



Community garden in Arvin

PHOTO CREDIT: SHOSHA CAPPS

Observations and Opportunities

This assessment highlights trends in the health and well-being of Kern County's people, economy, agriculture, and environment. These trends are organized into three vision areas that were developed collaboratively by stakeholders:

- Vision 1: Healthy, empowered food consumers
- Vision 2: Healthy local food economy
- Vision 3: Healthy farms and environment

In this section, we summarize observations about these trends, highlight successes and challenges in relation to stakeholder goals, and suggest possible opportunities for future work.

The opportunities discussed here reflect both the data gathered for this assessment and a series of stakeholder discussions hosted by the Kern Food Policy Council between May 2015 and May 2017.

Vision 1: Healthy, empowered food consumers

Food consumers are impacted by the food system, and are also able to impact the food system through their choices and actions. When Kern County stakeholders came together for this project, they envisioned a food system in which healthy, empowered food consumers understand where their food comes from and are able to access affordable, healthy foods in their neighborhoods. In order to better understand the current relationships between Kern County residents and their food system, stakeholders selected goals around:

- Nutrition and agricultural education, especially involving children and youth
- Access to nutritious food, either via market channels or emergency food systems
- Reduction in edible food waste

Goal 1.1: Kern County students (K–12) have access to nutrition education and hands-on opportunities to learn about the food system

Successes

Schools provide a straightforward opportunity to reach children in Kern County with education about food, nutrition and agriculture.

Farm to School programs are an increasingly common way of providing this education. These programs may include a range of agricultural and food education activities, including school gardens, nutrition and agricultural education in classrooms, local farm tours, and regional sourcing of products for school meals.

The Kern County schools that participate in Farm to School programs source 30 percent of foods for school meals locally, creating opportunities for students to eat fresh, locally produced food and expanding markets for local farmers. As of the writing of this report, 34 schools in Kern County have school gardens, which are one of the most common ways for schools to engage children in experiential learning about food and agriculture. These schools are located within 17 districts (about one third of all districts). Over the past decade, between 5,000 and 10,000 students in Kern County have received nutrition education through the federally funded Expanded Food and Nutrition Education Program (EFNEP), which is administered by UC Cooperative Extension in Kern County.

Challenges

Although it is encouraging to see school gardens in one third of Kern County's school districts, individual schools with gardens only represent about 15 percent of all schools in the county, so most students in Kern County still do not have access to a school garden. Data on other Farm to School programming in Kern County is limited because so few districts participated in the USDA Farm to School Census. According to the census, 17 percent of Kern County school districts (32 percent of all schools) participate in Farm to School programs in some way. However, this number may not be reliable because so few school districts participated in the census. Only 3 percent of students in Kern County participate in EFNEP nutrition education.

Opportunities

- Increase the participation of Kern County schools in the USDA Farm to School Census. This will make it much easier to track progress in providing nutrition and agriculture education to schoolchildren.
- Support new garden development and/or look into opportunities for sharing gardens, as the Grimmway Academy currently does with the Buena Vista Elementary school (which does not have its own garden).
- The National Farm to School Network has resources to help districts introduce local food in cafeterias, classrooms, and through school gardens. Introduce or encourage the use of these resources in Kern County schools.
- Facilitate partnerships within or between schools, nonprofits, agricultural businesses, and UC Cooperative Extension to increase the number of school gardens in the county. Focus in particular on communities that do not currently have school gardens.
- Encourage districts not involved in Farm to School to visit those who are. Promote small ways to begin regional procurement, such as Harvest of the Month.
- Collaborate with the Kern County Farm Bureau and *Agriculture in the Classroom* to support agricultural education, perhaps as a part of Farm to School programming. Help link regional farmers with classrooms and arrange farm tours for students.

