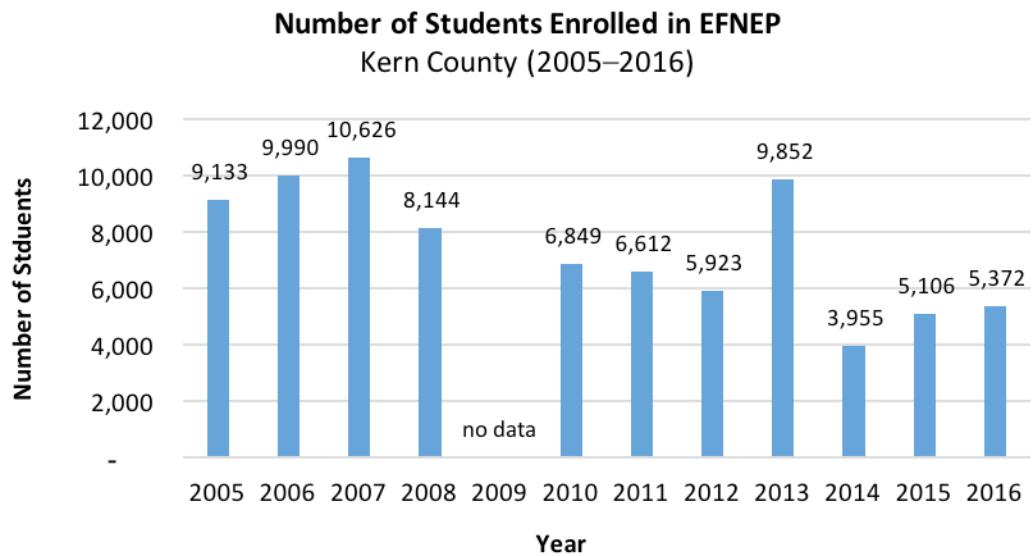
PHOTO CREDIT: GRIMMWAY FAMILY EDUCATION FOUNDATION

Edible Schoolyard garden

Figure 3 shows the number of students enrolled in EFNEP each year over the same time period.

Figure 3. Number of students enrolled in EFNEP in Kern County

Source: Margaret Johns, Nutrition Family Consumer Science Advisor, UC Cooperative Extension (UCCE), emeritus



The number of teacher volunteers has remained stable over the last ten years, while the number of enrolled students has decreased slightly.

In 2016, the number of students enrolled in EFNEP (5,372) represented approximately 3 percent of all students in Kern County.

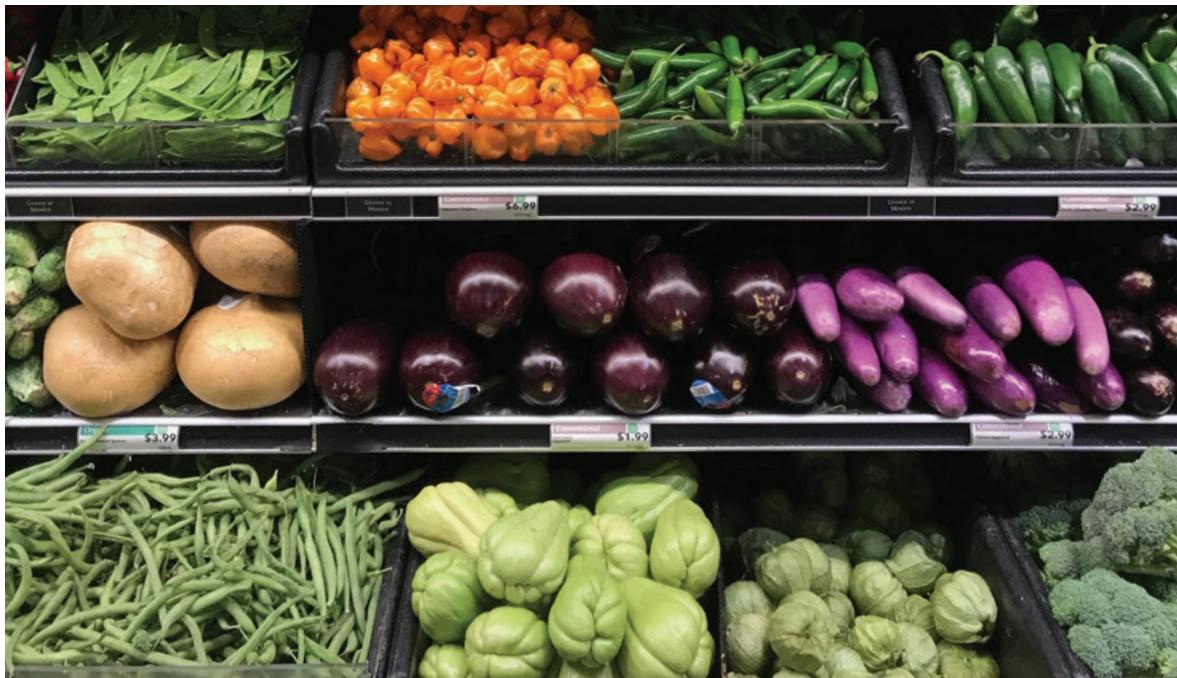


PHOTO CREDIT: SUSAN REEP

Grocery store display, Bakersfield, Kern County.

GOAL 1.2: Kern County residents have access to affordable, healthful food at all times that reflects their cultural values.

