



Mapping the Sacramento Regional Community Food System

Community Food System Networks

November 2021

In partnership with:



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With additional support from:

Mapping the Sacramento Region Community Food System
in preparation for updates to the 2021 Sacramento Region Food System Action Plan

In partnership with Valley Vision and Sacramento Region Community Foundation

Executive Summary

Little is known about how local farms and markets are connected. Identifying critical gaps and central hubs in regional food systems is of importance in addressing a variety of concerns, such as navigating rapid shifts in marketing practices as seen during the COVID-19 pandemic.

Understanding the constellation of growers and markets also informs efforts to shape policies related to how food is grown and equitable access by identifying coalitions of farms and markets that are able to share information with each other and the consumers they serve. Such concerns are central to the Sacramento region food system which contains the political capital of California, some of the nation's highest producing agricultural counties, and rising rates of food insecurity.

Our findings show that the community food system for Yolo County is tightly interwoven with Bay Area restaurants and farmers' markets. Sacramento County possesses network hubs closely aligned with grocery stores and farms in the Central Valley, and its network stretches the length of the state and beyond thanks to numerous connections to large-scale distributors. While El Dorado and Placer counties have less land in agriculture, they both have vibrant community food systems. El Dorado County is famous for its apple orchards, and the community food is characterized by numerous opportunities to visit farms. Placer County, on the other hand, is characterized by many farmers markets, restaurants and institutional purchasing arrangements.

Introduction

Sacramento was branded “America’s Farm-to-Fork capital” in 2012 to highlight the thriving culinary scene and the region’s diverse agriculture, including unique and local food opportunities as well as the many large-scale growers and processors. The Farm-to-Fork concept highlights the region’s farmers’ markets, grocery stores, farm stands, restaurants, and community supported agriculture (CSA), all of which form part of the Sacramento region’s ‘community food system’.

Many farms connect directly with their communities at farmers’ markets and through Community Supported Agriculture (CSAs), and form relationships with local restaurants and institutions committed to supporting the community’s combined needs for a healthy diet, soils, and development patterns. These direct connections help make farming practices and consumer needs transparent, building a more just food system that meets the needs of ecosystems, farmers, farmworkers, and consumers. Because regional pride and mutual support are core values in a community food system, farms and markets often celebrate their partnership. Farms advertise the markets where you can find their food. Similarly, farmers markets, grocery stores, restaurants and institutions proudly showcase the farms that sell or donate food to them. The transparency in supply chains helps build trust in the food system as well as name recognition for the many contributors.

Such collaboration is needed given the pressing challenges that the region and its food system face. Though California’s Sacramento Delta region is home to a large, diverse agricultural sector, many small family farms are located near rapidly expanding urban areas, and compete for land against the housing market. Economic downturns and housing policy can lead to urban areas expanding outward onto less-expensive farmland, instead of upward. Such development patterns cut into highly productive soils and place a strain on small family farms. In addition, the state continues to grapple with new challenges presented by the COVID-19 crisis, with low income and communities of color impacted most severely. Many national food supply chains have been disrupted, and local farmers and ranchers more directly connected with consumers are pivoting distribution to fill gaps.

The resilience and adaptability of local food systems can be further strengthened with community planning efforts that emphasize supporting local businesses, farmland conservation, and social and environmental policies that benefit farmworkers, the food insecure, and family farmers. In addition, many participants in community food systems profess aspirational goals for sustainable food production, processing, distribution and consumption that are integrated to enhance the

environmental, economic, social and nutritional health of a particular place (Garrett and Feenstra, 1999).

Acknowledging the rise of community food systems, the United States Department of Agriculture (USDA) first began collecting direct sale data through the agricultural census in 2002 and produced the first Local Food Marketing Practices Survey in 2015 to “benchmark data about local food marketing practices” (USDA, 2015). Though the USDA measures the number of farms selling directly to consumers in a given county, the USDA does not provide data on the ties between farms and markets within or across counties. Such information can help contextualize the food system and its potential to pivot marketing strategies when faced with challenges, such as the COVID-19 pandemic which saw restaurants and cafeterias close for extended periods of time as consumers turned to buying food they could prepare at home.

In response, the following county-level guides map the transparent food connections across four counties: Yolo, Sacramento, Placer and El Dorado. We gathered online information about farms that advertise where their products can be found and markets that advertise which farms they support. Importantly, our data does not capture all the farms, markets and institutions involved in the regional food system. Instead, this guide emphasizes the transparent market connections, providing a food system assessment to help understand how the many farms and markets are connected, which are central to the network, and what types of marketing are dominant.

The maps of connections draw attention to how local markets interface with regional farms and where there are hubs in the community food system network. The general principle is that if ‘all paths lead to Rome’, Rome is an important hub that can influence the rest of the system. Farms and markets that are more central to the network offer important meeting spots for both building community and policy coordination. Spot light profiles highlight farms and markets at the heart of each food system as well as efforts that center food justice and food security efforts as well as local food banks and institutions. These connections are important not only for Sacramento’s regional sense of place, but also its local economy and the many people who work in the food system and enjoy its bounty. In addition, by noting how the community food networks connect with farms and markets across the state, there is an added appreciation for the reach of the food system and all of the lives it touches along the way.

County Socio-Economic Data

Population

California is home to 39.5 million people according to the 2020 census, and about 6% (2,397,382) of California's total population is spread among the four counties covered in this report. Sacramento County is ranked eighth most populous in the state with over 1.5 million residents. Placer, Yolo and El Dorado are ranked 22nd, 27th and 29th most populous within the State, being home to 404,739, 216,403, and 191,185 people respectively. Between 2010 and 2020, the multi-county population increased by 10.4%, with the greatest increases in population seen in Placer (16.2%) and Sacramento (11.7%) counties.

Race, Ethnicity and Diversity

California has also become more racially and ethnically diverse over the last 10 years, an important consideration for the food system in considering what food is grown, by whom and who runs the many food markets and restaurants that showcase culture through cuisine. In particular, Sacramento County moved up four spots to become the third most diverse county in the State in 2020.

Following national trends, racial diversity has increased across all four counties over the 10 years. However, Sacramento and Yolo counties are racially more diverse than Placer and El Dorado counties. While Sacramento and Yolo counties are no longer white majority (41% and 43% white respectively), Placer and El Dorado remain as such, being 67% and 73% white respectively. In Sacramento and Yolo counties Hispanics account for 23% and 33% of the population, respectively. While 17% of Sacramento and 14% of Yolo County is attributed to the Asian American population. Hispanics are also the second most populous racial group in Placer (15%) and El Dorado (13.8%) counties, followed by Asian Americans: 8.6% and 4.7% respectively. In contrast to the Hispanic and Asian American population, African Americans make up a very small proportion of the population in each of the four counties. In Sacramento County, only 9% (145,825) of the population is African American. In fact, the African American population decreased by 11,095 in Sacramento County between 2010 and 2020. An even smaller number of African Americans live in Yolo (41,211), Placer (25,360), and El Dorado (12,680) counties. As in Sacramento, the African American population decreased on average by 2% in Yolo, Placer and El Dorado counties between 2010 and 2020.

The counties are also home to other racial and ethnic groups that are represented in much smaller numbers. People of multi-racial backgrounds are the most prominent of this sub-grouping and their numbers have grown over the last 10 years across all four counties. In Sacramento and Placer counties 6.5% and 6.3% of the population identifies as bi or multi-racial. Similarly, 5.9% of people in El Dorado and 5.5% of Yolo County identify as bi or multi-racial. Native Hawaiian and Pacific Islanders are also represented. Across the four counties, the largest number of Native Hawaiian and Pacific Islanders can be found in Sacramento County (17,435), followed by Yolo (7,925), and Placer (3,170). Only a small number (1,585) of Native Hawaiian and Pacific Islanders reside in El Dorado County. Even a smaller number of American Indian and Alaska Natives live in the four counties. Among the four counties, El Dorado is home to the largest number of American Indian and Alaska Natives (11,095), followed by Sacramento and Placer with 7,925 American Indian and Alaska Natives in each County. Yolo County homes 6,340 American Indian and Alaska Natives. Over the last ten years, American Indian and Alaska Natives have declined by 0.1% in all four counties. Less than 1% of the County population, across all four counties, identifies as some other race.

Income, Poverty, and unemployment

Next, we consider poverty and food security. Quality of life metrics in terms of income, poverty, employment vary across the four countries. El Dorado and Placer counties have higher income per capita (\$46,669 and \$47,164 respectively), and lower poverty (9.3% and 7.1% respectively) and then the national average. While people living in Sacramento and Yolo counties experience higher levels of poverty (12.6% and 18.1% respectively) and lower levels of income per capita (\$34,603 and \$37,497 respectively) than the national average. People living in all four counties enjoy higher than (national) average median household income and low unemployment rates. Placer and El Dorado counties have higher median household income (\$97,723 and \$87,059 respectively) than Sacramento and Yolo counties: \$72,017 and \$71,417 respectively. Placer and El Dorado counties also have lower unemployment rates (4.6% and 3.0% respectively) than Sacramento and Yolo counties: 5.5% and 5.4% respectively. It would appear that on average those living in Placer and El Dorado counties have more financial security and disposable income than people living in Sacramento and Yolo counties.

Food Security

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While there is significant agricultural production across El Dorado, Placer, Sacramento, and Yolo counties, food insecurity in these counties remains a persistent concern. Proportionally, Sacramento and Yolo counties have higher rates of food insecurity (11% and 10.7%) than El Dorado and Placer counties: 9% and 8.1% respectively. Across the four counties 239,860 people, including children are food insecure and 76,156 households receive food assistance through the Supplemental Nutrition Assistance Program (SNAP), also known as CalFresh. According to the US Census Bureau (2019) CalFresh usage in El Dorado and Placer County is lower (3,744 and 7,198 households respectively) than in Sacramento and Yolo counties (57,019 and 8,443 households respectively). Despite high levels of food production in close proximity to households across the four counties, food access, affordability, and availability remains uneven.

Cultivated Lands

Farms and agricultural land are at the beginning of the food supply chain. Markets, restaurants, grocery stores and cafeterias are at the other end. In addition, food waste can be recycled back to farms, donated to food charities or upcycled into value-added products. In these next sections, we provide an overview of the land in agriculture on the supply end of the food system as well as the many venues for obtaining and eating food in order to gain a better understanding of each county's community food system.

Sacramento and Yolo counties are agriculturally important in Northern California, as reflected in their land use acreage. About 60% of land in Yolo and 40% of Sacramento County is cultivated. With much less land being cultivated, Placer (5%) and El Dorado (less than 1%) counties in the Sierra foothills are home to orchards and diverse agritourism opportunities. Interestingly, across El Dorado, Placer, Sacramento and Yolo, land in grass and pastures ranks the highest in acreage: 77,552, 108,316, 171,893, and 91,175 acres respectively. While Yolo and Sacramento counties saw a decline in land in grass and pasture between 2015 and 2020, El Dorado and Placer counties added acreage in this category (see Table X). It is worth noting that grass and pasture land declined by over 50% in Yolo County between 2015 and 2020.

Production of food commodities are the next group of high ranking cultivated land uses in the four counties. El Dorado County's acreage is dedicated to grape vineyards (905 acres), apple orchards (513 acres), and walnut farms (215 acres). In Placer County rice paddies (13,472 acres) and walnut

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farms (5,260 acres) occupy most cultivated acreage dedicated to food production. While in Sacramento County this title goes to grape vineyards (33,216 acres) and corn fields (15,981 acres). Yolo County on the other end of the spectrum dedicates the largest acreage of cultivated lands to almonds (60,928 acres), rice (38,269 acres), and tomatoes (35,470 acres). While Yolo County still retains large amounts of cultivated acreage, the county has experienced decline in both tomato and rice production acreage - tomato and rice acreage both declined by 49% between 2015 and 2020. Food production acreage grew in the remaining three counties over the same time period, with the most significant increases in cultivated acreage in El Dorado County (see Table X: grapes and walnuts acreage).