- Look for ways to expand linkages between EFNEP nutrition education, school gardens, and other Farm to School programming so that children participate in multiple venues simultaneously to increase regional food knowledge, attitudes and behaviors. This type of multifaceted intervention has been shown to be more effective in changing attitudes and behaviors about healthy eating.¹
- Work with UC Cooperative Extension in Kern County to be sure EFNEP is considered when planning for nutrition education in K-12 classrooms.²
- Collaborate with people in higher education (CSU Bakersfield, UC campuses, Bakersfield College) to increase nutrition education offered in K-12 and in colleges.

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

Successes

Approximately 30 percent of low income individuals (at or below 200 percent FPL) in Kern County reported experiencing food insecurity in 2014, the lowest level in the past decade. However, poverty levels remained relatively constant over the same period, suggesting this decrease may not represent a sustainable downward trend. Based on the available information, it seems most likely that the reported decrease in food insecurity reflects the success of the temporary food aid provided by the state to drought impacted counties (including Kern) in 2014. Though families are not generally considered to be food secure if they rely on emergency food aid, this aid may reduce some of the worst hardships associated with food insecurity, like hunger and skipped meals. This is an important success and points to the significance of robust food aid programs in the county.

Those in Kern County who are experiencing food insecurity can receive support for accessing basic food resources through government food programs as well as private emergency food programs. Emergency food distribution has increased over time among two of the three major emergency food distributors in the county—CAPK Food Bank and The Garden Project. Though this does not necessarily represent success in addressing the root causes of food insecurity, it does represent the expansion of an important safety net for families in Kern County.

Some farmers in Kern County donate fresh produce to food banks in the county, providing healthy, local produce to low income families and reducing potential food waste.

Challenges

Food insecurity and hunger are long-standing challenges in Kern County. Over the past decade, between 30 and 50 percent of Kern County residents with incomes less than or equal to the Federal Poverty Line (FPL) have experienced food insecurity. Residents with incomes at or below 200 percent of the FPL³ make up almost half of all Kern County residents.

Despite the fact that Kern County sells almost \$4 billion in agricultural commodities each year, rates of both food insecurity and poverty are consistently higher in the county than in California and the rest of the nation. Since 2011, Kern County's poverty rate has hovered around 25 percent, meaning one of four individuals falls at or below the FPL. Many people who live in poverty also lack access to a vehicle, and some neighborhoods in Kern County lack adequate food stores in walking distance or easily accessible by public transportation. Almost one third of residents who are eligible for government assistance via CalFresh do not take advantage of the program. Food donations, particularly

1 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*.

2 As of the summer of 2017, the USDA required EFNEP personnel to do direct teaching vs. having teachers do it. There are currently efforts to return to using teachers as EFNEP extenders..

3 \$11,670 for an individual and \$23,850 for a 4-person household in 2014

fresh produce donations, are difficult to track at the county level, making progress in this area challenging to determine.

Opportunities

- Work with California EFNEP and Kern County SNAP/CalFresh leaders and administrators to identify opportunities for increasing the participation of eligible individuals in CalFresh. A recent UC study showed that programs such as these can have long lasting benefits for the children that participate in them, improving nutrition practices and potentially lowering future public health expenses.⁴
- Community Action Partnership of Kern (CAPK) has put together a GIS map of fresh produce availability and transportation access in the greater Bakersfield area that can help identify areas of high poverty (and likely high food insecurity) and low access to food stores. Use this map to prioritize efforts in those areas of Kern County that are most lacking in food access. Possible activities could include promoting new or existing sources of produce, including road side stands, farmers markets, pop-up markets (like Hen's Roost), and healthy food trucks, or encouraging corner stores to stock more fresh produce.
- Collaborate across sectors to identify ways to further reduce edible food waste and increase food recovery throughout the food system. Document activities and outcomes in a consistent way over time so total impact can be measured.
- Promote increased involvement of faith-based communities throughout the county in expanding access to recovered and/or fresh food.
- To strengthen linkages between the agricultural and food security sectors in Kern County, explore more and different opportunities for farmers to increase donations and reduce edible food waste, such as gleaning projects. Include urban farms and backyard and community gardens as potential sources for donations.