Background

California has been the largest agricultural producer in the U.S. for more than 50 years and leads the country in agricultural exports. However, the state's agricultural abundance does not necessarily translate into affordable access to healthful foods for those who live there.

When adjusted for cost of living, California had the highest poverty rate of any state in the U.S. in 2015 at 20.6 percent (the national average in 2015 was 15.1 percent).²⁴

Between 2003–2005 and 2010–2012, a higher percentage of households reported experiencing food insecurity in California than the national average (11.7 versus 11.4 percent and 15.6 versus 14.7 percent, respectively). However, due to a 3 percent drop in food insecurity in California between 2010–2012 and 2013–2015, California's food insecurity rate is now slightly below the national average (12.6 versus 13.7 percent), though still above pre-recession levels.²⁵

A disconnect between agricultural productivity and food security can also be seen at the county level. Some of the most agriculturally productive counties in California, including Fresno, Kern, and Tulare, also have some of the highest rates of food insecurity.²⁶

24 Renwick, T., & L. Fox. (2016). The Supplemental Poverty Measure: 2015; U.S. Census Bureau; PG60-258 (RV); September 2016. Retrieved February 23, 2017 from: <http://www.census.gov/content/dam/Census/library/publications/2016/demo/p60-258.pdf>

25 Coleman-Jensen, A., Rabbit, M., Gregory, C., & Singh, A. (2016). Household Food Security in the United States in 2015; Economic Research Report No. (ERR-215) September 2016; Retrieved November 1, 2017 from <https://www.ers.usda.gov/publications/pub-details/?pubid=79760>

26 Jessup, E. (2011). Working for a fair and healthy food system in the Central Valley. Central California Regional Obesity Prevention Program (CCROPP), Central California Center for Health and Human Services at California State University, Fresno.

INDICATOR 1.2.1: Percent of Kern County residents who are food insecure.

Background

According to the U.S. Department of Agriculture, food insecurity is defined as "a household-level economic and social condition of limited or uncertain access to adequate food."²⁷ Most households in the U.S. are food secure. The USDA Economic Research Service (ERS) collects and publishes national and state level food security data.

According to ERS data, approximately 12.7 percent of U.S. households were food insecure in 2015, down from 14 percent in 2014 and continuing a downward trend from a high of 14.9 percent in 2011. Among food insecure households in 2015, 59 percent reported that in the previous month they had utilized at least one of the three largest federal food and nutrition assistance programs (SNAP, WIC, or the National School Lunch Program).²⁸

The California Health Interview Survey (CHIS) collects and publishes food insecurity data for individual counties in California. However, CHIS uses a different data collection method from the ERS and food security levels from these two sources cannot be compared.

Whereas the national ERS figures for food insecurity include all households regardless of income level, the CHIS is only distributed to individuals with incomes at or below 200 percent of the Federal Poverty Level (FPL). The FPL in 2014 was \$11,670 for an individual and \$23,850 for a 4-person household.²⁹ In Kern County, approximately 25 percent of individuals fell below the FPL in 2014,³⁰ higher than the state rate of 17 percent. Only those individuals with incomes at or below 200 percent of the FPL are included in CHIS data, which is used throughout this section, unless otherwise noted.

Kern County Trends

Kern County's climate allows for food to be grown year-round and ranks among the top five most agriculturally productive counties in the United States.³¹ However, many Kern County residents struggle to feed their families. A 2015 survey of food hardship³² in the U.S. found Bakersfield to be the least food secure metropolitan area in the U.S., with 24.2 percent of respondents reporting difficulties feeding themselves or their families.³³ The Community Action Partnership of Kern did a comprehensive review of hunger and food insecurity in Kern County in 2014, highlighting hunger trends and statistics for all of the government food programs. It provided the foundation for a food system assessment countywide.³⁴

Figure 4 shows the percentage of individuals with incomes at or below 200 percent of the FPL (CHIS sample) who have experienced food insecurity in Kern County over the past 15 years.

27 Definitions of Food Security. (n.d.). Retrieved January 31, 2017, from <http://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security.aspx>

28 Coleman-Jensen, A., Rabbit, M., Gregory, C., & Singh, A. (2016). Household Food Security in the United States in 2015; Economic Research Report No. (ERR-215) September 2016; Retrieved February 23, 2017 from <https://www.ers.usda.gov/publications/pub-details/?pubid=79760>

29 Annual Update of the HHS Poverty Guidelines. (2014, January 22). Retrieved March 02, 2017, from <https://www.federalregister.gov/documents/2014/01/22/2014-01303/annual-update-of-the-hhs-poverty-guidelines>

30 U.S. Census Bureau. Quick Facts, Kern County. (n.d.). Retrieved March 02, 2017, from <http://www.census.gov/quickfacts/table/IPE120215/06029>