Other than food commodities, Alfalfa, other hay, and fallow land occupy the ranks of top five cultivated land uses by acreage, across the four counties. Fallow land ranks third and fourth most intense use of cultivated lands in Yolo (48,003 acres) and Placer County (8,365 acres). Other hay ranks third in Sacramento (31,999 acres) and Placer (9,683 acres) counties for cultivated land use. While AlfaAlfa is the fourth ranked land of cultivated lands in Sacramento 28,765 (acres) and El Dorado (222 acres) counties. Between 2015 and 2020

Overall, agriculture in each county is shifting toward more permanent and higher value crops, such as tree and vine crops like almonds and wine grapes. For example, Yolo County increased the value of wine grape sales from \$45M in 2010 to \$86M in 2017 according to the USDA agricultural census. Similarly, Sacramento County nearly doubled the value of sales from wine grapes from \$92M to \$170M over the same time period. El Dorado doubled the acreage of farmland in grape production from 25 acres to 905 acres from 2015 to 2020. Placer County doubled the acreage of walnuts from 2015 to 2020 from 2,391 to 5,260 acres.

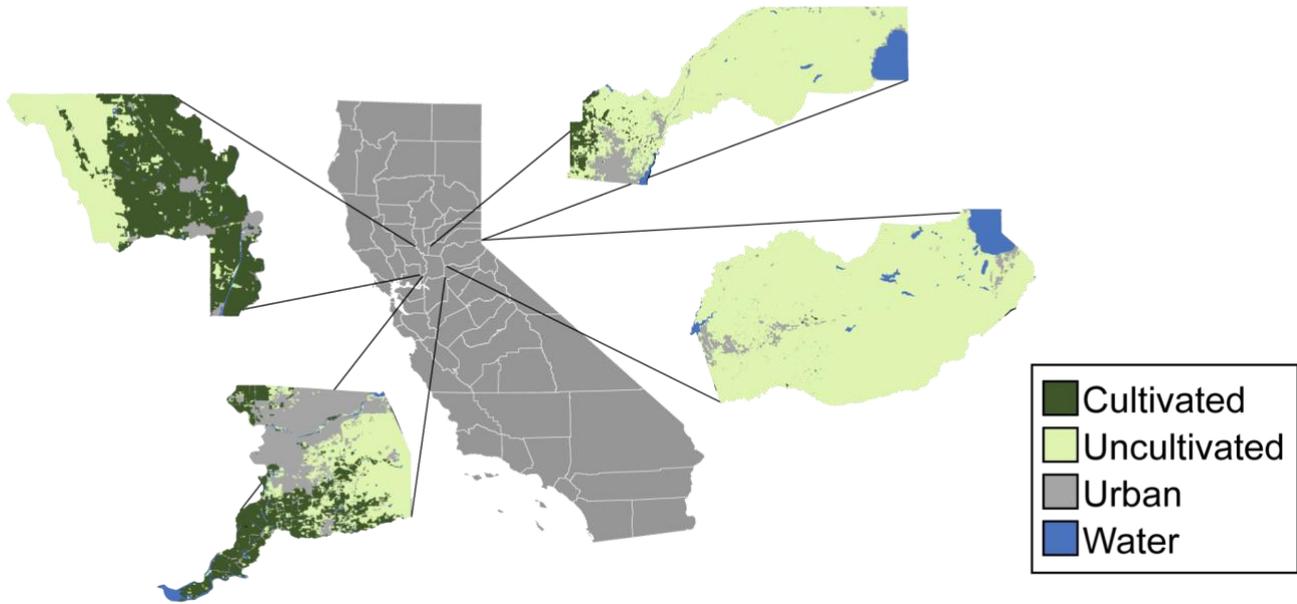
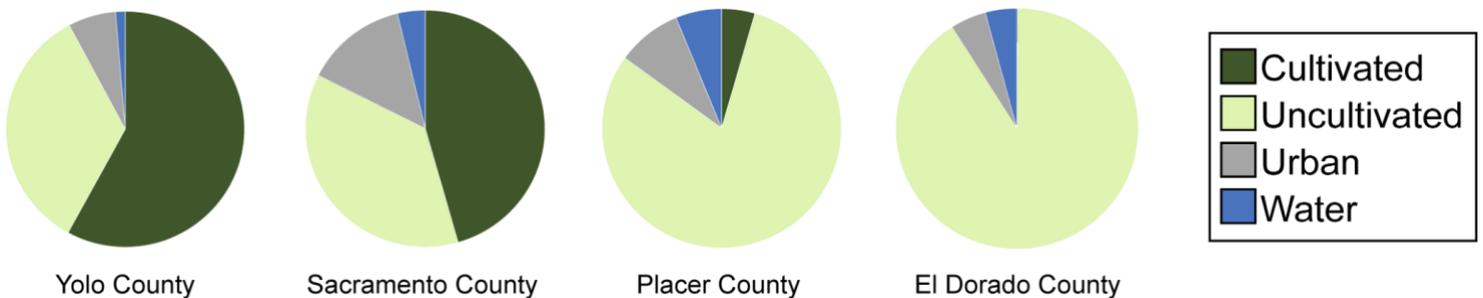


Figure 1. Land use maps. Clockwise from top right: Placer County, El Dorado County, Sacramento County, Yolo County. Source: USDA NASS Cropscape



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Figure 2. Land use pie charts. Source: USDA NASS Cropscape

Top 5 crops by area (in acres) in 2015 and 2020. Information is from NASS Cropscape:

Yolo	2015	1. Grass/pasture (218,907)	2. Fallow/idle cropland (192,544)	3. Alfalfa (82,657)	4. Rice (74,355)	5. Tomatoes (69,875)
	2020	1. Grass/pasture (91,175)	2. Almonds (60,928)	3. Fallow/idle cropland (48,003)	4. Rice (38,269)	5. Tomatoes (35,470)
Sacramento	2015	1. Grass/pasture (194,264)	2. Fallow/idle cropland (32,594)	3. Grapes (31,302)	4. Other hay/non-alfalfa (27,579)	5. Alfalfa (26,570)
	2020	1. Grass/pasture (171,894)	2. Grapes (33,216)	3. Other hay/non-alfalfa (31,999)	4. Alfalfa (28,765)	5. Corn (15,981)
Placer	2015	1. Grass/pasture (90,712)	2. Fallow/idle cropland (31,415)	3. Rice (13,076)	4. Other hay/non-alfalfa (5,643)	5. Walnuts (2,391)
	2020	1. Grass/pasture (108,317)	2. Rice (13,473)	3. Other hay/non-alfalfa (9,683)	4. Fallow/idle cropland (8,365)	5. Walnuts (5,260)
El Dorado	2015	1. Grass/pasture (75,912)	2. Grapes (25)	3. Fallow/idle cropland (19)	4. Walnuts (14)	5. Other hay/non-alfalfa (14)
	2020	1. Grass/pasture (77,552)	2. Grapes (905)	3. Apples (513)	4. Alfalfa (222)	5. Walnuts (215)
Yuba	2015	1. Grass/pasture (78,143)	2. Rice (38,371)	3. Fallow/idle cropland (38,355)	4. Walnuts (19,344)	5. Almonds (6,714)
	2020	1. Grass/pasture (62,257)	2. Rice (39,814)	3. Walnuts (22,376)	4. Fallow/idle cropland (21,710)	5. Almonds (10,587)

Top 5 crops by production value (gross) in \$1000 increments from 2010 and 2017. Data from the California Agricultural Statistics Review

Yolo	2010	1. Tomatoes, processing (87,920)	2. Rice, milling (56,306)	3. Grapes, wine (45,650)	4. Vegetables, unspecified (44,643)	5. Hay, alfalfa (27,878)
	2017	1. Almonds, all (115,020)	2. Tomatoes, processing (86,800)	3. Grapes, wine (86,012)	4. Field crops, unspecified (56,079)	5. Walnuts, english (44,457)
Sacramento	2010	1. Grapes, wine (92,556)	2. Milk, market, fluid (48,631)	3. Pears, bartlett (39,159)	4. Nursery products, misc (28,925)	5. Poultry, unspecified (26,648)
	2017	1. Grapes, wine (170,181)	2. Milk, market, fluid (52,127)	3. Poultry, unspecified (43,472)	4. Pears, bartlett (41,942)	5. Nursery products, misc (32,182)
Placer	2010	1. Rice, milling (27,354)	2. Cattle and calves, unspecified (8,015)	3. Nursery products, misc (5,049)	4. Livestock, unspecified (4,341)	5. Walnuts, english (2,675)
	2017	1. Cattle and calves, unspecified (9,912)	2. Nursery products, misc (8,442)	3. Rice, milling (8,315)	4. Walnuts, english (4,847)	5. Pasture, irrigated (2,700)
El Dorado	2010	1. Apples, all (9,211)	2. Cattle and calves, unspecified (5,705)	3. Grapes, wine (4,899)	4. Pasture, range (4,194)	5. Christmas trees and cut greens (2,219)
	2017	1. Apples, all (22,330)	2. Grapes, wine (8,914)	3. Cattle and calves, unspecified (8,868)	4. Pasture, range (4,660)	5. Nursery products, misc (2,668)
Yuba	2010	1. Rice, milling (70,522)	2. Walnuts, english (35,311)	3. Plums, dried (27,728)	4. Peaches, clingstone (20,100)	5. Milk, market, fluid (11, 323)
	2017	1. Walnuts, english (74,039)	2. Rice, milling (37,082)	3. Plums, dried (33,610)	4. Peaches, clingstone (22,922)	5. Milk, market, fluid (11,966)

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Data on agricultural production is created by the National Agricultural Statistics Service (NASS) using satellite imagery. There are considerable fluctuations year-to-year in terms of land that is fallowed due to crop rotations, water availability or other factors. The data presented here is meant to provide a general overview of trends. Further analysis could provide more detailed insights into where specific agricultural uses are expanding or retreating.

The California Agricultural Statistics Review uses data to compute agricultural values based on official government sources, published industry sources and unpublished information from government and industry.

Network Methods

Centrality in social networks can be measured in many ways. A network can be viewed as directed, where the focus is on food moving from farms to market, or undirected, which highlights the bi-directional social relationships between farms and markets. In a directed network, the centrality measurement emphasis focuses more on the destinations that receive food from multiple farms. In an undirected network, the emphasis is more on farms that participate across multiple marketing pathways. For example, a farm may sell at multiple farmers' markets, offer multiple CSA pick-ups and sell to important institutions and grocery stores that connect with many other farms. Such a farm would rank higher in centrality measurements of an undirected network that emphasized the farm's ability to interface with multiple institutions and shape perceptions about the regional food system.

We use Eigenvector Centrality to indicate centrality in both a directed and undirected network. We also measure the Degree (total number of connections) for every contributor. It may help to think of the network as a game of telephone tag, where the shortest path across the network can transmit information the fastest and most accurately. Eigenvector Centrality quantifies the number of times a contributing farm or market acts as a bridge along the shortest path to connect two other contributors in the network. The more a shortest path needs to go through a given node, the higher the node's eigenvector centrality, and the more influence it has on the connectivity of the network (Freeman, 1977). Farms and markets that are not connected to such central lines of communication may get information/food later. Eigenvector Centrality also considers the relative scores to all contributors in the network based on the concept that connections to more centrally located contributors influence the relative weight of connections. In this sense, Eigenvector Centrality takes into account 'who your friends are' as important to your own centrality. Being associated with groups closer to the center of the network, likely helps you receive information faster and more accurately while being able to provide feedback and shape the overall network more directly. For example, if you only have five friends, but if one of them is Oprah Winfrey, you might have a high eigenvector centrality score for an undirected social network of people in California. Last, Degree measures the total amount of connections a contributor has, not necessarily its positionality in the network. A farm could sell to hundreds of outlets that are not used by any other farm in the regional food system, representing opportunities to partner and a broad array of novel actors. Such

a farm would not appear central in the network. Network Analysis was conducted using the Gephi software package.

To add qualitative findings, we used document review of websites and news articles related to central actors in the network. We also emphasize the social equity efforts of numerous farms and markets, central or not, in order to showcase the potential for the Sacramento Regional Food System to lift up and support such efforts in realizing its aspirational goals as a community food system.

