

Potential Demand for Local Agricultural Products by Mobile Markets Concord, California

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Abstract:

The objective of this agreement is to evaluate the potential impact of the emerging mobile markets distribution system on sales for farmers providing locally grown foods. This is a case study of the Concord, California and other communities in the East Bay Area, to assess the potential demand for local produce and farmers' interest in sales to mobile markets and mobile food pantries. Using in-depth interviews with mobile markets, a food bank and non-profits, as well as urban farmers, we find that the Bay Area has a thriving demand for local food among the more affluent. While the growing number of farmers markets increases consumers' convenience, this appears to spread sales more thinly across the markets raising costs to farmers because they have to sell at more markets. The local food bank has been successful at getting fresh produce to their clients; half of the food they give to the poor is fresh produce, most delivered with mobile food pantries. Their clients are often the same people that are targeted as customers by mobile food markets. While the region has access to a tremendous variety of fresh produce, the participants raise concerns about the ongoing drought.

Introduction

Although farmers have successfully produced an abundance of food, many areas in the US are defined as food deserts and food insecurity affects nearly 16% of the US population and about 15% of California's population (Feeding America, 2014). This is despite the fact that US households spend the lowest percentage of income on food in the world (Seale, Regmi and Bernstein, 2003) and the percentage spent on food at home has declined steadily in the US over the past century (US Department of Labor, 2015).

The role of a vibrant agricultural sector to produce healthy food is crucial to food access. Small farms are the primary suppliers of fresh local food, for which the demand is increasing (USDA ERS, 2011). However, farmers are getting older (average age currently 58.3 years) and the number of beginning farmers decreased by 20% between 2007 and 2012 (USDA, 2014b). As a result, from 2007 to 2012, the US lost 4.3% of its farms while farm size increased (USDA 2014a), raising concern about who will farm in the future. A similar pattern has occurred in California where about 4% of its farms were lost over the same period.

Mobile markets and mobile food pantries are channels that can increase access to healthy, fresh foods. They make locally grown produce accessible by reaching communities that do not have

access to a grocery store. In addition, they may provide increased convenience to consumers and increased markets to farmers.

Mobile markets and mobile food pantries differ in structure, mission, and challenges. Mobile markets can be non-profit, for profit, offer only fresh produce, or include a full range of grocery items. The produce can be local, organic, or conventional and sold at full or discounted prices. Non-profit mobile markets require outside funding; food prices usually cover only the cost of product and not the full cost of labor, transport and operations. Some of the challenges mobile markets face include: lack of advertising, affordability, lack of convenience in terms of hours and products offered, offering sufficient value and service, and lack of trust from the communities they serve (Zepeda, Reznickova and Lohr, 2014).

In contrast, mobile food pantries distribute free food. Some offer a full range of foods while others focus on fresh items, especially produce. The latter is a response to critiques about the nutritional quality of food pantry food (Akobundu et al. 2004). Furthermore, food pantries no longer operate as emergency food sources; many people rely on them as a regular source of food (Daponte et al. 1998), hence nutritional quality needs to support long-term health. Mobile pantries are sustained by volunteer labor, donations, and a food bank system that sources and distributes food. Donations are tax deductible and donors of food are protected by the Good Samaritan Act.

In this case study of the East Bay Area we investigate whether mobile markets and mobile food pantries can provide farmers with a venue to increase their sales as well as increase access to healthy foods by the food insecure. We interview mobile market managers, a food bank that operates mobile food pantries, farmers, and local food organizations. The farmers interviews include insights about obstacles to becoming a farmer or increasing sales. We also conduct a survey of farmers and their interest in selling to mobile markets and selling or donating to food pantries.

Study Site: Concord, California

Concord, California is a suburban site surrounded by other suburban towns near a large urban area. It is unique because the high population is located near large-scale fresh produce production. Contra Costa and Solano counties have relatively low rates of poverty and food insecurity (Table 1). In contrast, nearby Oakland has 20.5% overall and 29.3% child poverty (US Census, 2013). The low levels of poverty in Contra Costa and Solano counties are partially due to having very affluent communities, such as Orinda and Walnut Creek. For instance, Walnut Creek has only 5.3% and 4.1% overall and child poverty, while Concord is at 12.1% and 16.9%, respectively (US Census, 2013). Furthermore, the high cost of living, particularly housing, in the East Bay Area mean the official poverty cut-offs may not reflect the true level of economic stress.