31 Kern County Economic Development Corporation (KEDC). Retrieved January 31, 2017, from <http://www.kedc.com/>

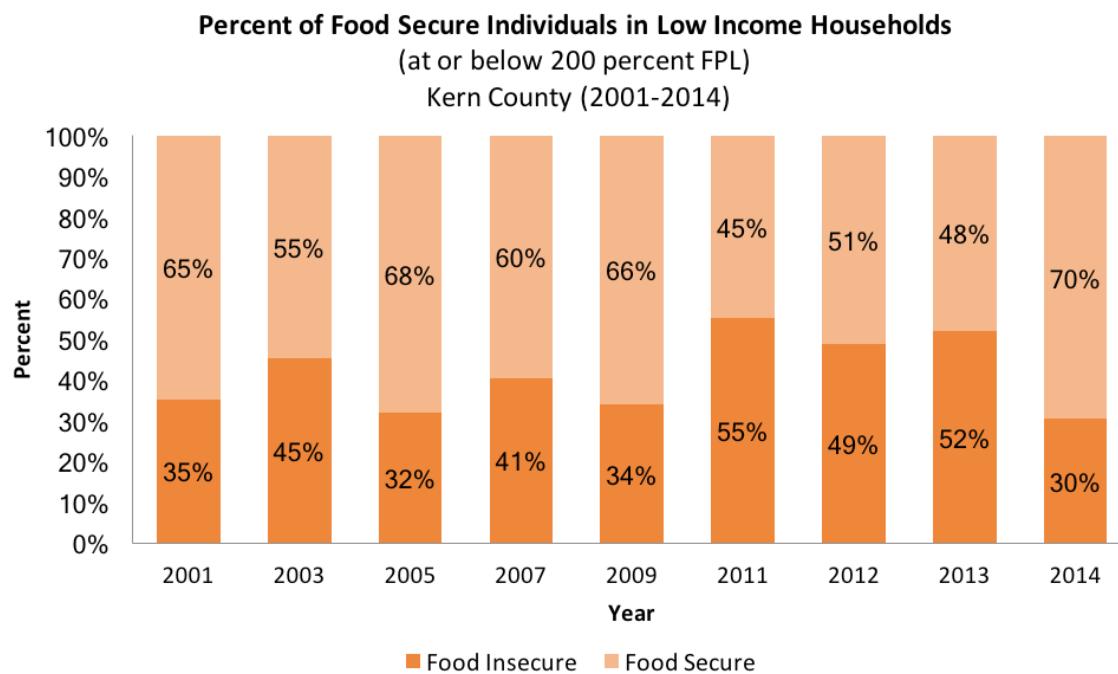
32 Gallup measures "food hardship" based on responses to the question "Have there been times in the past twelve months when you did not have enough money to buy food that you or your family needed?" Though this is not the same question asked by the U.S. Census Bureau to produce annual "food insecurity" numbers, the concepts of food hardship and food insecurity are comparable.

33 Food Research & Action Center. (2016). "How Hungry is America?" FRAC's National, State, and Local Index of Food Hardship, June 2016.

34 Bernhart, B., & Venkatesh, S. Community Food Report, May 2014. Community Action Partnership of Kern. Retrieved February 23, 2017 from: http://www.morningstarfresh.org/images/pdf/kfpc_food_report.pdf

Figure 4. Percent of food secure and food insecure individuals in households with incomes at or below 200 percent of the Federal Poverty Level.

Source: 2014 California Health Interview Survey. Only includes adults from households with incomes at or below 200 percent of the Federal Poverty Level.



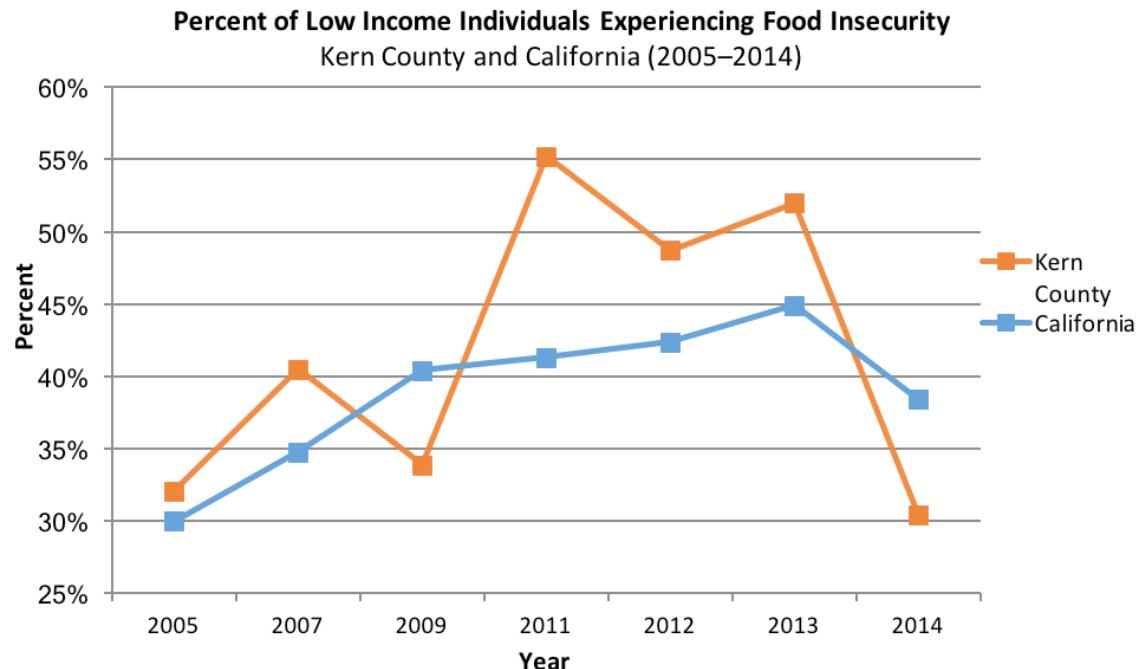
According to CHIS data, 30.4 percent of Kern County adults living at or below 200 percent of the Federal Poverty Level (FPL) reported experiencing food insecurity in 2014. This is the lowest rate reported across the 14 year span in the dataset. The year with the highest percentage of food insecurity in Kern County was 2011, with 55.2 percent of low income³⁵ adults experiencing food insecurity.