Community Food System Networks

First, we look at how the USDA and the web scrape align and illustrate in ways they differ, and how the additional information captured in the community food network dataset is critical in understanding community food system market architecture. The datasets have the greatest alignment across farmer markets numbers. The USDA reports six farmers markets in Yolo County, 27 in Sacramento, 20 in Placer and 10 in El Dorado. We find that the Yolo community network includes 34 farmers markets, of which six are within Yolo County. The Sacramento community food network includes 19 farmers' markets, of which 14 are within Sacramento County. In Placer County, the community food network comprises 28 farmers markets, of which 12 are in the county. There are 56 farmers markets in the El Dorado community food network, and 10 of these are located in the county. The consistency in farmers market data points between the USDA and web scrape data our research team collected, can be attributed to the online presence of these markets.

On the flip side, the USDA and community food network data for the number of farms differ. While the USDA data reports 136 farms in Yolo County that market local food and 27 that market through CSA, our data includes 68 farms in the network, of which 39 farms are in Yolo County. Similarly, for Sacramento County, the USDA reports 174 farms, of which 19 participate in direct marketing through a CSA. While the community food network for Sacramento contains 222 farms, of which 61 are located in the county. For Placer County, the USDA counts 306 farms, with 25 marketing through a CSA while our data shows that Placer County's food network comprises 154 farms, of which 134 are in the county. Finally, in El Dorado County, the USDA counts 299 farms, with 27 marketing through a CSA but we find 114 farms contributing to the county's community food network, with 110 farms located in the county. Our methods capture farms and markets that

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advertise their connections to one another online with either the farm or the market (or both) located in the particular county.

Since geographical boundaries are irrelevant to markets, our data is better able to illustrate how county level food production is connected to different direct and intermediated markets. Sacramento County has the largest community food network with 222 farms and 609 market connections. We find 68 farms and 441 market connections representing the community food system (CFS) in Yolo County. Placer County’s CFS comprises 154 farms and 375 market connections. Last but not least, El Dorado County’s CFS has 114 farms and 244 market connections. The market connections capture a much larger footprint of county-based farms, and illustrate how each county’s community food system is spatially oriented.

Table 3. Participants in each county Community Food System. Total network participants are denoted by “total” with in-county preceding for farmers markets and farm data in each county. 96% of sites in the ‘other’ category are CSA pick-up locations across both Yolo and Sacramento counties. USDA Farmers’ market information is from 2018. USDA farms with direct sales data is from 2017 (with farms that have CSAs in parentheses); USDA grocery store (2014) and full service restaurant information is from 2016. The only institution noted in USDA data is Farm to school programs, with the latest figures reported in 2015. All USDA information is available on the Food Atlas.

Contributors	Farmers’ Market	Grocery Store	Restaurant	Farm	Institution	Other	Total
Yolo	6 (26 total)	10 (55 total)	5 (40 total)	39 (68 total)	6 (8 total)	34 (189 total)	100 (386 total)
USDA Yolo	6	44	144	136 (27 CSA)	1	NA	
Sacramento	14 (19 total)	99 (105 total)	32 (46 total)	61 (222 total)	10 (11 total)	18 (21 total)	234 (424 total)
USDA Sacramento	27	275	981	174 (19 CSA)	1	NA	
Placer	12 (28 total)	40 (77 total)	14 (20 total)	134 (154 total)	7 (11 total)	10 (20 total)	217 (310 total)
USDA Placer	20	66	306	306 (25 CSA)	1	NA	

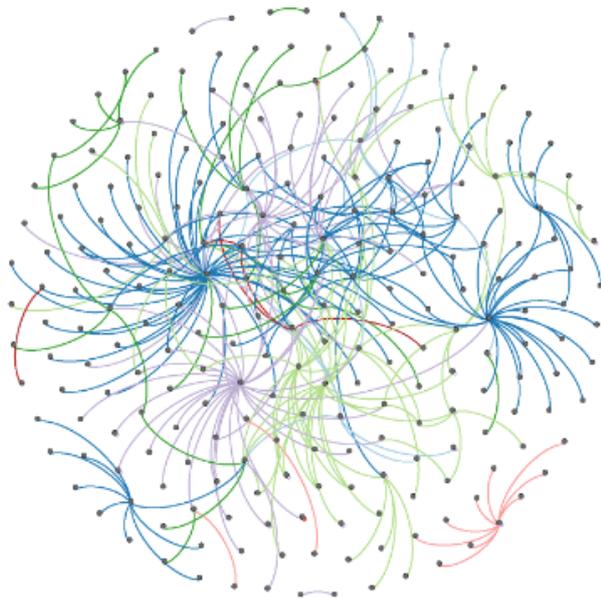
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El Dorado	10 (56 total)	4 (22 total)	7 (10 total)	110 (114 total)	1 (1 total)	8 (11 total)	116 (214 total)
USDA El Dorado	10	33	174	299 (27 CSA)	1	NA	

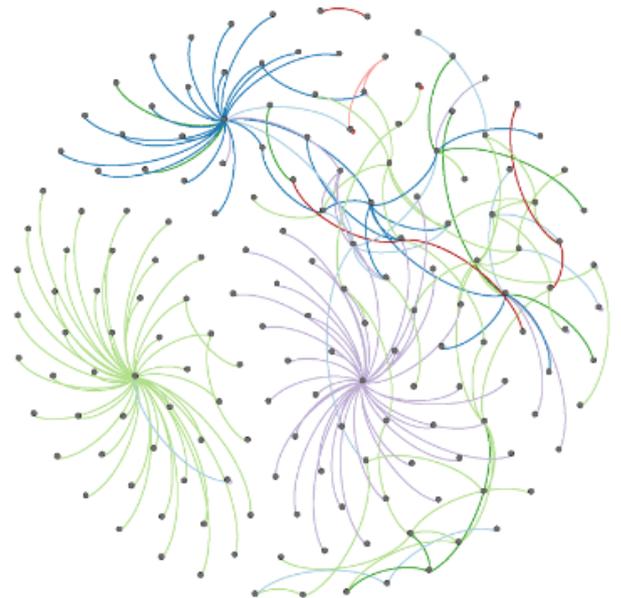
Table 4. Connections. The “other” category includes farm-to-farm sales, sales to distributors, online sales, on-farm sales through on-farm cafes, sales through stores that are not grocery stores (eg. butcheries, gift shops), u-pick, farm stands, online retail outlets, caterers.

	Yolo	Sacramento	Placer	El Dorado
Farmers’ Market	110	73	78	86
Restaurant	32	100	25	10
Grocery Store	64	262	79	31
CSA Pickup	210	8	12	9
Institution	9	14	11	2
Other	16	152	170	106
Total	441	609	375	244

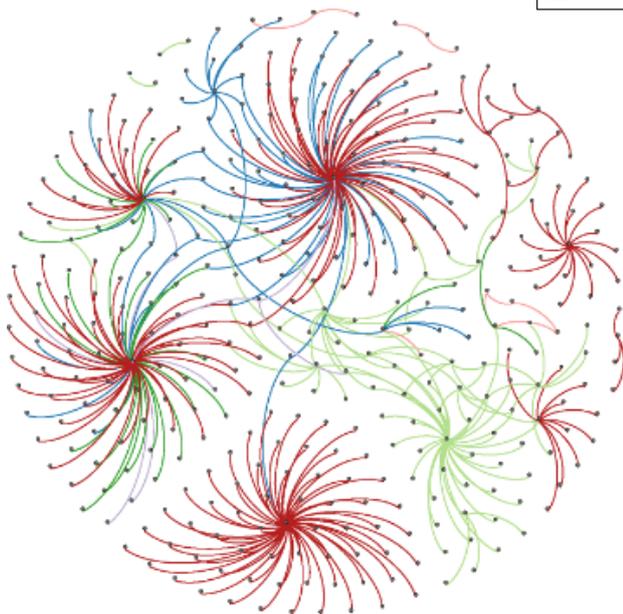
Figure 3. Social network of each county community food system



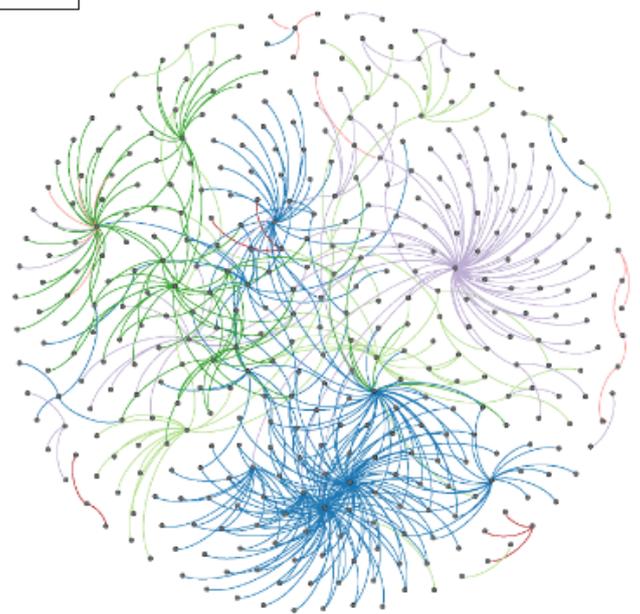
Placer County



El Dorado County



Yolo County



Sacramento County

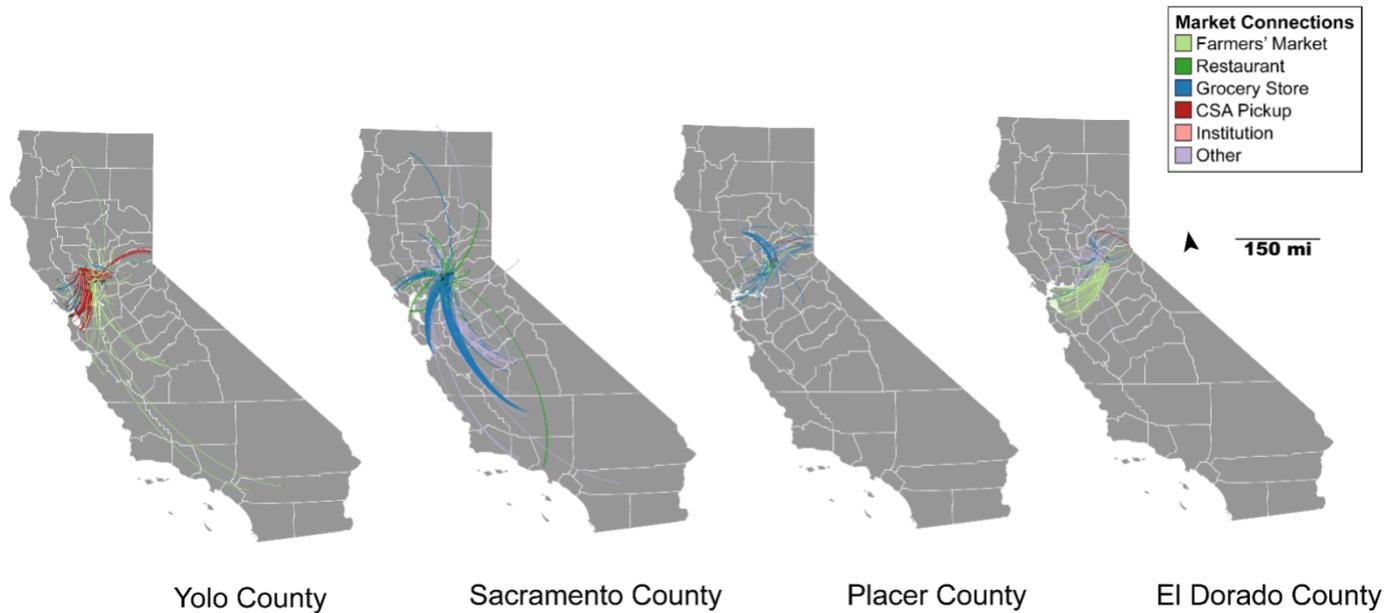
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Spatial Comparison of County Food Systems

While El Dorado, Yolo and Placer County community food systems are relatively focused regionally on the Bay Area, the Sacramento County community food system spans the length of the state connecting farms in the central valley and southern California with the Sacramento region. This difference is partly owed to the many large-scale distributors in Sacramento County that readily advertise the farms and markets that they partner with.