Vision 2: Healthy local food economy

Kern county stakeholders envisioned a healthy, local food economy as one with strong local food markets and good jobs. To understand progress toward this vision, stakeholders selected goals around:

1. Food production, distribution and sales, with a particular focus on local sales
2. Job opportunities in the Kern County food system

Goal 2.1: Kern County improves regional economic opportunities for local food producers

Successes

The food production capacity in Kern County is robust, with total agricultural sales increasing substantially since 2002 and registering nearly \$4 billion in 2012.⁵ The majority of the food produced in Kern County serves national and international markets, however local sales make up a small but growing segment of Kern County's agricultural economy. Direct-to-consumer sales, a subset of all local sales, totaled \$6 million in Kern County in 2012. The average amount of direct sales per farm in Kern County in 2012 was \$44,328, more than double the state average and four times the national average. Businesses like The Hen's Roost or EcoCentric Farm are examples of successful small food businesses in Kern County.

⁴ Page, M. (2017). The Intergenerational Transmission of Poverty and the Long Reach of Child Health and Nutrition Program. Bacon Public Lectureship and White Paper, University of California Davis.

⁵ USDA National Agricultural Statistics Service. (2014). USDA 2012 census of agriculture. Retrieved March 08, 2017, from agcensus.usda.gov.

Challenges

It is difficult to measure total local sales, since the majority of those sales are made through traditional distribution channels like grocery stores or restaurants and are not tracked by any government agency. The USDA does track direct-to-consumer sales, and while significant to the farms and consumers that participate, these sales only made up 0.15 percent of total agricultural sales in Kern County in 2012, compared to 0.40 percent in California. Farms with direct-to-consumer sales made up 7 percent of all farms in Kern County, versus 11 percent in California. This likely reflects Kern's large role in supplying external markets more than a weakness in its local markets. Nonetheless, there is clearly room for growth in this area.



PHOTO CREDIT: GREG IGOR

Kern County farmers market.

Food entrepreneurs and specialty food manufacturers serving local markets exist throughout the state. However, it is difficult to document their presence in Kern County. Although there were about 100 cottage food permits issued in 2015, this may only represent a small fraction of all local food businesses.

There are currently only about a dozen⁶ farmers markets in the county; only five of which accept EBT. There are currently no food hubs in Kern County that could aggregate and distribute food produced locally by small and mid-sized farms.

Opportunities

- Work with farmers' market managers and/or community organizations to explore the market viability of opening new markets. Involving beginning farmers in these new markets could provide them with opportunities to improve their marketing skills.
- Assist those farmers markets that do not currently accept EBT to apply for EBT use.
- Support local farms directly by promoting them publically (highlight a "Kern County farm of the month," or pass along CSA subscription info), or by making it a priority to purchase locally for Kern Food Policy Council events.
- In addition to direct sales, some farms may also want to diversify their sales and markets by exploring retail (grocery stores), institutional sales and restaurants. If food hubs are viable, they may be able to help aggregate and distribute to larger buyers than is possible for individual small and mid-scale farms. Explore the possibility of working with the Fresno Food Commons (a food hub in Fresno) to increase institutional sales.
- Contact schools and institutional buyers such as at CSU Bakersfield (CSUB), Bakersfield College, and UCCE to encourage them to buy local foods (either directly from farms or through their regional distributors) for their cafeterias or catering needs. Work with statewide Farm to School personnel (such as the Community Alliance with Family Farmers—CAFF, or the California Department of Food and Agriculture's Office of Farm to Fork) to access resources for expanding these markets.

⁶ This number varies depending on the source. It could be as high as 15 markets.