In most years, a higher percentage of low income adults in Kern County have reported experiencing food insecurity than at the state level (see Figure 5). However, the most recent year of data (2014) is an exception, with a lower food insecurity rate in Kern County compared to California.

³⁵ "Low income," in the context of this section, refers to individuals or households with incomes at or below 200 percent of the Federal Poverty Level (FPL)

Figure 5. Percent of low income individuals (household incomes at or below 200 percent of the Federal Poverty Level) experiencing food insecurity in Kern County and California (2005–2014)

Source: California Health Interview Survey, years 2005–2014. Only asked of adults with income less than 200 percent of the Federal Poverty Level.

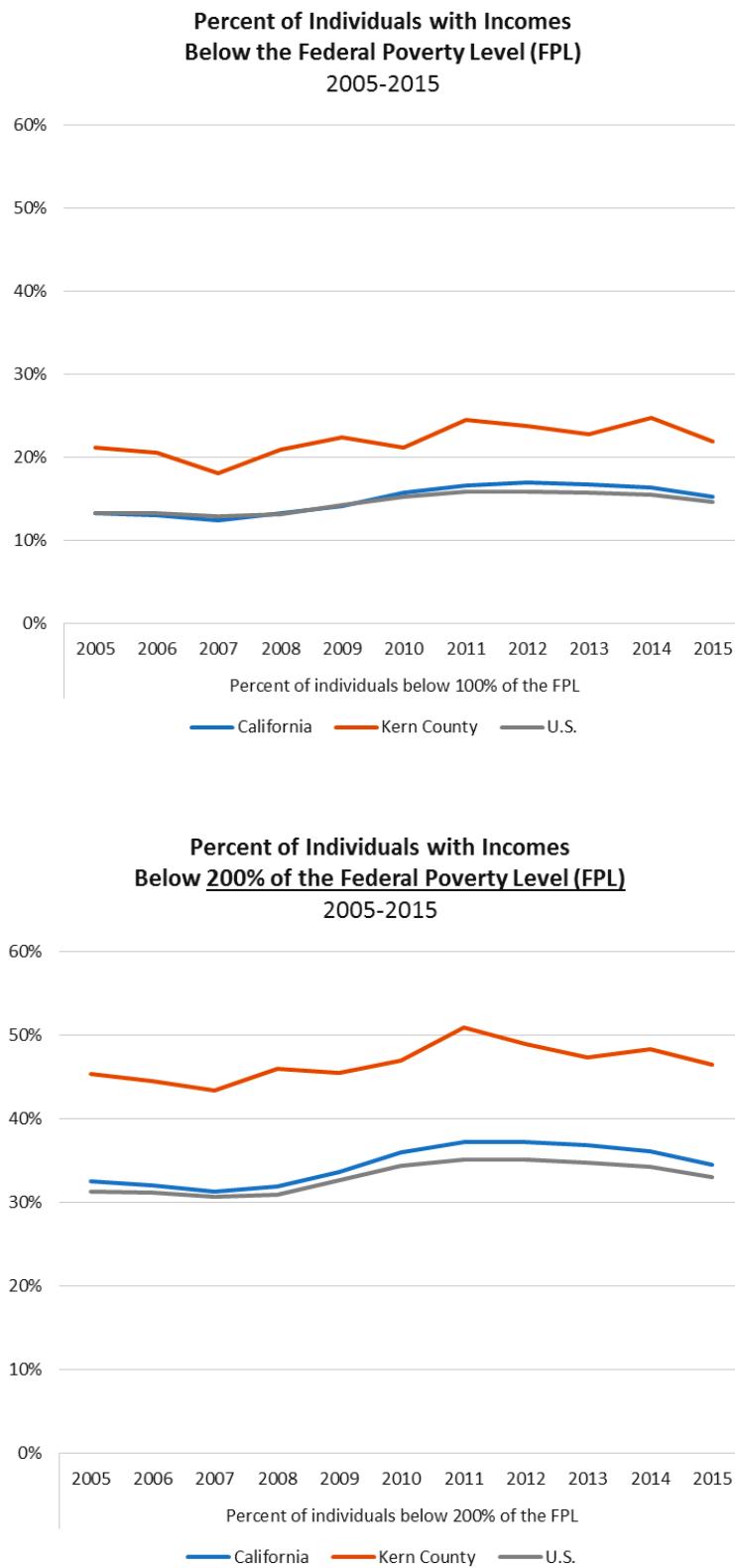


In addition to higher food insecurity rates among low income households in Kern County relative to the rest of California, CHIS-reported food insecurity levels in Kern County represent the experience of a higher percentage of the total population due to higher than average poverty rates in Kern County.

Figure 6 shows the number of individuals below the Federal Poverty Line (FPL) in Kern County, California, and the U.S., as well as the number of individuals below 200 percent of the FPL (those included in the CHIS food insecurity rates).

By both measures, a significantly higher percentage of individuals in Kern County are low income than at the state or national level. In Kern County, close to half the population earns less than 200 percent of the FPL, which represents a low income population that is 10 to 15 percent larger (as a percentage of total population) than at the state or national level.