The spatial difference in network connections influences the types of conversations that happen in agricultural communities and across each unique food culture. For example, Yolo County connects with Bay Area eaters via farmers markets there. Such connections mean that Yolo County farmers can draw attention to opportunities and policies that support the county's agriculture while also having access to some of the wealthiest consumers. It is no accident that Capay Valley farms have pioneered organic agricultural practices in partnership with Bay Area restaurants like Alice Waters' Chez Panisse as a result of these close marketing relationships. In this manner, Bay Area markets are cultivating demand for more sustainably produced products.

Figure 4. Maps of each county community food system network



source:

<https://www.cdfa.ca.gov/statistics/PDFs/2017-18AgReport.pdf>

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Yolo County

Yolo County is located in Northern California, about an hour north of the Bay Area and 20 minutes from the city of Sacramento. On a flood plain with ample water and home to 220,500 people, 60% of Yolo County is farmland, with 459,662 acres actively farmed (see Figures 1 and 2). According to the USDA Agricultural Census in 2017, there are 949 farms with an average farm size of 484 acres and median farm size of 50 acres. Yolo County’s farmland use runs the gamut from diverse organic one-acre farms to large industrial tomato processing operations. The county’s top five crops by income are almonds, processing tomatoes, wine grapes, rice, and ‘organic production’ (mixed fruits and vegetables). Notably, Yolo County is home to the Capay Valley, a patchwork of small-scale, family-run farms growing a diversity of organic fruits and vegetables. In 2017, nearly 20% of the farms marketed directly to consumers at farmers’ markets, through CSAs and farm stands, and to corporate cafeterias in the Bay Area (USDA, 2017).

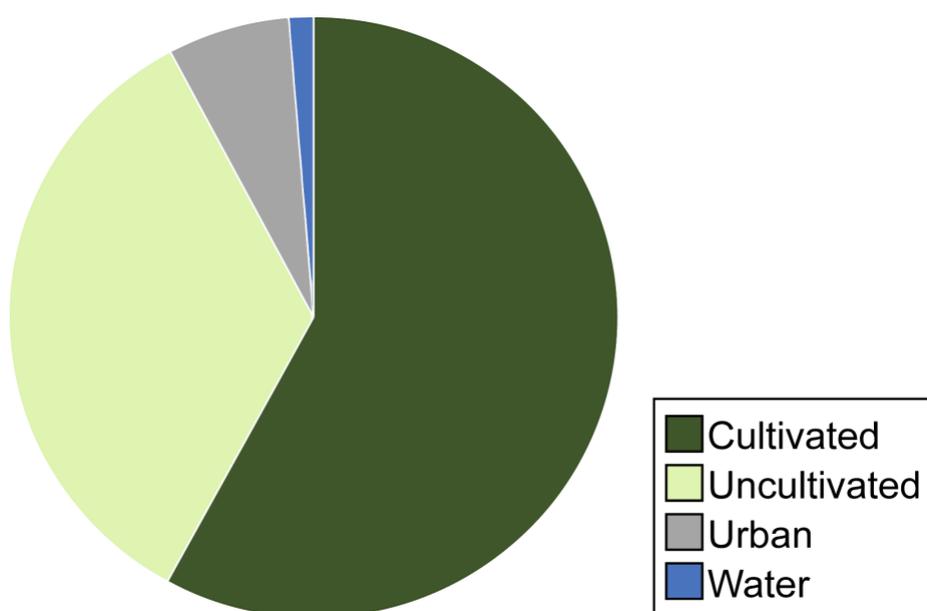


Figure 1. Yolo County land-use distribution. Source: USDA NASS Cropscape

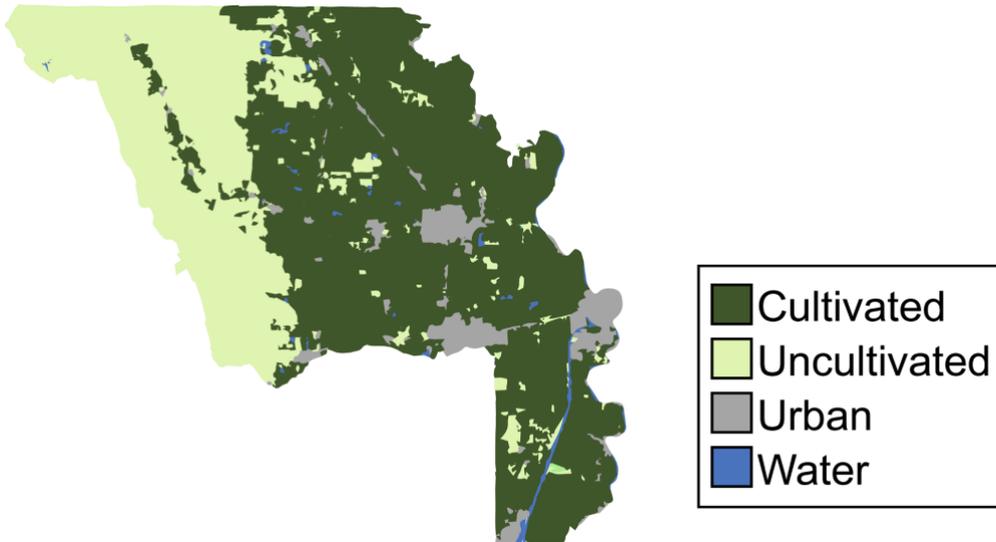


Figure 2. Yolo County land-use map. Source: USDA NASS Cropscape

Of the 1,713 total producers in Yolo County, 13% are Hispanic/Latino and 12% are Black, Asian, and Indigenous. In addition, 14% of farm owners do not have internet access. When compared to all farms nationwide, those with Hispanic or Latino principal operators tend to be smaller both in terms of size and sales. These operations are also less likely to have internet access. While many farms with an established online platform are able to pivot product from restaurants to online CSA sales during the COVID-19 restructuring, many farmers of color begin with less access to existing markets and face a greater struggle.

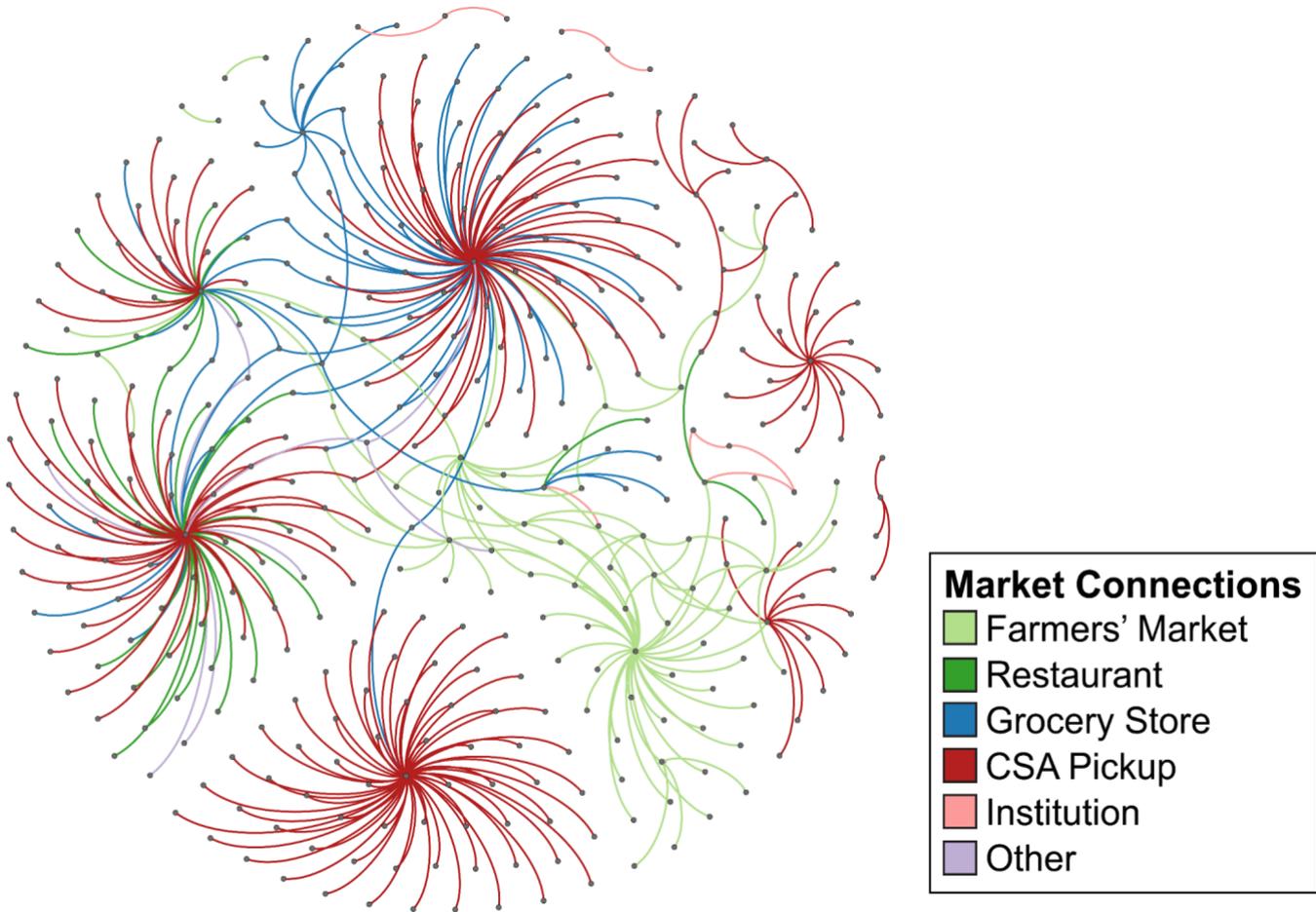
Yolo County’s community food system is tightly connected with surrounding counties and the Bay Area as shown in Figure 3. This map was created by gathering a novel dataset that includes information from farm websites and their first point of sale or donation for unprocessed fruits and vegetables. The network captures only farms and markets that advertise their connections to one another online with either the farm or the market (or both) located in Yolo County. The network represents 40% of the farms that direct market. Figure 3 shows 67 farms and 441 market connections.

The majority of Yolo County’s community food system is supported through CSA sales and farmers’ markets (Table 1). Importantly, many farmers markets are located in the Bay Area, demonstrating the close ties between Bay Area consumers in supporting Yolo County farmers. Grocery stores are the third most prominent market connection for Yolo County farms. Like

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farmers' markets and CSA connections, Yolo farmers are well connected with outlets in nearby counties, and Yolo County local food outlets similarly connect with farms in surrounding counties.

Figure 3. Yolo County social network map.