While there are not many USDA defined food deserts in the area using the one or half-mile limit (USDA ERS, 2015), some of the communities we included in this study (Concord, Martinez, and Oakland) do comply with this definition (Figure 1). Given the lack of public transportation and the high cost of living, this map of food deserts may not reflect the true food access in the area.

Table 1. Rates of poverty, food insecurity and SNAP benefits Concord area, California, and US

Variable	Contra Costa County	Solano County	California	United States
Overall Poverty*	10.5%	13.0%	15.9%	15.4%
Child Poverty*	13.8%	18.8%	22.1%	21.6%
Food insecurity overall**	12.9%	15.2%	15.0%	15.8%
Food insecurity child**	19.8%	22.6%	25.1%	21.4%
SNAP benefits*	5.4%	8.2%	8.1%	12.4%

Sources: *US Census (2013) **Feeding America (2013)

Similar to the US trends, farm numbers in California decreased between the 2007 and 2012 agricultural census, as did the number of farms in Contra Costa and Solano counties (Table 2). Despite the decline in farm numbers, the number of vegetable farms in California has increased by over a third. There were 2,200 more vegetable farms in 2012, the majority of which are in the 0.1 to 0.9 and 1 to 4.9 acres categories (about 2,000 of new farms). These were mostly located in costal counties, often close to urban centers; Sonoma, Santa Clara, San Luis Obispo, San Diego, Sacramento, Los Angeles, Humboldt had over 100 new vegetable farms each (USDA, 2012)

Despite the decline in farm numbers, the acreage under cultivation has increased somewhat, leading to slightly larger farms in California and Solano County. While average farm size exceeded 300 acres, 64.8% of California farms are less than 50 acres (USDA, 2012). Acreage and farm size has declined in Contra Costa, which has been under more development pressure than Solano County.

In 2012, there were 179 farms with under \$1,000 in sales in Contra Costa County and 214 in Solano County. In 2012, just over half the producers in Contra Costa (52%) and Solano (54%) counties farmed as their principal occupation. Farmers in Contra Costa were slightly older (61.6 years) compared to Solano County (60.8 years). This compares to the average California producer (60.1 years), who is somewhat more likely (55%) to farm as their principal career (USDA, 2012).

The Bay Area is unique in that it has over 60 farmers markets. Larger farms may operate in 50 of those markets, many of which operate concurrently. This situation means many farmers hire or contract vendors to sell at farmers markets for them. In some cases, the farms are located over 300 miles away, so the produce is transported to a distribution point where the vendors pick it up and take it to farmers markets.

Figure 1. East Bay food deserts (green = low-income and one mile; orange = low-income and half-a mile away from a grocery store)