Figure 6. Percent of individuals with incomes below 100 percent and 200 percent of the Federal Poverty Level in Kern County, California, and the U.S. (2005–2015)
Source: United States Census Bureau, American Fact Finder



The decrease in food insecurity in Kern County in 2014 is puzzling, as poverty rates in Kern County have remained high, suggesting that the decrease in food insecurity does not reflect increased incomes.

One possible explanation is that more low income individuals and households made use of emergency food sources (like food banks) in 2014, and thus did not consider themselves food insecure.

In January of 2014, Governor Jerry Brown declared a drought emergency in California. The resulting California Emergency Drought Relief Bill of 2014 included up to \$25 million in funding to the California Department of Social Services (CDSS) for temporary food aid through the Drought Food Assistance Program (DFAP).³⁶ DFAP provided food boxes to food banks in the California counties most impacted by the drought, including Kern County.³⁷ In Kern County, these boxes were distributed by the Community Action Partnership of Kern (CAPK) in Bakersfield.³⁸

The California food security rates reported through CHIS are based on responses to the following six questions:³⁹

1. “The food that I bought just didn’t last, and I didn’t have money to get more.”
2. Was that often, sometimes, or never true for you in the last 12 months?
3. “I couldn’t afford to eat balanced meals.”
4. Was that often, sometimes, or never true for you in the last 12 months?
5. In the last 12 months, since (date 12 months ago), did you (or other adults in your household) ever cut the size of your meals or skip meals because there wasn’t enough money for food?
6. How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?
7. In the last 12 months, did you ever eat less than you felt you should because there wasn’t enough money to buy food?
8. In the last 12 months, since (date 12 months ago), were you ever hungry but didn’t eat because you couldn’t afford enough food?

Food banks and other emergency food sources rarely provide all the food that an individual or household needs. However, an individual might answer “no” to the CHIS food insecurity questions if emergency food supplementation helped stretch their food budget enough to avoid skipping meals or going hungry.

However, traditional definitions of food security do not consider emergency food as a means of creating food security. The USDA ERS defines food security as “the state in which all persons obtain a nutritionally adequate, culturally acceptable diet at all times *through nonemergency sources*.⁴⁰

Based on the available information, it seems likely that the decrease in food insecurity in Kern County in 2014 was an outlier reflecting the success of the temporary food assistance program DFAP, rather than a true or sustainable downward trend in food insecurity.

36 Food Assistance Available In Counties Hardest Hit by California Drought. (n.d.). Retrieved March 02, 2017, from <http://sacramento.cbslocal.com/2014/06/02/food-assistance-available-in-counties-hardest-hit-by-california-drought/>

37 Passavant, W. (n.d.). Food. Retrieved March 02, 2017, from <http://www.cdss.ca.gov/cdssweb/PG55.htm>

38 Passavant, W. (n.d.). Food. Retrieved March 02, 2017, from <http://www.cdss.ca.gov/cdssweb/PG55.htm>

39 Methodological Note: 6/2012. Tracking food security in California with the California Health Interview Survey. Retrieved March 02, 2017 from <http://healthpolicy.ucla.edu/publications/Documents/PDF/foodpbmethodjun2012.pdf>

40 Cohen, B. E. (2002). *Community food security assessment toolkit*. Washington, DC: US Department of Agriculture, Economic Research Service.

INDICATOR 1.2.2: Eligibility and redemption of CalFresh benefits in Kern County.

Background

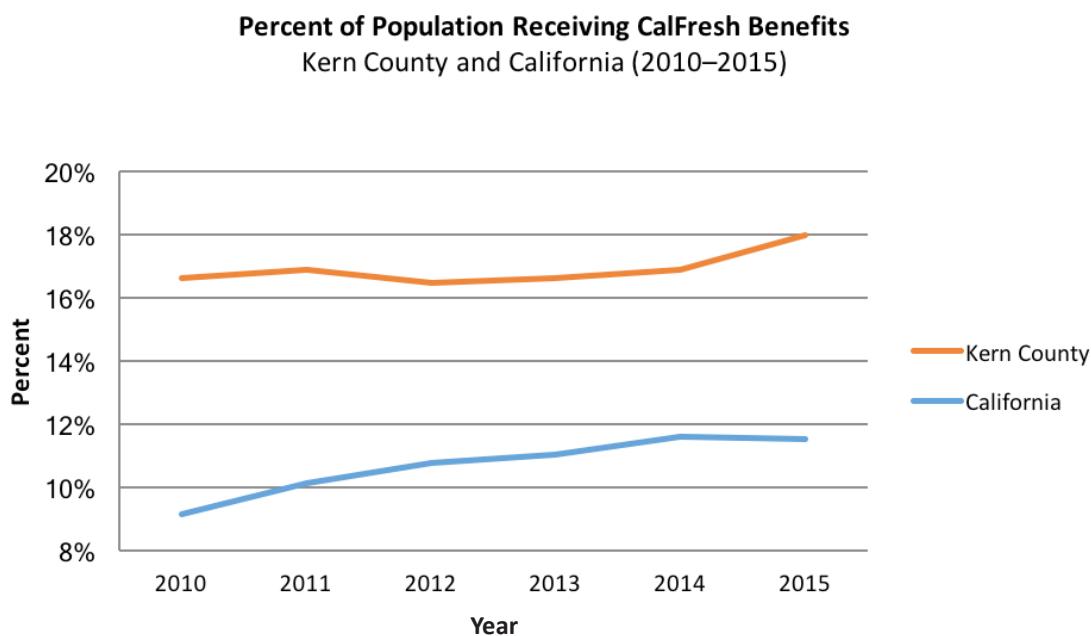
The Supplemental Nutrition Assistance Program (SNAP), formerly called Food Stamps, is known in California as CalFresh. For qualifying low income households, CalFresh provides a monetary supplement to the household food budget. CalFresh benefits can be redeemed for food at most grocery stores, many convenience stores, and an increasing number of farmers markets statewide.