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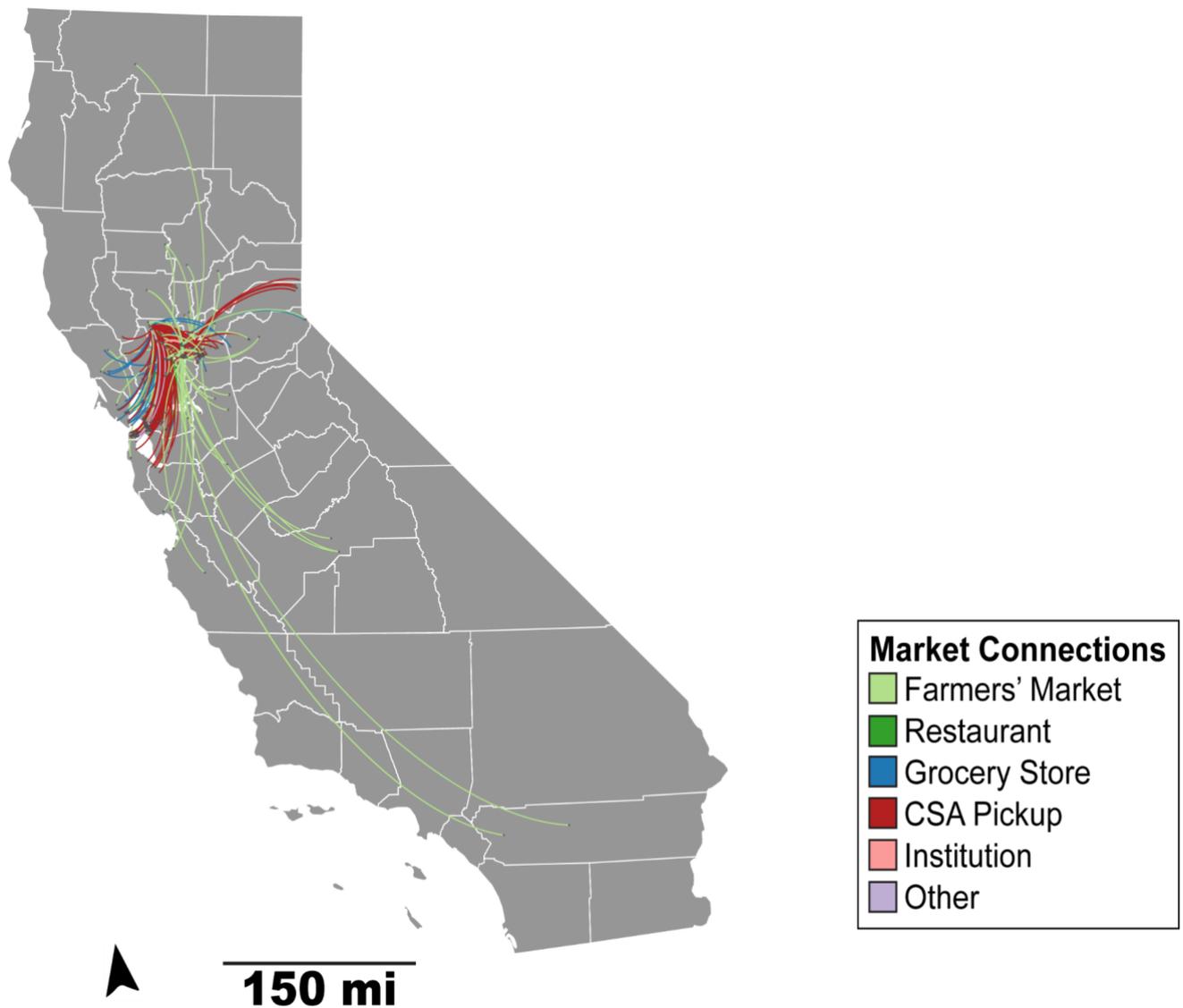


Figure 4. Yolo County geospatial network map.

The network data has 386 nodes and 441 edges.

Spotlight farms

Full Belly Farm and **Riverdog Farm** are both family-owned farms in Guinda, in the heart of the Capay Valley. They both sell their produce through restaurants, farmers’ markets and a CSA that serves Yolo and Sacramento counties as well as the Greater Bay Area. **Terra Firma Farm** is on 200 acres near Winters, in the southwest of Yolo County. They operate a CSA and deliver to cities in Yolo County as well as throughout the Bay Area. **The Davis Farmers’ Market** was established in 1976 and was one of the first markets in the resurgence of farmers’ markets in the

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US. **Rockridge Market Hall**, located in Oakland, is a European-style market hall with a mission to source from family farms within a 150-mile radius.

To grow racial and economic equity within the food system, consumers can support farmers of color and advocate for their inclusion at market outlets. Newer, black-owned farms, like **Black Bicycle Farm** already have an online presence, while other growers of color can be found at network hubs. For example, **Chavez Farms** and **Khang Farm** both sell at the Davis Farmers' Market. Farms with robust online platforms, like **Capay Organic's** online **Farm Fresh to You** are incorporating products from other farms into their home delivery boxes, opening opportunities for partnership with other sustainable growers and farmers of color.

Many farmers may not have any online presence and are not represented in our data. Mien and Hmong farmers offer fresh, affordable fruit at farm stands and produce trucks. Passage of **SB946** in 2019 has legalized roadside food vending across California, but the practice is still illegal in many cities, forcing producers, many of color, to risk arrest in selling their food. You can use public comment to draw attention to the requirement for your city to come into compliance with state code and legalize roadside food vending.

In addressing rising rates of food insecurity, some farms in the network, like **Durst Organic Growers**, donate the food they grow to **Yolo Food Bank**. Food banks provide food regardless of documentation status, making them important for the most vulnerable families, including farmworker families. As food insecurity has more than doubled during COVID-19, continued support for anti-poverty efforts and federal food security programs like, Supplemental Nutrition Assistance Programming (SNAP) and Women, Infant, Children (WIC) are all the more crucial. The **Davis Farmers Market** offers donation options and pick-up in partnership with the **Yolo Food Bank**, making support for socially and environmentally just food systems possible in one place.

Eigenvector/undirected

1. Full Belly Farm
2. Riverdog Farm
3. Terra Firma Farm
4. Say Hay Farms
5. Sacramento Natural Foods Co-op

Eigenvector/directed

1. Davis Farmers' Market
2. San Rafael Farmers' Market
3. Veritable Vegetable
4. Downtown Berkeley Farmers' Market

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5. Downtown Palo Alto Farmers' Market

Degree

1. Full Belly Farm
2. Riverdog Farm
3. Terra Firma Farm
4. Davis Farmers' Market
5. Say Hay Farm

Sacramento County

Sacramento County is home to over 1.5 million people, its most populous city being the state capital, Sacramento, with about 500,000 people. About 12% of the county population in 2018 was food insecure and relied on Supplemental Nutritional Assistance Program support from the federal government according to the USDA. The county spans 636,000 acres, just over 40% of which is farmland. The top five crops by landcover in Sacramento County are grapes, alfalfa, corn, winter wheat, and rice; and by total sales value are: wine grapes, milk, nursery stock, poultry and pears. According to the USDA 2017 agricultural census, there are 1,161 producers in Sacramento County, 2% (23 farms) grow organically, and 15% (174 farms) sell directly to consumers at roadside stands, farmers' markets or through CSAs.

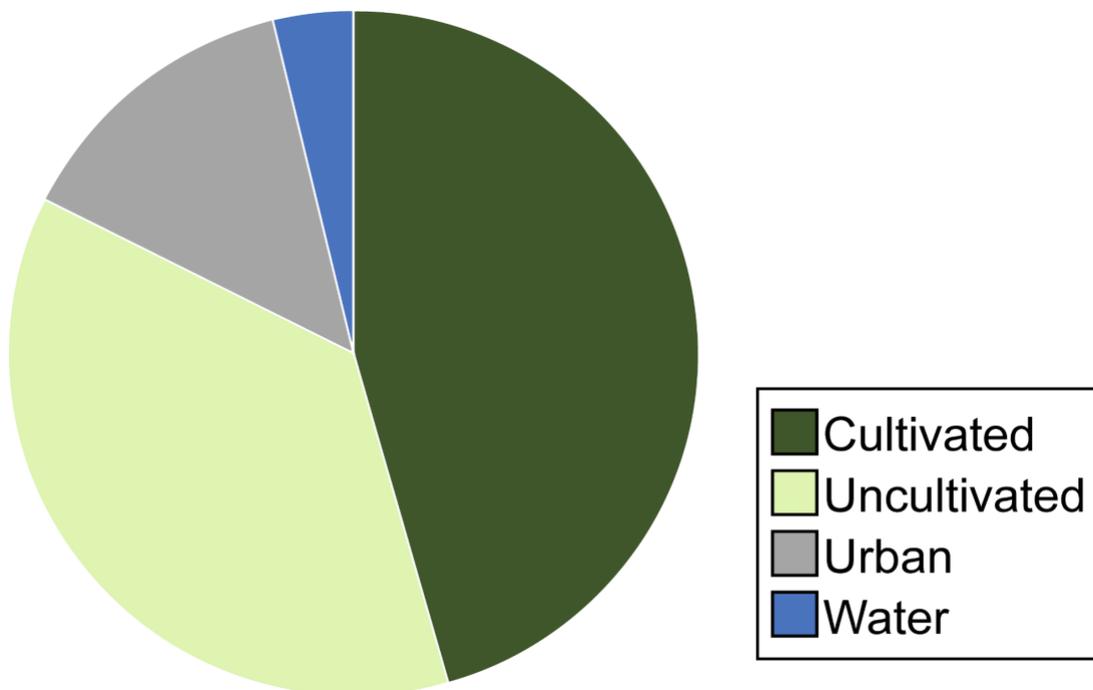


Figure 1. Sacramento County land-use distribution. Source: USDA NASS Cropscape

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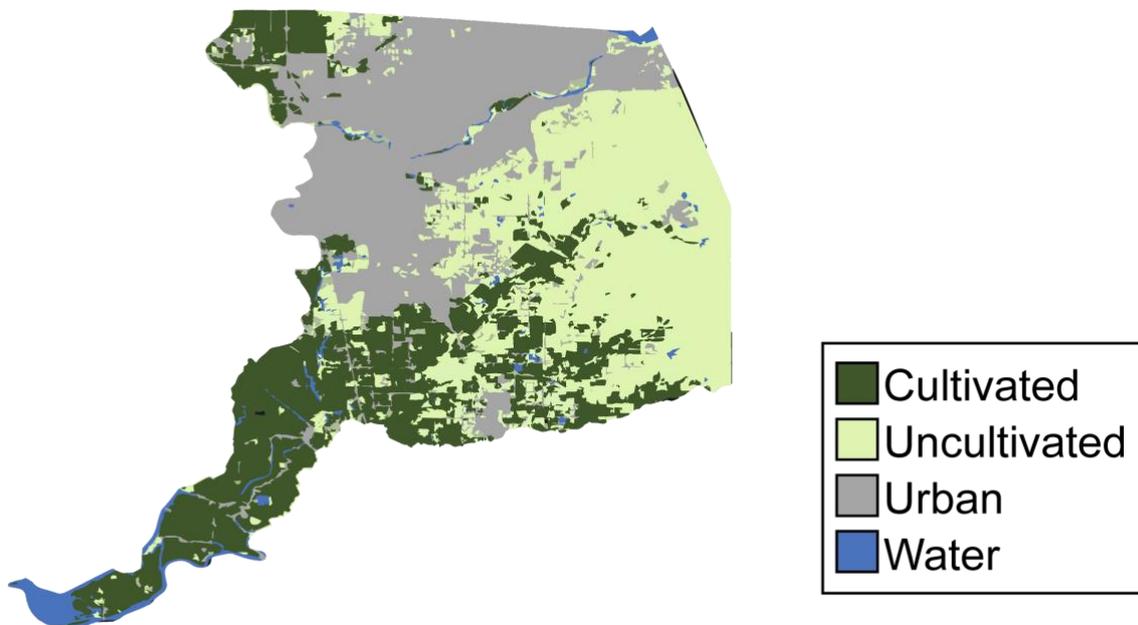


Figure 2. Sacramento County land-use map. Source: USDA NASS Cropscape

Figure 3 was created by gathering a novel dataset that includes information from farm websites and their first point of sale or donation for unprocessed fruits, vegetables, eggs, milk and meat. To be included, the farm, market or both needed to be located within the county and advertise their sales or donations online. The network includes 222 farms and 202 markets with 609 connections, representing 35% (61 farms found in Sacramento County/ 174 reported in 2017 USDA census) of the farms that direct sale in the county according to the USDA. For more information about how the community food system network was measured, please see the methods related to this study at the weblink in the citation below.

The farms and markets that contribute to Sacramento County’s food run the length of the state, and even beyond (Figure 3, top). Most farms in the Sacramento County community food system sell to grocery stores (103 grocery stores, 46% of connections), followed by restaurants (18% of the connections), distributors (17%) and farmers’ markets (19 farmers’ markets, 13% of connections).

The network of transparent marketing ties is shown in Figure 3, bottom. This view highlights the connections across the community food system where some farms specialize in certain marketing practices, like CSA sales or sales to grocery stores; while others are diversified and sell to restaurants, farmers markets and through CSAs. To note, the more a farm or market connects other farms and markets across the network, the more central they are in Figure 3, bottom. From this we

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note that there is not one marketing type that connects Sacramento’s farms, distributors and markets. Connections through grocery stores, farmers’ markets and restaurants are most central, indicating that these venues are good ways of getting to know the food system, share information or tap into coalitions of growers and eaters with shared values.