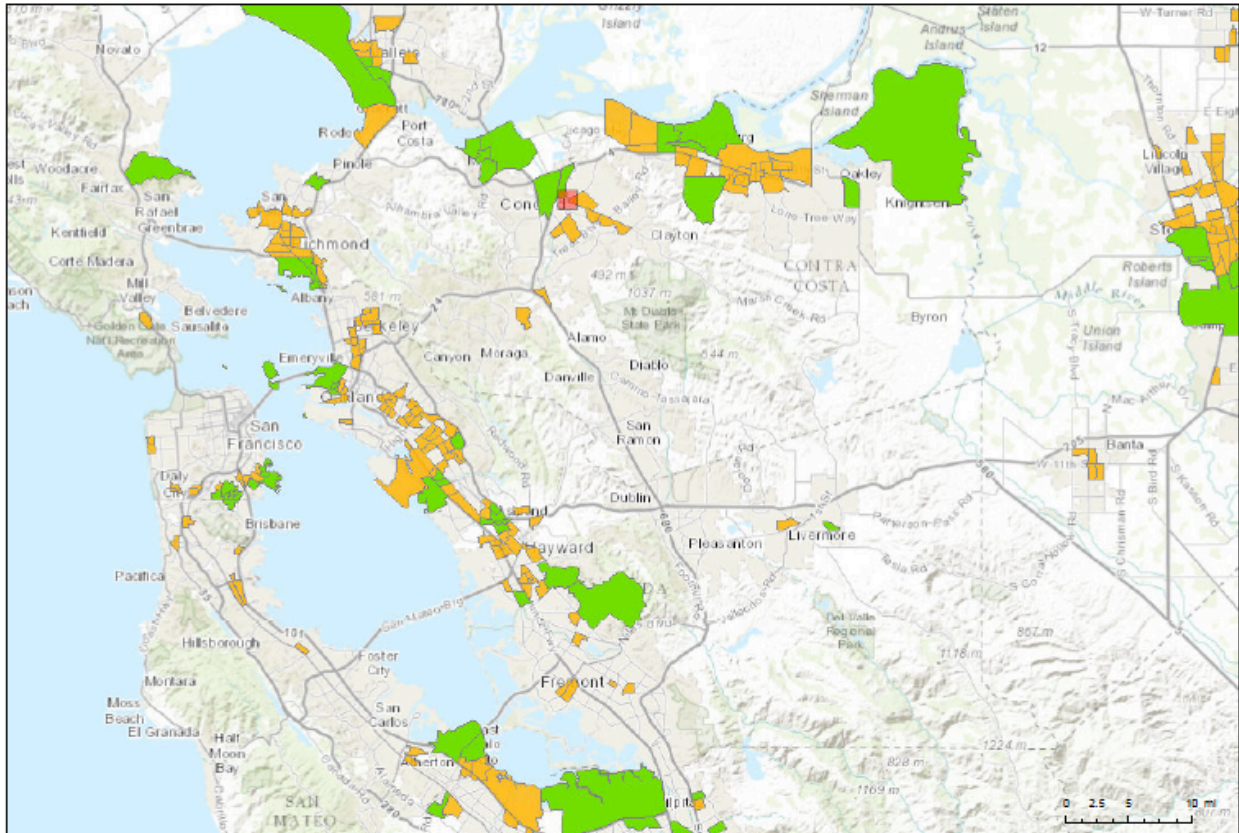


Table 2. Farming in Contra Costa County, Solano Counties and California, 2007 and 2012 Agricultural Census.

Variable	Contra Costa County		Solano County		California	
	2007	2012	2007	2012	2007	2012
Overall farms (#)	634	602	890	860	81,033	77,857
Total acres	146,993	127,670	358,225	407,101	25,364,695	25,569,027
Average farm size (acres)	232	212	403	473	313	328
Vegetable farms (#)	28	66	50	67	3,868	6,055

Source: USDA (2012)

Methods

For this study, we conducted in-person, semi-structured, in-depth interviews and a survey of vendors.

Interviews

Our research design includes one FMPP funded mobile market, a for-profit home delivery/mobile market, a food bank, a mobile food pantry, local food organizations and local farmers. We examine how each organization is promoting local farm sales and local food access in and around Concord, California and additionally, what the obstacles are to increasing farm sales in the area.

In general, we select participants who distribute significant amounts of fresh, local produce in the region of interest, either for profit, at cost, or for free. The FMPP mobile market is at the center of our study. Its parent organization, Pacific Coast Farmers Market Association and Contra Costa Farmers Markets are two area organizations that operate local farmers markets in the area. The local food bank, Food Bank of Contra Costa and Solano, distributes free food in the East Bay area and its mobile food pantries are an important source of fresh produce for many residents in the region. Another organization, Urban Farmers, is a gleaning organization that promotes community philanthropy through donating tree-fruit and volunteering; they donate the fruit to an organization that distributes it to people in need. Finally, Doorstep Farmers is a for-profit aggregate CSA/home delivery service for local food.

In addition, we talked to three urban farmers who were found through an online search of urban farmers in the area. All three had an active presence online and responded quickly to interview requests. While we attempted to interview rural farmers that we identified through local farmers markets and Local Harvest websites, out of the 16 farmers we found within driving distance from Concord, none responded after multiple phone calls. At other sites for this project, we have been successful at recruiting local farmers directly at farmers markets; however, given very few farmers actually attend farmers markets, this was not possible at this location.

The participants were interviewed at a convenient location during field data collection on June 13-18, 2015. Participants received \$50 in compensation. The semi-structured in-depth interviews consist of eight questions for mobile market/food pantry managers and six questions for farmers (Appendix). This format allows for comparison across participants as well as pursuit of emerging themes and clarifying answers. Prior to the interview, participants were informed about the purpose of the study and were asked to sign a consent form allowing the use of quotes to illustrate responses. Interviews lasted between 48 to 113 minutes (73 minutes on average) and were audio recorded.