Most households are eligible to receive CalFresh benefits if their gross income is at or below 200 percent of the Federal Poverty Level and their net income (gross income minus eligible expenses) is no more than 100 percent of the FPL.⁴¹ Certain households may have different requirements, such as households with a senior or disabled family member.⁴² Over the last five years, from nine to 12 percent of households in California have been eligible for CalFresh and just over half of eligible households have actually received benefits, though that percentage is growing.

Kern County Trends

Between 2010 and 2014, the percentage of the population receiving CalFresh benefits in Kern County has remained steady at around 16.5 percent with an increase to 18 percent in 2015. The rate of CalFresh use in Kern County has consistently been five to eight percentage points higher than the California average. Even though food insecurity levels have varied in Kern County, including a significant decrease in 2014 (see Indicator 1.2.1) the number of individuals receiving CalFresh benefits has remained relatively stable (see Figure 7).

Figure 7. Percent of population⁴³ receiving CalFresh benefits in Kern County and California (2010–2015)
Source: California Department of Social Services, CalFresh County Data Dashboard



⁴¹ The income level for eligibility was increased in the 2014-2015 budget. It was previously 130 percent of the FPL.

⁴² Passavant, W. (n.d.). Eligibility and Issuance Requirements. Retrieved March 08, 2017, from <http://www.calfresh.ca.gov/Pg841.htm#inc>

⁴³ In CalFresh records, individuals are referred to as "persons." This is distinct from households. The rates given here represent the total amount of individuals receiving CalFresh benefits in Kern County divided by the total population of Kern County.

Figure 8 shows the percentage of households eligible for CalFresh that actually received these benefits each year.

While CalFresh eligibility is determined primarily by income and thus fluctuates with average income and poverty rates, actual rates of CalFresh use depend on eligible households actually applying and using benefits.

California has the lowest participation rate in SNAP/CalFresh among working families of any state in the U.S. and is tied for the lowest overall participation rate.

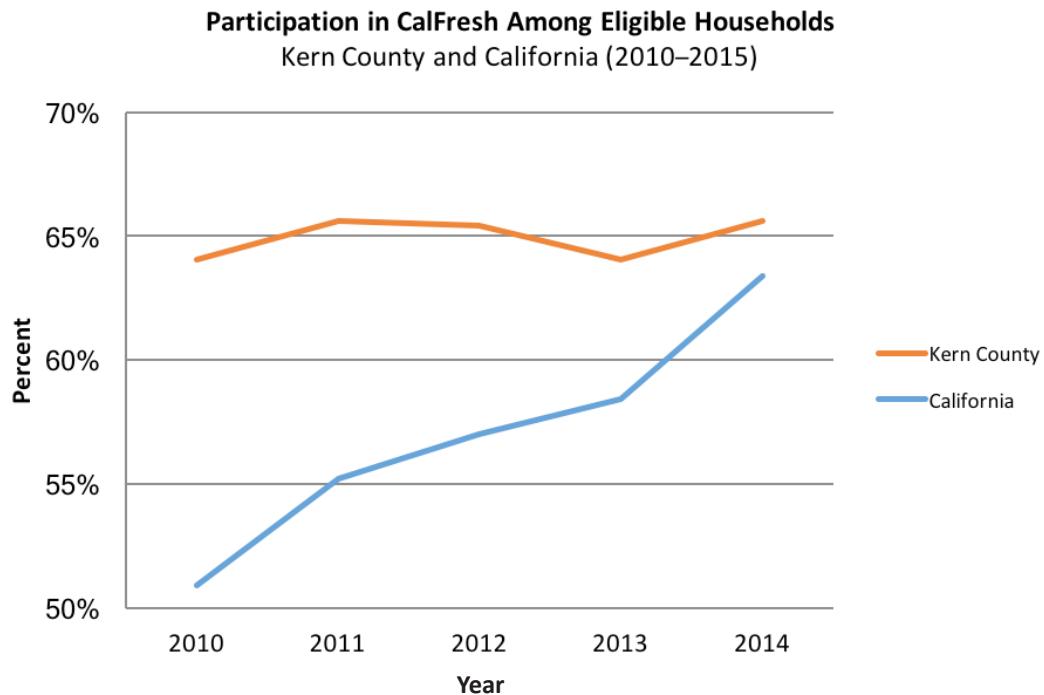
There are a variety of reasons that eligible households do not apply for CalFresh benefits, including perceived stigma, lack of knowledge about the program, or difficulty in managing the requirements of the application process. Challenges may include limited access to transportation, language barriers, or difficulty getting time off from work during the day to apply in person. In Kern County, approximately 35 percent of households that would be eligible for CalFresh are not receiving it.

Efforts to improve the number of eligible households taking advantage of CalFresh include various ways of streamlining the enrollment process to lower barriers to participation and reduce confusion among eligible households.⁴⁴

Figure 8 shows the participation rate in CalFresh among eligible households in Kern County and California. Kern County consistently has better (higher) rates of participation in CalFresh among eligible households than the rest of the state.