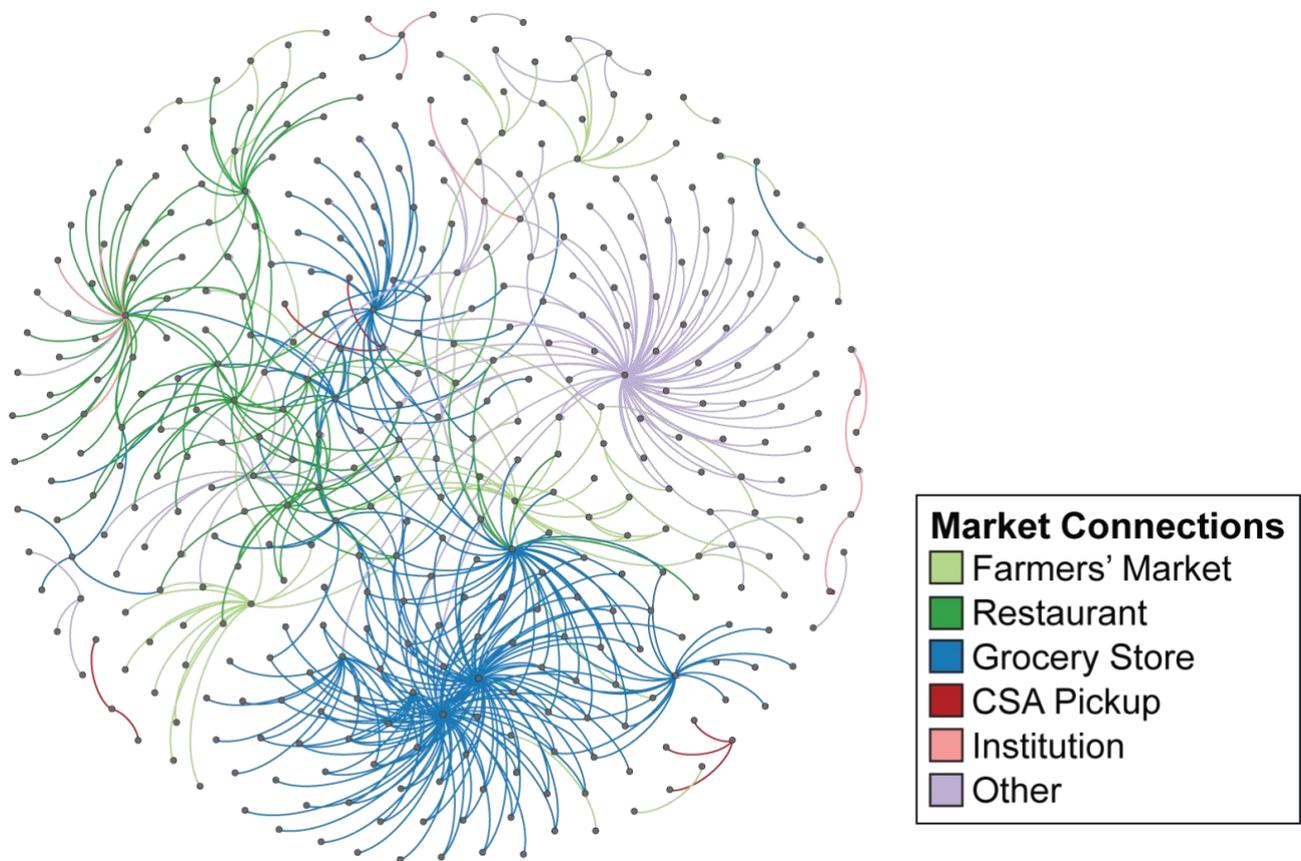


Figure 3. Sacramento County social network map.

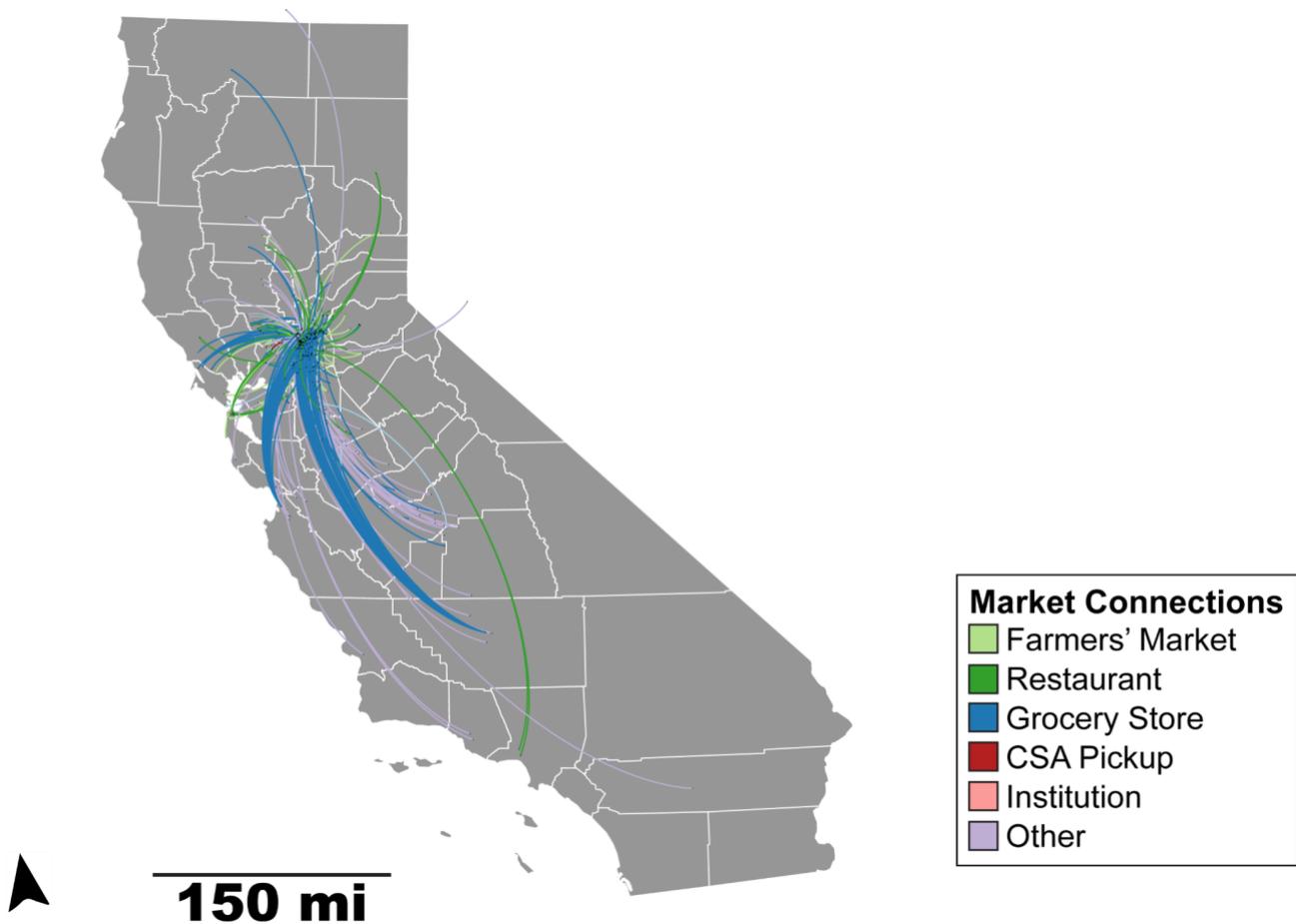


Figure 4. Sacramento County geospatial network.

The network data has 424 nodes and 609 edges.

Spotlight farms

The most central businesses in Sacramento County’s community food system range from large scale operations that sell internationally to urban farms with an explicit focus on social justice. For example, **General Produce Company** is a distributor focused on sustainable business practices located within Sacramento County. They source produce from local farms and export fruits and vegetables throughout the west. **Aldon’s Leafy Greens** is a Controlled Environment Agriculture (CEA) farm that specializes in microgreens. They sell to over thirty local restaurants and donate to a local addiction rehabilitation center, **St. Johns Program**. **Niman Ranch** is a rancher and wholesaler that sources some of their products from a Sacramento based ranch, **Superior Farms**, and sells to several popular Sacramento grocery stores, butcher shops, and restaurants. One such

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restaurant is **The Kitchen**, a Sacramento restaurant that gained a Michelin star in 2019. The restaurant proudly showcases the regional producers they work with throughout the Sacramento Valley. **Seka Hills**, in neighboring Yolo County, provides smaller-scale grocery stores with fresh olive oil, vegetables and nuts. They are owned and operated by the **Yocha Dehe Wintun Nation** and farm with sustainable practices. **Sun's Strawberry** is a nearby berry farm with options to pick your own fruit or buy it from their farm stand. **Davis Ranch** sells fruits and vegetables at their farmstand in Sloughhouse, CA, and they work with the nonprofit **Helping Hands Produce**. The nonprofit allows volunteers to pick the surplus produce and then it is donated to food banks in the Sacramento area such as **Twin Lakes Food Bank**. **Yisrael Family Urban Farm** is a Black-owned farm in the city of Sacramento. They provide the community with educational services and sell products through the **African Market Place**. **Three Sisters Gardens** is a nonprofit that is primarily based in Yolo County, but operate their fruit and vegetable CSA out of two locations in Sacramento County. A Sacramento local specialty grower of black diamond watermelons, **Takemori Farms**, sells their prized fruit to **La Esperanza Supermarket**, a Mexican grocery, restaurant and bakery in South Oak Park. **SK Farm Fresh Produce** grows their vegetables within the county and specializes in Asian heritage vegetables and attends the **Asian Farmers' Market** for AAPI growers.

Eigenvector/undirected

1. Bolthouse Farms
2. Ocean Mist Farms
3. General Produce
4. Niman Ranch
5. Safeway- Crocker Drive

Eigenvector/directed

1. General Produce
2. The Waterboy
3. Onespeed Pizza
4. Sacramento Natural Foods Co-op
5. Seka Hills

Degree

1. General Produce
2. Bolthouse Farms
3. Ocean Mist Farms
4. Niman Ranch
5. Aldon's Leafy Greens

Placer County

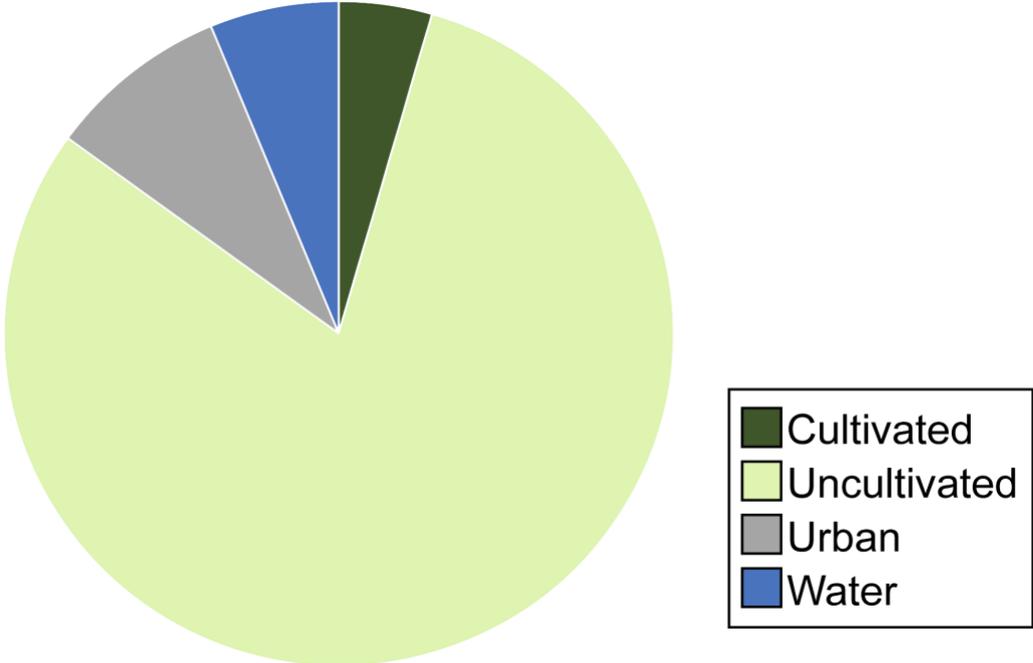


Figure 1. Placer County land-use distribution. Source: NASS Cropscape



Figure 2. Placer County land-use map.