The interviews were transcribed by a professional transcription service and checked for accuracy by both co-authors. The interviews were then coded to answer the questions central to this project: specifically what are the advantages and disadvantages for mobile markets to source from local farmers, what are the advantages and disadvantages for farmers to work with mobile markets, do mobile markets make fresh local food more accessible and what are other obstacles to farming in the area? The results are presented in the Interview and Survey sections together with vignettes about organizational structure and operations of each organization.

Surveys

The researchers identified three farmers market operating during the site visit. At these markets 10 produce vendors were asked to participate and agreed to do so. However, six of these participants were employees of the farmer or independent vendors. Those participants are therefore not counted in the averages for information about the farm operator. Where lack of knowledge about the farm prevented them from answering, the total number of participants is shown in parenthesis next to the reported statistic. Three surveys were completed by interviewed participants and two surveys were filled online, resulting in a total number of 15 survey participants (nine farmers and six farm employees/vendors).

The farmers were approached by a researcher, who introduced herself and informed them about the study using verbal consent. The researchers enumerated the survey taking notes. The survey took about 5 to 10 minutes to complete depending on the number of customers approaching the farmer during the survey. They were asked about their farm size and farm products, the venues they use to sell their product, their waste, their sales and obstacles to expansion. The surveys are summarized in the Survey Participants section.

Survey Results

Nine farmers and six vendors completed the survey. The vendors were not involved in farming; their primary job was to sell at farmers markets. The farmers responded either online (2), at a farmers market (4), or participated in the interviews (3). All the vendors were recruited at the farmers market.

The farmers were on average 52 years old, white (89%), and had been farming for an average of 20 years, with four farmers farming eight years or less and five farmers 20 years or more. The vendors were younger (39 years old on average) and two-thirds of them were white. The gender split is even in both categories. With regards to other jobs, for 78% of farmers and 33% of vendors, agriculture is their primary occupation. Two-thirds of the farmers are second-career farmers; out of the four vendors who responded to this question, half had other jobs previously.

While the average size of a farm for all the respondents was 152 acres, the vendors work for larger farms than those of farmers who sell at the farmers markets themselves. In order to sell at multiple farmers markets, large farms hire employees or independent contractors as vendors. The average farm size was 287 acres for the employee/contractor vendors, while average farm size was 53 acres for the farmers who sold at farmers markets themselves (if we exclude the one farm that was 60 acres, this falls to 16 acres).

The majority of the farms (80%) produce year-round; the rest has a season ranging anywhere from February through December. Just over half the produce is certified organic (47%). Two farmers indicated they gave up their organic certification due to either cost or drought; the latter resulted in pests that they sprayed to control. Aside from produce, the farms produce canned goods (20%), flowers (20%), nuts (20%), eggs (13%), and herbs (13%). Other products include meat, value-added products (vinegar, apple cider), plant starts, and mushrooms.

The majority of farms (80%) sell at a farmers market, followed by retail, restaurant, wholesale, and farm stand (all 33%). About 20% of farmers offer a CSA and 13% sell to restaurants. Other venues included: online grocery, small grocery stores, and giving all food to volunteers or a food

bank. Out of the eight farmers who sold at farmers markets and who responded to this question, five indicated that farmers markets are the venue that is most profitable while three said it is the venue where they sell the most volume. For three farmers, farmers markets are the most difficult venue.

Six farmers/vendors indicated they either sell leftover food the next day or use it to make value-added products. On average, respondents said they were unable to sell 22% of their food (n=14). Farmers stated that they donate the food to a food bank or give it to friends, neighbors or volunteers (43% and 36%, respectively). Over one-half (57%) feed the unused food to animals, 36% compost it and 14% use it themselves. Vendors are unable to donate leftover food because they must account for all food sold.

All but one participant (n=14) was interested in increasing sales; the biggest issues were not selling enough (36%), competition (21%), people complaining about prices (14%) and lack of labor (14%). Other obstacles included better distribution methods, growing pains, having to train interns, lack of convenient venues, drought, not being able to get into the wholesale market, price regulations at farmers markets, and weather.

Currently only four farmers (n=14) do not engage in any form of charitable donations. While most of the vendors were not able to comment on what the farmer would be willing to donate, the farmers indicated interest in some kind of arrangement with a food bank or other charitable organization. The exceptions was one farmer, who believed that food banks do not want fresh food, and another who grows herbs and micro-greens who believed they are not suitable for food banks.

Interview Results

Below is a narrative summary of each interview. Characteristics of the narratives of organizations are summarized in Table 3 and those of farmers in Table 4.