- Connect with local financial institutions, businesses, chambers, economic development organizations, local permitting authorities and community organizations to explore policies for encouraging the creation of new small food businesses and/or exploring policies to strengthen these businesses. Work with community organizations, higher education and UCCE to explore alternative financing and access to capital for beginning food/agricultural businesses.
- Compile a resource guide with contacts from local governmental agencies, CSUB, community colleges, UCCE and others for small, beginning food and agricultural businesses.
- Partner with academic institutions (such as CSU Bakersfield, Bakersfield College) and/or UC Cooperative Extension to explore grants and other funding opportunities to provide technical assistance to farms and food businesses serving local markets.

Goal 2.2: All Kern County residents have access to local food



PHOTO CREDIT: JILL EGLAND

Kern County farmers market display.

Successes

Local food can be found in Kern County at grocery stores, restaurants, farmers markets, schools, community gardens, and food banks. Several of these sources, including community gardens, farmers markets, schools, and food banks, are working to create opportunities for more affordable access to local food.

As of 2016, there are 16 community gardens in Kern County. Local farms donated between 15,000 and 28,000 pounds of fresh produce each of the last four years, and this is likely to be an underestimate. Between 2013 and 2016, the percentage of farmers markets in Kern County that accepted EBT increased from 19 percent to 42 percent.

Challenges

Reliable data on local food sales is difficult to obtain, though we do know that local sales make up only a small percentage of all sales in Kern County. Physical access to sources of local food—whether grocery stores, markets or gardens—may be a critical barrier for some individuals, especially those in lower income communities who may be less likely to have access to a personal vehicle. Although bus routes crisscross the county, particularly in Bakersfield, areas with limited service create challenges for those without a vehicle to reach existing food outlets.

Opportunities

- Work with community organizations, schools, CSUB and UC Cooperative Extension, especially in rural areas and lower-income communities, to organize more community and backyard gardens. Document efforts and evaluate the impacts.
- Work with UCCE to bring a Master Gardener program to Kern County.
- CAPK's GIS map is a comprehensive picture of transportation routes overlaid on food outlets and income level. Use this tool as a first step in analyzing areas that need attention. Collaborate with local planners to identify priority areas and evaluate the feasibility of different ways to improve physical access to local foods.

Goal 2.3: The Kern County food system provides job opportunities

Successes

The food system provides jobs for thousands of Kern County workers, from farmworkers to those employed in input supply, distribution, processing, transportation, and food service. Kern County hosts a much higher percentage of food systems jobs than California or the U.S., with one in three workers employed in the food system (versus one in seven statewide and nationally). In four of the top food systems job categories (by number of employees) in Kern County, average wages are higher than the same jobs in California or the U.S. These include fruit and nut tree farming, vegetable and melon farming, cattle ranching, and greenhouse/nursery. In 2014, the weighted average for the top ten highest paid food system job categories in Kern County was \$41,792.

Challenges

Though there are a handful of food systems jobs in Kern County with higher wages than state or national averages, most of the food systems jobs in Kern County fall into low wage categories. The most numerous food systems jobs are food service and crop production jobs. In six of the top food system job categories (by number of employees), wages were lower in Kern County than the same jobs in California or the U.S. Food service and crop production, the two job categories with the most workers in Kern County, both fall in this category. The weighted average for the lowest paid food system jobs in Kern County in 2014 was \$19,891, which is below the Federal Poverty Line (FPL) for a family of 4 (\$23,850). The food system job category with the most employees, accounting for almost half (44 percent) of the employees in Kern County's food system, is "support activities for crop production" which includes farm labor and management. For this category, the average wage was \$21,313, also below the FPL. The category with the second most employees, "restaurants and other eating places," had an even lower average wage (\$15,256). This average wage also falls below the FPL.

These data suggest that the majority of workers in the food system might be classified as "working poor" and find it very difficult to make ends meet.