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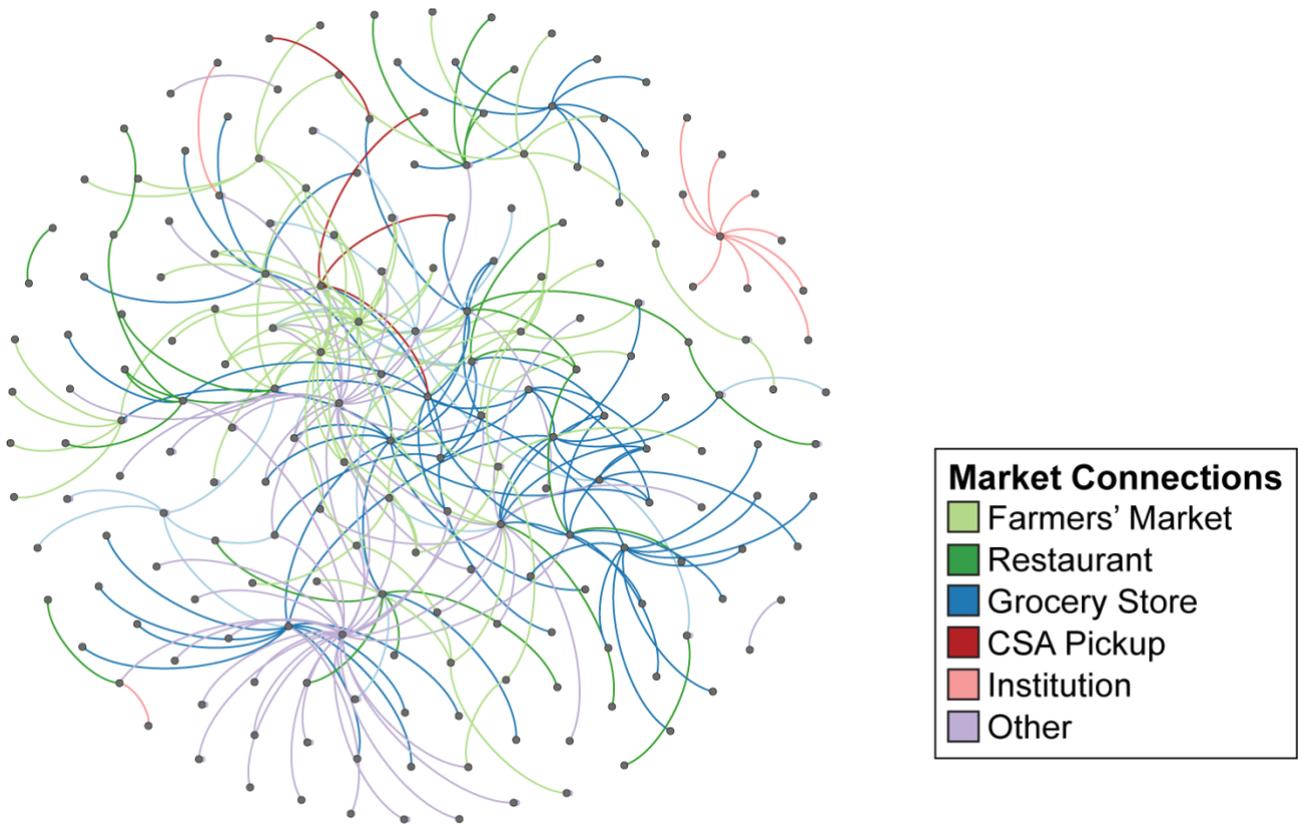


Figure 3. Placer County social network map.

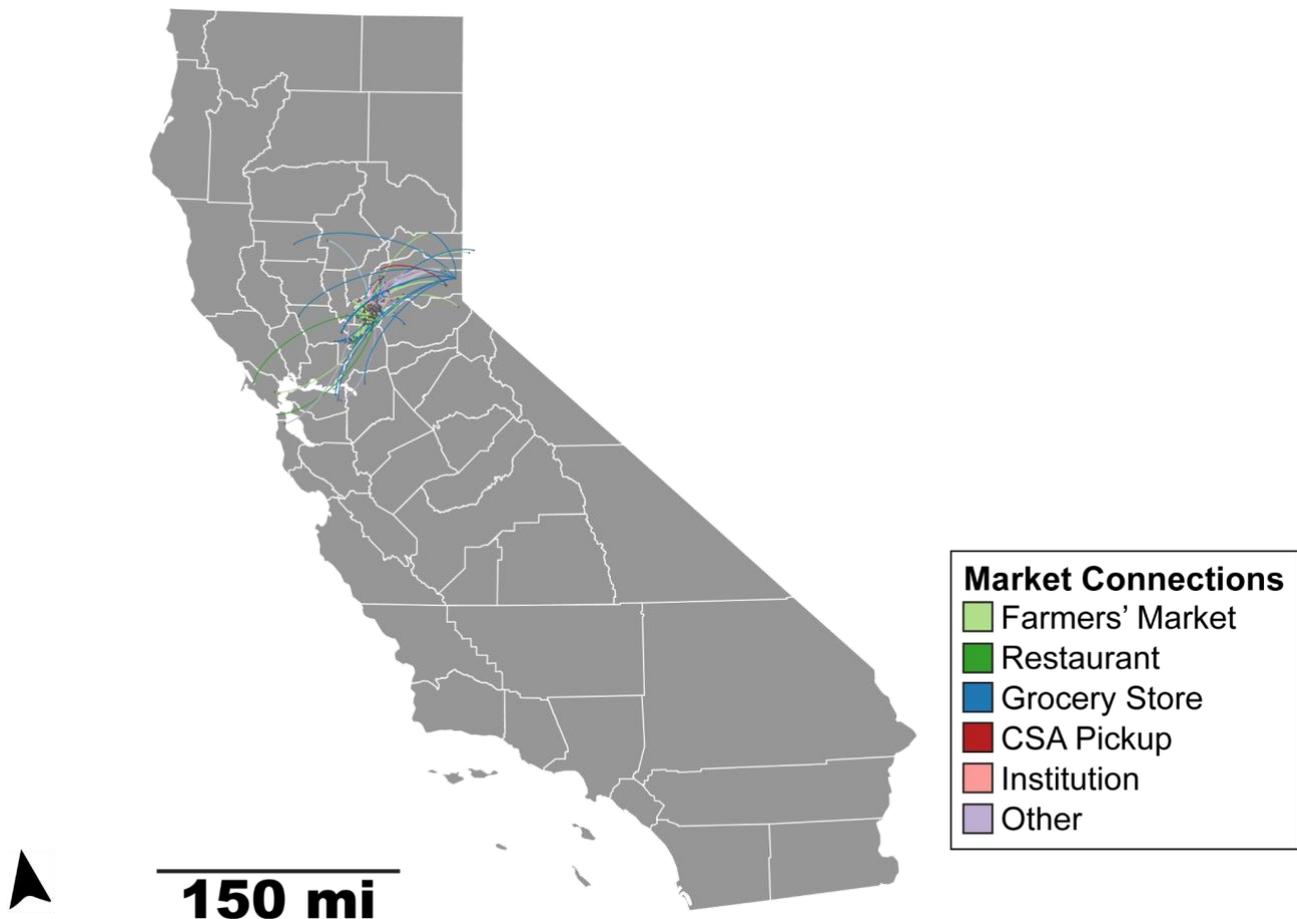


Figure 4. Placer County geospatial network map.

The network data has 310 nodes and 375 edges.

Spotlight farms

The Farmers Marketplace is a Placer-county based food hub created by a farmer offering produce from local producers. The goal of the Farmers Marketplace is to ‘create an efficient and profitable way for local farmers and artisan producers to market, sell and distribute their products while providing our community with convenient access to locally produced food’. The Marketplace was uniquely positioned to step in and facilitate connections between farmers and consumers during the COVID-19 crisis. The **Tahoe Food Hub** is a non-profit organization based in Truckee, CA. They act as a distributor for local food producers and showcase their local producers on their website. Their aim is to increase food access to the North Tahoe area while supporting regenerative farming practices. They also promote healthy eating through their Farm 2 School program and donate produce boxes through the Giving Box. The **Old Town Auburn Farmers’ Market** and **Fountains at Roseville Farmers’ Market** are run by Placer County Grown. PlacerGROWN aims to connect Placer County’s residents with local producers, while providing a market for local, regenerative,

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family-owned farms. They host markets throughout the county on almost every day of the week, and showcase local producers on the PlacerGROWN website. **Baroness Olive Oil** is a family-owned farm in Newcastle, CA producing local olive oil and olive leaf tea. **Feast & Fire** is a family farm in Granite Bay, CA specializing in heritage-breed animals and meat. Along with heritage meat products the farm produces and sells freshly baked breads and pastries as well as canned goods and herbs sourced from produce on the farm. They are developing a homestead education series to support beginning farmers. **Twin Peaks Orchards** has been in Newcastle, CA since 1912. The orchard is home to more than 35 varieties of white and yellow peaches, 20 varieties of white and yellow nectarines as well as plums, pluots, apricots, and prunes. The farm uses exclusively organic farming methods and produces jams from their orchard.

Eigenvector/undirected

1. The Farmers' Marketplace
2. Tahoe Food Hub
3. Old Town Auburn Farmers' Market
4. Baroness Olive Oil
5. Fountains at Roseville Farmers' Market

Eigenvector/directed

1. Tahoe Food Hub
2. Feast & Fire
3. The Farmers' Marketplace
4. Old Town Auburn Farmers' Market
5. Fountains at Roseville Farmers' Market

Degree

1. The Farmers' Marketplace
2. Old Town Auburn Farmers' Market
3. Tahoe Food Hub
4. Baroness Olive Oil
5. Fountains at Roseville Farmers' Market