Figure 8. Participation in CalFresh Among Eligible Households in Kern County and California

Source: California Department of Social Services, CalFresh County Data Dashboard



⁴⁴ Policymakers Take Steps to Improve Food Security, but Opportunities to Address Hunger Remain. (2015, September 08). Retrieved March 08, 2017, from <http://calbudgetcenter.org/blog/policymakers-take-steps-to-improve-food-security-but-opportunities-to-address-hunger-remain/>

INDICATOR 1.2.3: Produce distribution and edible waste reduction through Kern County's food recovery and distribution systems.

Background

Food banks and gleaning programs have traditionally served as a mechanism for connecting food insecure populations with food that might otherwise go to waste. The two main purposes of these programs are (1) to improve food security among low-income residents, and (2) to reduce edible food waste through food recovery and distribution. Due to spoilage rates and the cost of refrigeration associated with produce distribution, food banks have generally distributed primarily canned, dried or similarly non-perishable food. However, as the health impacts of processed food, including high fat, sugar and preservative content, have become better understood, interest and support for fresh food distribution through food banks has grown.

Approximately 30 to 40 percent of the food produced in the U.S. goes to waste. In 2010, 133 billion pounds valued at \$161 billion went uneaten, \$47 billion of which never even reached consumers.⁴⁵ In addition to dollars lost, food waste also represents the wasted labor, energy, water, and other resources that go into producing, processing, distributing, storing, and disposing of the food that was never eaten.

Food waste includes food scraps thrown away after preparing and consuming food at home, as well as food that never reaches consumers, such as food that expires at a grocery store or is never harvested from a field.

One way to reduce the amount of edible food that is wasted prior to reaching consumers is through food recovery programs, such as those run by food banks and gleaning operations. Food recovery activities may include picking up donated perishable foods (including produce) from grocery stores or farmers markets, or harvesting fruits and vegetables from fields when it is no longer profitable for a farm to do so themselves.

Recovering food that would otherwise be wasted and distributing it to food insecure households has the potential to benefit producers, consumers, and the environment.

Kern County Trends

There are hundreds of emergency food distribution centers in Kern County run through faith-based organizations and nonprofits. An unofficial count places the number of emergency food distribution centers at over 400 in Bakersfield alone.⁴⁶

Three organizations account for the majority of the emergency food distribution in the Bakersfield metropolitan area. These organizations are:

9. The Garden Project, a nonprofit dedicated to gleaning, collecting, organizing, and redistributing fresh produce in and around Bakersfield⁴⁷
10. The Community Action Partnership of Kern (CAPK), an anti-poverty nonprofit that also runs a food bank
11. Golden Empire Gleaners, a nonprofit food bank that collects and redistributes produce and other food that would have otherwise gone to waste⁴⁸

There are significant efforts being made to collect and redistribute perishable food in Kern County.

⁴⁵ USDA | OCE | U.S. Food Waste Challenge | FAQ's | Information Sources. (n.d.). Retrieved March 08, 2017, from <https://www.usda.gov/oce/foodwaste/sources.htm>

⁴⁶ United Way of Kern County

⁴⁷ Father Jack Estes & Amber Beeson, The Garden Project

⁴⁸ See www.goldenempiregleaners.org

CAPK has increased the amount of food distributed every year since 2012. The Garden Project gleans an average of 20,000 pounds of produce per year. Golden Empire gleans or collects around two million pounds of food per year, and serves an average of 160,000 individuals annually.⁴⁹

There is no other organized, up to date, publically available data source that tracks the total amount of produce distributed through the emergency food system in Kern County. Table 3 shows estimates of produce and other types of food provided by the three organizations above, which were collected for the purpose of this assessment.⁵⁰

Table 3: Food recovery and distribution by emergency food providers in Kern County (2012- 2015)⁵¹

Source: Personal communication with CAPK, Golden Empire Gleaners, and The Garden Project

Year	Pounds of Food Collected/Gleaned	Pounds of Food Distributed	Number of People Served	Number of Families Served
CAPK Food Bank				
2012		6,104,490		
2013		7,733,295		
2014		12,247,419		272,484
2015		13,500,000		
Golden Empire Gleaners				
2014	2,630,831	2,490,098	171,148	14,284
2015	1,966,753	1,771,428	154,056	12,676
The Garden Project				
2012	15,126			
2013	28,224			
2014	20,298			
2015	19,832			

INDICATOR 1.2.4: Walkability to grocery stores

Background

The built environment can have a significant influence over how easy or difficult it is for community members to access affordable, healthful, and culturally appropriate foods. If an individual does not live in a centrally located neighborhood, does not own a personal vehicle, or does not have access to affordable and convenient public transportation, choices of where to purchase food can be greatly reduced.

Cities around the country are increasingly implementing sustainability plans that incorporate a certain level of “walkability” to grocery stores and other commercial centers. For the purpose of this report, “walkability” is “the extent to which walking is readily available as a safe, connected, accessible and pleasant mode of transport.” For urban designers, this typically means that a home and a

49 The data in Table 3 only account for what has been documented by these three organizations and does not represent all food recovered and distributed in Kern County.

50 During the writing of this assessment, a survey was developed by United Way of Kern County on behalf of the Kern County Homeless Collaborative to assess the existing emergency food distribution/collection in Bakersfield. This may be a useful tool for tracking produce distributions in the future.