Opportunities

- Work with innovative local farmers, farm support organizations such as the Farm Bureau, and community organizations that work with farmworkers to identify strategies for enhancing farmworker working conditions (year-round labor, health benefits, fair wages, safe housing, etc.). Share success stories from farms who are currently engaged in these strategies. The Food Chain Workers Alliance suggests specific strategies for policymakers, for consumers and for employers to improve working conditions for farm labor and others in the food system.⁷
- Work with the community organizations and others (Restaurant Opportunities Center United, Food Chain Workers Alliance) to support improved wages for restaurant employees.

Vision 3: Healthy farms and environment

For Vision 3, "healthy farms and environment," Kern County stakeholders envisioned an agricultural sector that is productive, profitable, diverse, and is also a good steward of natural and human resources. To understand progress toward this vision, Kern County stakeholders selected goals around:

- Diversity in farms and producers
- Safe pest control

⁷ Food Chain Workers Alliance. 2012. *The Hands that Feed Us. Challenges and opportunities for workers along the food chain.* Food Chain Workers Alliance. www.foodchainworkers.org.

- Water quality
- Farmworker health and safety

The goals in this section involve complex issues, including several that impact communities that are currently underrepresented on the Kern Food Policy Council (farmers, farm support organizations, farm workers). Some of these issues may be difficult to fully understand without a specialized background, and at times there may not be agreement, even among experts, about appropriate strategies for change.

Our primary recommendations related to the goals in this section are:

- Proactively build relationships with individuals, organizations, and agencies with expertise on agricultural issues prior to initiating activities to address challenges in these areas. Potential collaborators may include UC Cooperative Extension, local or state regulatory agencies, farm support organizations, commodity boards, or public health or workers' rights advocates.
- If an issue has the potential to be politically polarizing, open communication channels with representatives of opposing perspectives before deciding on the best course of action. There may be more common ground than expected or it is possible that common goals can be established. If common ground cannot be found, your position will be stronger for having listened carefully to the concerns of all sides. Keep in mind that even when goals are shared, strategies for change may differ. Commit to learning from those most directly involved with the issue at hand, particularly those you disagree with.

Goal 3.1: Kern County agriculture is diverse

Successes

In terms of the number of type of crops grown, agriculture in Kern County is both highly productive and highly diverse. Farmers in Kern County are also more demographically diverse than farmers in the rest of the country. Approximately 18 percent of farms in Kern County are operated by farmers of color, compared to 6 percent nationally. Women-run farms also make up 18 percent of the farms in Kern County, compared to 13 percent nationally. Kern County supports farms of all sizes and led the state in organic farm sales in the early 2000s.

Challenges

Like the rest of California and the U.S. as a whole, the farming population of Kern County is aging, and smaller farms and farms run by beginning farmers, women farmers, and farmers of color are in the minority and may face unique challenges. A higher percentage of farms in Kern County are large compared to state and national averages, and though this does not necessarily mean that smaller farms are struggling, it is worth paying attention to any changes in farm size distribution to ensure that farms of all sizes continue to succeed.

Though farmers in Kern County are more demographically diverse than the rest of the country, they are still considerable less diverse than the general population in Kern County, both in terms of race and gender.

Organic sales have fallen in Kern County since the early 2000s, even as this sector has grown at the state level.

Opportunities

- Support new or existing programs that assist farmers in Kern County who find themselves in the minority, including smaller scale, beginning, organic, limited resource, and/or socially disadvantaged farmers, including farmers of color, young farmers, beginning farmers, women farmers, non-English speaking farmers, farmers not born in the United States, and farmers with

disabilities. Support could include increased opportunities for training and technical assistance (production or marketing), business planning, financial assistance, mentorship, or encouraging the hiring of more diverse staff at local farm support organizations and agencies. Publish any educational and outreach materials in multiple languages. Offer translation services and other accessibility accommodations at events to ensure diverse participation.