El Dorado County

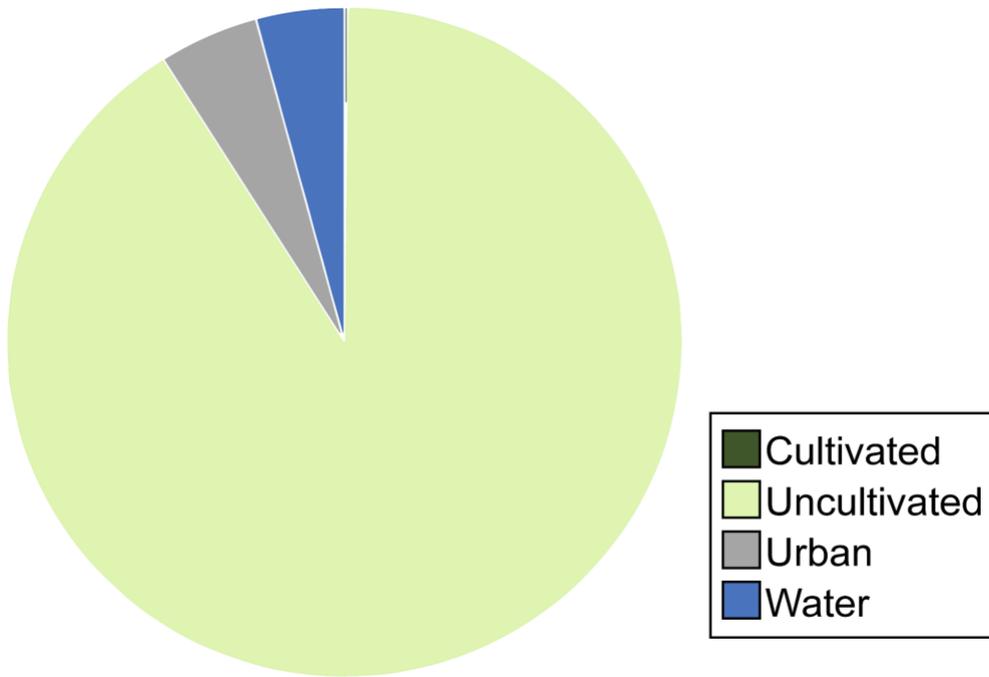


Figure 1. El Dorado County land-use distribution. Source: NASS Cropscape

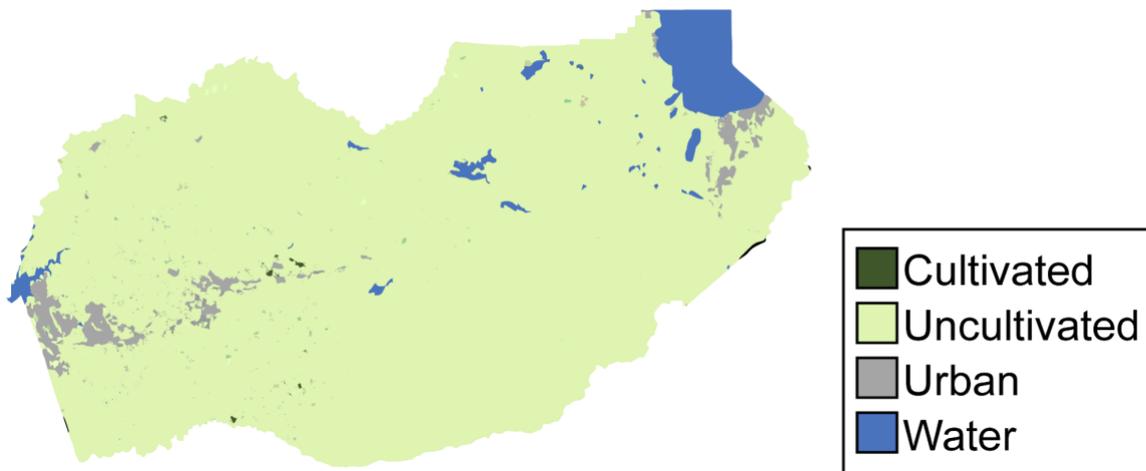


Figure 2. El Dorado County land-use map. Source: NASS Cropscape.

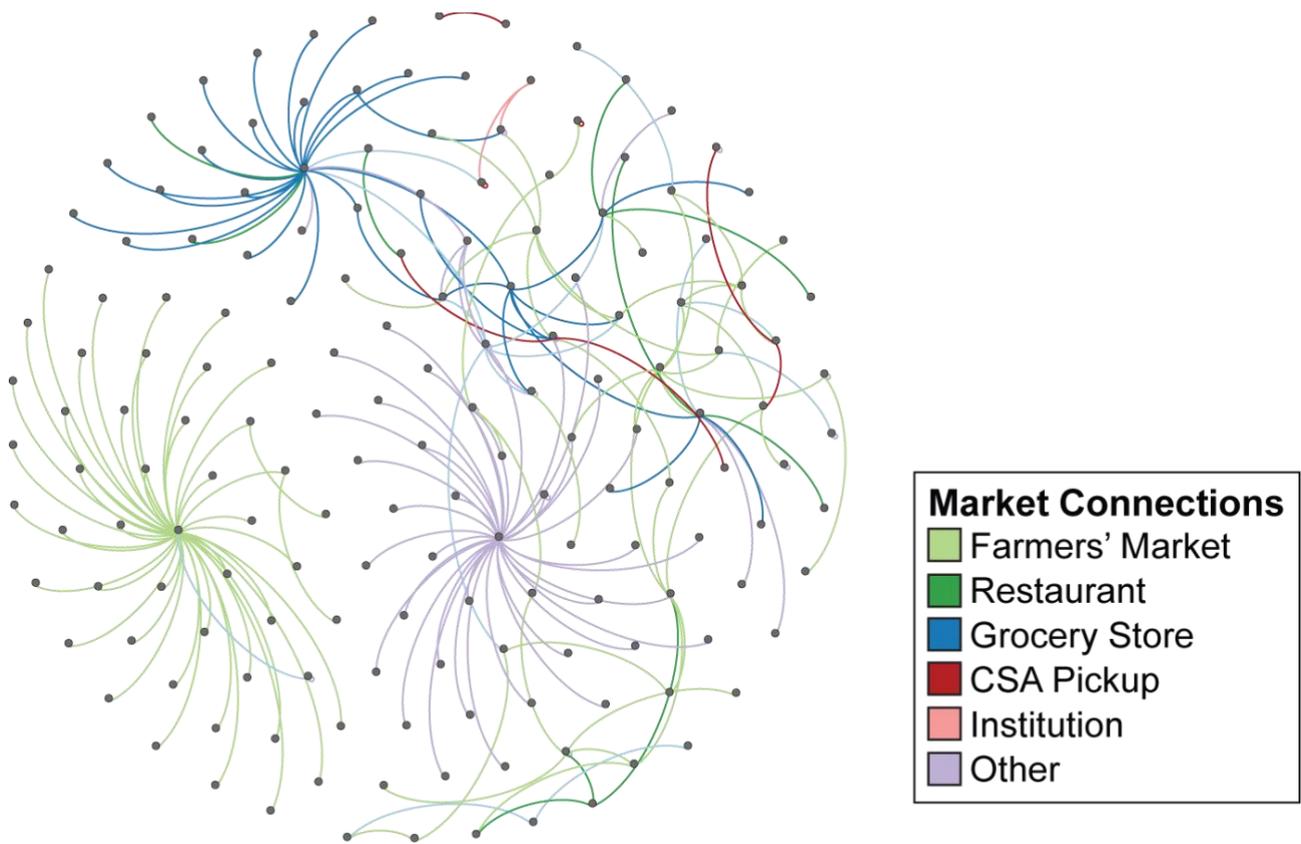


Figure 3. El Dorado County social network map.

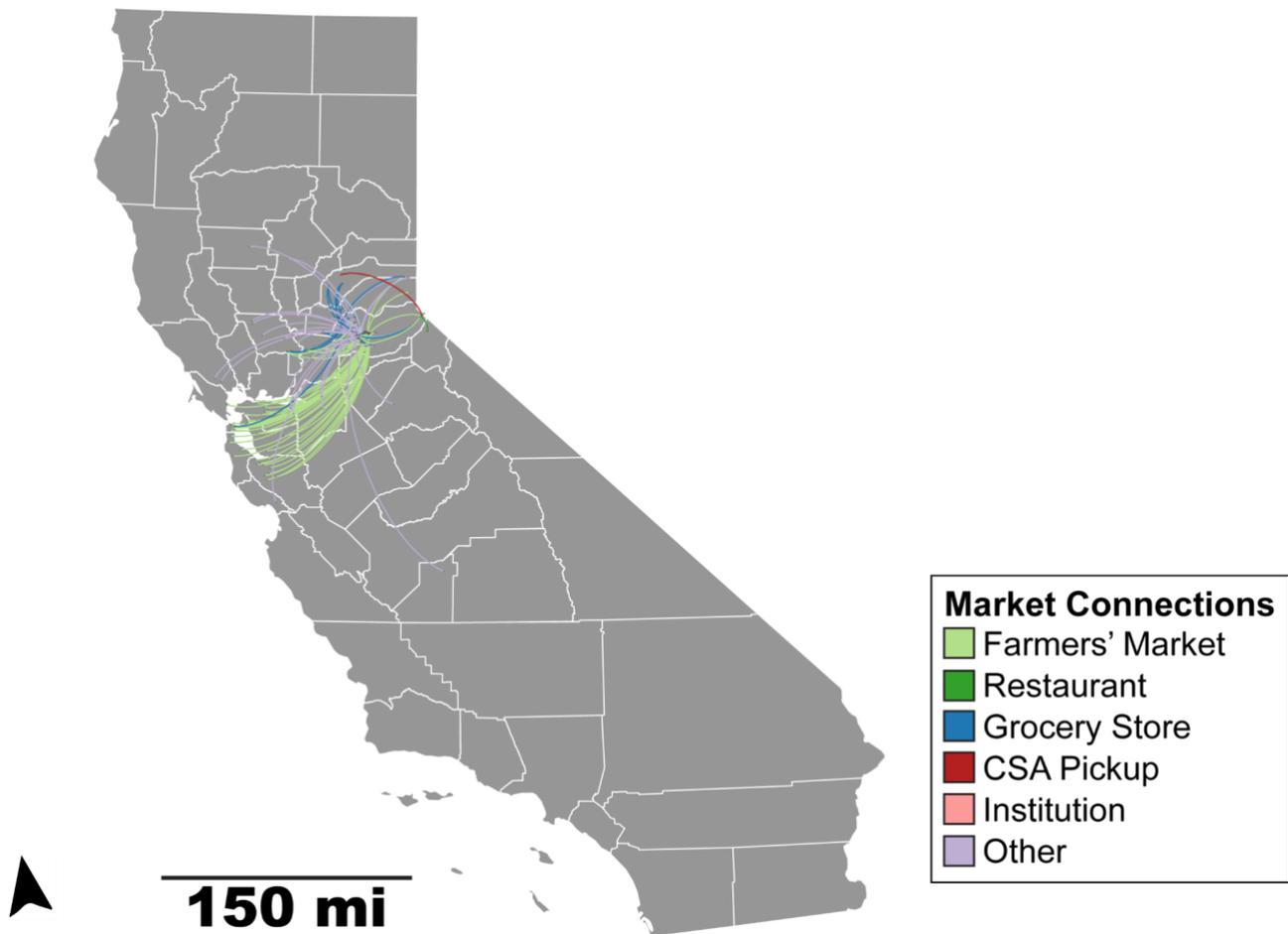


Figure 4. El Dorado County geospatial network map.

The network data has 213 nodes and 244 edges.

Spotlight farms

Rainbow Orchards is a member of Apple Hill Growers in Camino, CA. They grow apples as well as blueberries and stone fruit. **Table Nectar** is a catering company based in Diamond Springs, CA and offering services throughout the foothills area. Their focus is on farm-to-table catering and source much of their produce from local farms, as well as list their producers by name. **Local Yolk** is an egg farm in Pilot Hill, CA. Their hens have full access to the outdoors and non-gmo, organic feed. Local Yolk sells their eggs throughout northern California, mainly in the region but as far as San Francisco. **24 Carrot Farm**, in El Dorado’s county seat of Placerville, is a local hub for farmers in the area. 24 Carrot Farm operates a farm stand where they sell their own produce as well as produce from many other farms in the area. The farm stand is also available online. **Placerville Food Co-op** is a cooperatively-run grocery store in Placerville, CA. The co-op self-identifies as socially responsible and offers many locally grown or made products. **Tahoe Food Hub** is a non-profit organization based in Truckee, CA. They act as a distributor for local food producers and

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showcase their local producers on their website. Their aim is to increase food access to the North Tahoe area while supporting regenerative farming practices. They also promote healthy eating through their Farm 2 School program and donate produce boxes through the Giving Box.

Smokey Ridge Ranch is a farm and winery, and a member of Apple Hill Growers in Placerville, CA. The farm offers u-pick apples along with a variety of other tree crops, and hosts farm-to-table lunches and wine tastings. **Mama Earth Farm** is located in Somerset, CA. The farm offers a CSA subscription and sells at local farmers' markets and grocery stores. **Beals' Orchard** has been in Placerville for three generations. Their produce is available at all the El Dorado County farmers' markets. **Collina di Mela** is an olive farm and olive oil producer in Placerville, CA and an Apple Hill Grower. Their olive oil has been award-winning several times over the years.

Eigenvector/undirected

1. Rainbow Orchards
2. Table Nectar
3. Local Yolk
4. 24 Carrot Farm
5. Placerville Food Co-op

Eigenvector/directed

1. 24 Carrot Farm
2. Table Nectar
3. Tahoe Food Hub
4. Smokey Ridge Ranch
5. Mama Earth Farm

Degree

1. Rainbow Orchards
2. Table Nectar
3. Local Yolk
4. Collina di Mela
5. 24 Carrot Farm

Conclusion

The data we present here show the difference between each county's food system, its primary focus and how inter-related marketing practices are. Importantly, the data we show focus on transparent marketing connections. There are numerous connections of both sales and donations in each county food system that are not publicly advertised on the internet and would therefore not be included in this report. In part, this is because many places do not advertise their connections. While this is a limitation of the research, it is also a real limitation in building coalitions across the food system and mutually reinforcing acknowledgement of growers and connected businesses/eaters.

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