Fresh Approach (the FMPP mobile market)

Fresh Approach is a non-profit with seven staff that operates nutrition classes, outreach programs, and a mobile market, Freshest Cargo, in food deserts in Contra Costa and Santa Clara counties. Their mission is to bring healthy food to low-income and low-access communities and to support local farmers. The mobile market, Freshest Cargo, utilizes two trucks. It is viewed as a multi-year “stopgap” solution for areas that do not have brick and mortar stores. Fresh Approach does not want to offer a CSA because they do not have the storage capacity to handle the volume of boxes nor the staff to pack boxes. They believe a CSA is a hard concept to sell to low-income communities because of the price and because people do not cook. Fresh Approach also offers a Veggie RX program. Participants take eight classes over 16 weeks and get \$1 per person per day in farmers market coupons and a “kitchen in a box” (salad spinner, knife, cutting board, and other kitchen tools). Two employees teach nutrition classes at partner community organizations and offer some cooking demonstrations. Classes can be free, fee for service, or paid by partner organization, for instance, by the WIC office.

Fresh Approach relies on grant funds, private donations, and partnerships, e.g. with WIC, to cover salaries. Kaiser Permanente has helped with start-up costs of programs, usually six months of funding and with ongoing grants. Freshest Cargo has sufficient sales to cover the cost of food

sold and some of the vehicle costs; their goal is for sales to cover all vehicle costs and food. The Pacific Coast Farmers' Market Association helps by filling in funding gaps.

Table 3. Summary of mobile market/mobile food pantry characteristics (note that Doorstep Farmers is a for-profit company)

Market/ Pantry	Mission	Areas served	Work- force	Produce source	People served
Freshest Cargo Mobile Market	Bring healthy food to low-income, low-access communities; support local farmers	10 stops East Bay; 6 South Bay	7 FTE	Local farmers (purchased at farmers markets)	50-60 at busy stops
Doorstep Farmers	For-profit	East Bay	6 FTE	Local farmers & 2 SF Distributors	600 members (400 deliveries per week)
Food Bank of Contra Costa & Solano	Fights hunger & poverty by distributing donated food to food pantries and directly to people in need	Contra Costa & Solano counties	65 FTE + 90,000 volunteer hours	Local farmers; California farmers; produce industry	16 million meals in FY2014
Community Produce (FBCC&S mobile pantry)	same as above	same as above	2 FTE + ~6 volunteers per site	same as above	~100 people per stop
The Urban Farmers	Hunger relief through engaging community in backyard fruit harvesting	East Bay; food donated to non-profit serving Contra Costa county	Founder; 9 core volunteers; 10 regular volunteers + others	Gleaning backyard fruit trees; planting trees	N/A

The mobile market sources from farmers at 62 farmers markets in the Bay Area; this ensures that the farmers are California certified farmers (details about California farmers certification are reviewed below). The mobile market purchases both organic and conventional produce; they screen vendors for sufficient quantity and practices, such as conventional farms not spraying fruit directly or late in season. They prefer working with smaller farmers and believe that local food is better for the environment because it is transported shorter distances (fewer food miles) and is of higher quality, because it is fresher and more likely to be ripe. They prefer buying food wholesale because it is easier and requires less labor and logistics. Each week they purchase from those who can give them the best price and pick up the food from the local farmers markets. Fresh Approach believes farmers like partnering with them because they like Fresh

Approach's mission, the sales are consistent, and this provides them with an additional market and new customers. The mobile market lets the customer know the source of the produce.

To determine which communities to serve, Fresh Approach uses GIS to identify food deserts. Community partners are essential for Freshest Cargo's success. They need partners to actively recruit people to attend the mobile market. An example is using announcements to remind seniors at a senior housing stop. In addition to strong community partners, because Freshest Cargo operates in suburbs they need locations with easy access; they have found people will not walk more than three blocks. Each site is assessed over a six-week period for sales; only successful sites become permanent.

Freshest Cargo operates two routes: the East Bay route with ten stops and the South Bay route with six stops. In the future, they would like to extend the mobile markets to areas in the south bay and potentially into Oakland. They prefer moving into urban areas to the south, rather than eastward where density is low and there is a lack of community partners. They try to construct routes so that one stop is always a high-income stop (e.g. a state laboratory, daycare, spa and fitness center). At this stop they can sell a lot of their produce for a higher mark-up to subsidize their other stops. The mark-up is 35%, which is still below farmers market prices. Customers at those sites are particularly interested in certified organic produce. Mark-ups at the low-income stops are between 15% and 25%.