- Kern County boasts a very culturally diverse consumer population. Support market feasibility studies for agricultural and food products that are part of these food traditions but are not currently produced locally.
- Potential collaborators in pursuing the opportunities above and generating new opportunities could include the Kern County Farm Bureau, Kern County UC Cooperative Extension (including 4-H), CSUB, Bakersfield College, Farm Credit, Future Farmers of America (FFA) and nonprofit farm support and advocacy organizations. These potential collaborators may have existing programming in this area, so make sure to involve them from the very beginning in any efforts to incorporate lessons they may have learned and avoid duplication.

Goal 3.2: Kern County reduces risks associated with pesticide use

Successes

Over the past decade, the use of lower risk pesticides, including microbial and pheromone products, has increased in Kern County while the use of the majority of higher risk pesticides has decreased. Compliance with pesticide use regulations has increased over the same time period, likely due to joint efforts by the Kern County Agricultural Commissioner's Office, Kern County UC Cooperative Extension, and Kern County Farm Bureau. The number of individuals impacted by pesticide drift incidents has decreased, and the use of restricted materials near schools appears to be decreasing as well.



PHOTO CREDIT: GREG IGOR

Agricultural worker harvesting carrots

Challenges

The use of higher risk fumigants has increased slightly over the past decade in Kern County. Although fumigants make up a very small percentage of total pesticide applications (less than 1 percent), they represent approximately a quarter to a third of total pounds of pesticides applied.

Although California (and Kern County) keeps excellent records of pesticide use, it is difficult to assess the relationship between pesticide use and risk of harm to humans or the environment due to data limitations and the complexity of the issue. Pesticide use alone cannot describe pesticide risk, exposure, or harm, each of which is much harder to assess and track. Broad categorizations of pesticides are also of limited use, as each pesticide has a unique profile and pattern of use. Lower risk pesticides are not risk free, and the application of higher risk pesticides does not imply harm was done.

Data on exposure and harm relies primarily on reports made by doctors on behalf of patients. More vulnerable populations, such as undocumented farm workers or individuals without health insurance, may be less likely to seek care and have their exposure or health impacts reported. Health impacts related to chronic pesticide exposure (as opposed to acute poisoning) are also likely to be underreported as they are less likely to be recognized or directly attributable to exposure.

Opportunities

- Promote existing programs within the farming community that share the KFPC's objective of reducing the risks associated with pesticide use and promoting best practices. Examples include the Spray Safe Program, the California Almond Sustainability Program, and local Integrated Pest Management (IPM) programs.
- Build relationships with individuals and organizations that are already working on this issue from various perspectives. Examples include UC Cooperative Extension, the Agricultural Commissioner, Farm Bureau, commodity boards, and public health and advocacy groups that work on pesticide issues.
- Work with partners with pesticide expertise to discuss how to reduce the risks associated with fumigant use and promote best practices.
- Work with partners to identify and respond to residents' questions and concerns about pesticide use and health. Potential partners might include UCCE, CSU Bakersfield, health providers, planners, nonprofit or advocacy organizations, Farm Bureau and the Agricultural Commissioner's office.

Goal 3.3: Kern County's water resources are conserved and promote ecosystem health

Ensuring that water resources are used beneficially and efficiently and that water quality is protected are important issues across California. In Kern County, we chose to look specifically at two pieces of California's complex water system that were of particular interest to stakeholders in Kern County—agriculture water use and nitrate contamination of water resources (groundwater, surface water, and drinking water).

Successes

The vast majority of Kern County residents (more than 99 percent) who get their water from public water systems receive water with nitrate levels well below the maximum contaminant level (MCL) of 45mg/L. Surface waters in Kern County have never tested above the MCL since testing began in the 1970s, and average groundwater levels have also remained below this level over the past 25 years, though individual samples have exceeded it in six years during that period.

Kern County's agriculture is highly efficient in its use of water. Even as yields have increased and the most common crops harvested have changed, total irrigated acres and total estimated water use have remained stable.