51 Individuals and families may be served by multiple food providers so there may be some duplication in number of families served.

PHOTO CREDIT: DOUG KESSER



Bakersfield, Kern County.

commercial center are located within a radius of a quarter to a half mile (a five to ten minute walk) of each other. When a neighborhood is walkable, individuals do not need to rely on private transportation to be able to enjoy shopping centers, parks, and other opportunities nearby.

Kern County Trends

Figure 9 shows a snapshot of how the built environment may influence food access in Bakersfield, the most populated city in Kern County. This map incorporates several pieces of important data related to access to grocery stores and transportation.

The color shading (blue, yellow, orange, and red) represents the percentage of households that do not have access to a personal vehicle. The red and orange areas contain the highest percentage of households without access to a vehicle (up to 60 percent without a vehicle). Almost all households in the blue areas have access to a vehicle.

The purple building symbols represent large grocery stores, and the circles around them represent a half-mile radius. Please refer to map legend for more detail or the larger, interactive version on line at: <http://bit.ly/kernvehiclemap2016>

The map highlights several areas where there are both a high percentage of households without a vehicle and no grocery store within walking distance. In some cases there are small grocery stores, convenience stores, or farmers markets within these neighborhoods, but no large, full service grocery stores.

The map also shows areas where most households have access to a vehicle and also live within walking distance of a major grocery store.

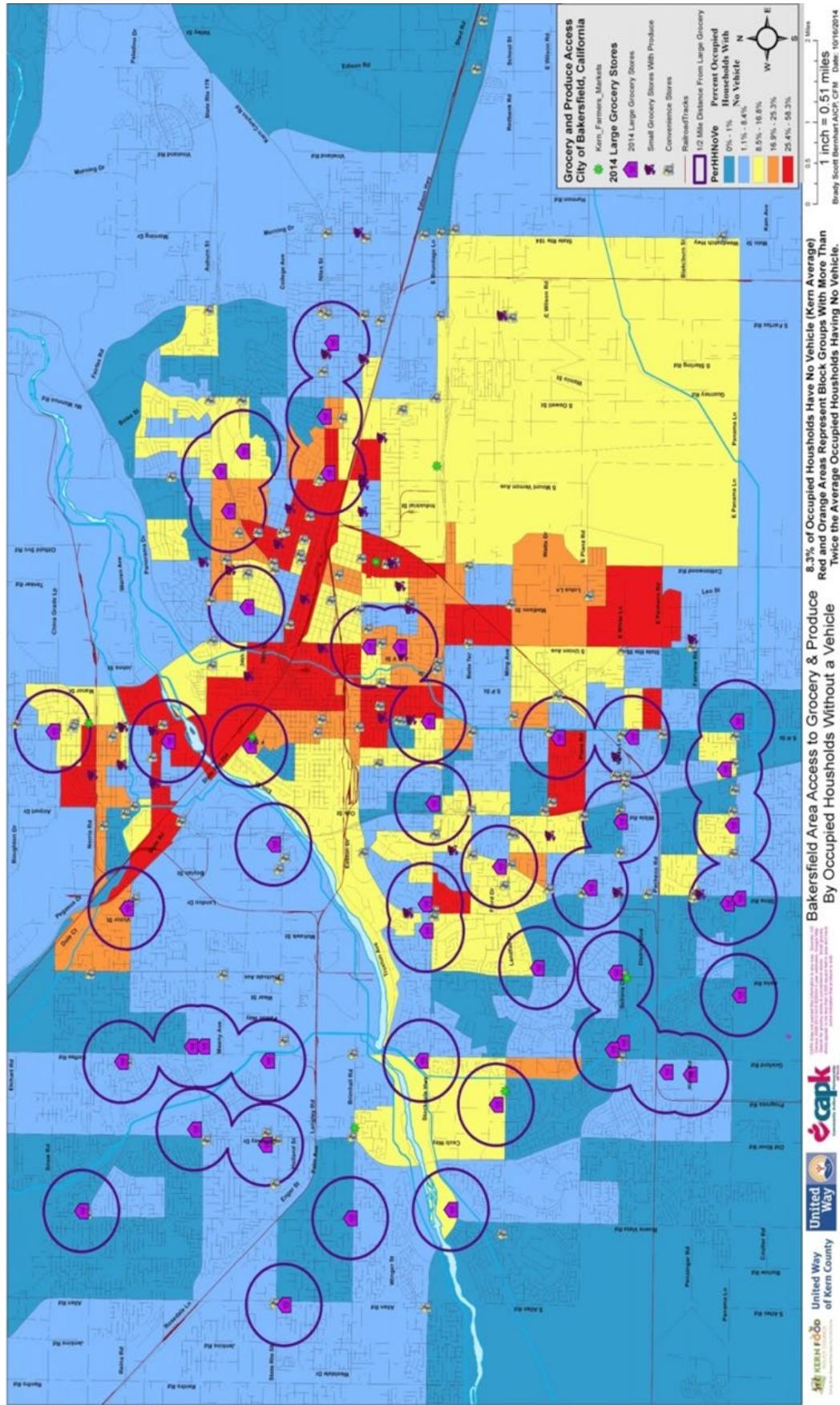


Figure 9: Access to grocery stores and personal transportation in Bakersfield

Source: Community Action Partnership of Kern (CAPK)