Challenges

The number of MCL violations for nitrate in Kern County public drinking water systems has increased over the past four years from an average of two violations per year from 2000–2010, to an average of 55 violations per year from 2011–2014. Though these violations impact a very small number of people in Kern County (less than 1 percent of the population), their rise is worth paying attention to.

Although about 96 percent of people in California get their drinking water from public sources, the remainder rely on private domestic wells. Studies have shown that these wells are more than twice as likely as public water systems to exceed drinking water standards for nitrate; however they are not regularly monitored for water quality.

Although Kern County agriculture is highly efficient in its use of water resources, challenges associated with irrigated agriculture remain. These include groundwater overdraft, accumulation of salts, and water contamination (including but not limited to nitrate).

Opportunities

- Nitrate contamination of groundwater is a challenge across the world and there are no easy solutions. The greatest opportunities to impact this issue likely lie in building relationships with those who are already working on this issue, including regulatory agencies, farm support organizations, and advocacy groups.
- Conduct education around nitrate contamination to help consumers appropriately assess and mitigate their risk. Topics could include how to access public water reports, how to get a domestic well tested, or what types of water filtration systems are effective in lowering nitrate levels.
- Support and promote existing efforts to increase water and nitrogen use efficiency.

Goal 3.4: Kern County's food systems workers are part of a safe and fair work environment

Successes

Kern County's food system provides a large percentage of the county's jobs—approximately one in three, versus one in seven in the rest of the state and country.

The number of reported pesticide drift incidents and pesticide related illnesses—the majority of which impact farmworkers – has decreased in Kern County over the past 15 years. The number of non-fatal occupational injuries involving farmworkers in Kern County has decreased steadily from a high of 19 in 2011 to zero in both 2015 and 2016.

Challenges

Wages in the food system are low and food systems workers are twice as likely to be food insecure as other workers. For some job categories, including those with the most workers, wages in Kern County are below state and national averages.

In addition to low wages, food systems workers face unique occupational hazards, particularly those involved in crop production and food manufacturing. Approximately 90 percent of farmworkers in California are foreign born and 56 percent are undocumented, making them particularly vulnerable to occupational hazards and wage theft.

In Kern County, there have been approximately 100 violations of the Migrant and Seasonal Agricultural Workers Protection Act (MSPA), recorded annually by the US Department of Labor, over the past three years. Over the past ten years, MSPA violations have ranged from zero to 500 per year.

Opportunities

- Increase farmworker and other food systems worker representation on the KFPC. These workers and their direct representatives are best positioned to guide discussions about how the council could address the challenges they face. Offer translation services at KFPC meetings.
- Build relationships with workers, farm labor contractors, farmers, and farm support organizations. Each will likely have a different perspective on the challenges and potential solutions to labor equity and safety issues.
- Support and promote existing programs that share the KFPC's objectives around farmworker safety, like Spray Safe.

Data Gaps

Throughout this assessment, we found areas in which data either were not publically available, not available at all, or available in databases too large and complex for the lay person with a personal computer to access. In other cases, there were significant discrepancies between federal, state and local data which were beyond the scope of this report to address. A few examples are included here, along with questions and recommendations where appropriate.

Vision 1: Healthy, empowered food consumers

- Most school districts in Kern County do not fill out the biennial Farm to School Census survey. This survey collects data on local procurement, dollars spent in the local economy, school gardens and nutrition and food education. It is a relatively easy way to document progress in these areas on a countywide basis. All school districts should be encouraged and helped (if necessary) to fill out this survey.
- It would be helpful to agree upon and commit to a consistent set of metrics to document food recovery and distribution in Kern County, at least among the three organizations that account for the majority of emergency food distribution—CAPK, The Garden Project and Golden Empire Gleaners. If possible, include the amount of fresh produce (pounds) as one of those metrics and decide on consistent ways to gather this data. It may work well for one organization to be the repository for the annual summaries.

Vision 2: Healthy local food economy

- There are large discrepancies between the USDA-NASS Census of Agriculture (which we used for most of this assessment across many indicators) and the Kern County crop reports, prepared by the county Agricultural Commissioner's office. Total agricultural sales is perhaps the most glaring difference (\$4 billion according to the USDA in 2012; \$6.2 billion according to the Kern County Crop Report, 2012). Although we talked with representatives from both data sources, neither could explain the differences beyond describing how they gathered their own data. It was beyond the scope of this report to spend more time analyzing the discrepancy. This could be investigated more thoroughly in the future.
- There was very little available data on small and mid-scale food entrepreneurs. If this is of interest to the county, metrics for measuring progress should be identified and data gathered on a regular basis.
- We found four lists of farmers markets in the county and each listed different markets and numbers. It would be helpful if all the organizations that deal with farmers markets (including counting them and recording their locations) could come together to decide on a common protocol and publish one central, publically available list. This list could also include whether or not the market accepts EBT.
- If community gardens are of interest, it may be most efficient to designate one organization to be responsible for keeping a central, publically available list with input from all other involved parties.

Vision 3: Healthy farms and environment

- The primary challenge in this section was the complexity of the issues addressed and the corresponding data, most of which was collected by government regulatory agencies. Cause and effect were not always easy to determine, and each indicator had important limitations that had to be acknowledged.

- Because most of the data included in this section were collected by regulatory agencies tracking a particular issue of concern to the public, there was a somewhat negative framing inherent in the available data. For example, it is much easier to track nitrate contamination than grower efforts to improve nitrate use efficiency because there are government agencies that do the expensive and time consuming work of collecting nitrate contamination data and making it available to the public. There is no equivalent tracking mechanism for the efforts of local growers.
- Department of Labor enforcement data is available only by state or by zip code. In order to look at Kern at the county level, each zip code in the county had to be queried individually and then summarized. This was time consuming and may be a barrier to tracking trends in these areas in the future. It is also not currently possible to compare county-level occupational injury rates to national or state rates due to the unavailability of sufficiently accurate worker counts at the county level and different methods of data collection and processing at different scales.
- Water use and quality data are spread across multiple agencies, and require some level of knowledge to query correctly. For example, running an accurate query requires discerning between types of water monitoring stations, and processing data correctly requires doing calculations to translate values recorded in different ways so that they are comparable.
- Pesticide Use Report (PUR) data are housed in large data sets that a standard home computer will struggle to download and work with (if looking at multiple pesticides over multiple years). We used <http://ziram.lawr.ucdavis.edu/PURwebGIS.html>, a tool that pre-processed some of this data and made it feasible for us to work with it within the scope of this project.

Forging Alliances

All Kern County stakeholders are united in wanting a county with a healthy population, a healthy agricultural economy, and a healthy environment. Bringing these stakeholder groups together to solve problems and innovate solutions will require overcoming the different languages and terminologies these groups use, and understanding that these groups may have different priorities at different times.

The Kern County Food Policy Council has made significant efforts to create a broad base of stakeholders. But gaps still remain that we recommend KFPC address in order to enhance its impact. Broadly, we recommend that Kern County FPC: (1) work to increase participation from the agricultural industry, and (2) provide more opportunities to alleviate misunderstandings between those who focus on social services that target low-income consumers and those who focus on the agricultural industry. We recommend taking every opportunity to attend each other's meetings and partner on projects that have complementary goals.

Opportunities

- Make an extra effort to bring stakeholders from the agricultural industry to the table at Kern County FPC meetings. Ask various people from the agricultural industry to make presentations. Structure times to do "field trips" or visit various stakeholders' offices or sites.
- Explore possible projects (start small) in which groups from different parts of the food system can work together. These opportunities build trust over time, even if their direct outcomes are small.



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