With regards to their low-income stops, what Freshest Cargo refers to as "outreach stops," on their busy route (Richmond) they have about 50 to 60 customers. They report a variety of customers depending on the stop. At the senior center a researcher visited, there were three customers in one hour. In addition to low mark-ups at these stops, Freshest Cargo offers "Market Match," a coupon matching-program that allows up to \$10 in purchases per day. Despite serving low-income communities, according to Freshest Cargo, they do not have "very many" people who use EBT in the central Contra Costa route; there are many more on their Richmond route. They believe there is stigma about using EBT in some communities. They also indicated that low-income customers prefer local over food shipped across the country, enjoy buying fruit but do not care about organics, and some may not have access to a kitchen.

In addition to fresh produce, Freshest Cargo provides their customers with information about nutrition, information about their nonprofit, EBT benefits, and recipes. Freshest Cargo is able to sell most of their produce because their last stop each day is usually a high-income stop; any leftovers are brought to the Food Bank of Contra Costa and Solano.

Pacific Coast Farmers' Market Association (parent organization of Fresh Approach)

The Pacific Coast Farmers' Market Association (PCFMA) was founded 26 years ago. It is a 501(3)(5) agricultural nonprofit founded to support farmers in new farmers markets that are exempt from California packing and transportation regulations. Their current mission is to help farmers in the Bay Area to be "enormously successful." PCFMA operates 62 farmers markets for about 250 vendors in six Bay Area counties. PCFMA developed an important partnership with health care provider Kaiser Permanente 13 years ago, initially by running farmers market at hospitals. Kaiser Permanente has been an important supporter of PCFMA's programs, including Fresh Approach and their mobile market Freshest Cargo.

One of PCFMA's services is helping farmers understand the many regulations that exist in California; they facilitate the markets by ensuring compliance. The rules include placing agriculture, non-agriculture, and certified organic vendors in different sections of the markets, and ensuring that farmers understand that they can only sell what they produce. The latter is a part of California farmer certification; inspectors visit the farms and issue a certificate that declares what a given farmer grows and therefore what can be sold at a farmers market. Verbal or written dishonesty can result in penalties. PCFMA has tried to do workshops in the past, but this was very difficult because farmers have a wide range of expertise and knowledge.

For their farmers markets, PCFMA hires about 20 farmers market managers; they also have regional managers who focus on regulatory issues, data tracking, and staff training. The market managers are responsible for collecting fees (\$42 per stall per day), set-up, break down, making sure the site is clean at the end, and customer services, such as EBT. Farmers are not guaranteed space, however, preference is given to those who have sold with them before and who have a good history at the market. PCFMA reports that there is a waiting list for the most popular markets. Some farmers sell at most of their 62 farmers markets, hence most stalls are operated by farm employees, not the farmers themselves. PCFMA continues to add farmers markets, with a preference for weekday markets to increase variety and quality; however, weekday markets are challenging to get enough sales to make it worthwhile for the farmers.

PCFMA markets offer CalFresh (California's EBT program) at every market. They also accept WIC and EBT farmers market coupons and farmers can even use these to pay their stall fees. Similar to Fresh Approach, PCFMA's farmers markets are part of the California Market Match Consortium, which provides a dollar for dollar match up to \$10 per person per day in farmers market coupons to those on public assistance. PCFMA is trying to get the California state legislature to fund a matching program.

PCFMA has not done a survey of their customers for a number of years. Their last survey revealed that the characteristics of shoppers were typical of farmers market customers: older, white, better educated, higher income, and more than 50% female.

In the future, PCFMA wants to keep supplying produce to the Freshest Cargo mobile market from their vendors; they feel it is an outreach tool that creates customers for their farmers markets. They would also like to create a food hub; however, this is hard for a nonprofit because commercial produce houses have infrastructure in place already. They expressed satisfaction with the FMPP because they think it provides sufficient money for innovative projects and believe funding for more than one year is important to ensure projects can function.

Contra Costa Farmers' Market (CCFM)

CCFM is a 501(c) 5 nonprofit started about 30 years ago. They operate three year-round farmers markets: affluent Walnut Creek is the largest and the flagship, Orinda which is even more affluent than Walnut Creek, and the Contra Costa Medical Center in Martinez. Their mission is to support sustainable farming by providing farmers with markets and to make healthy, organic, fresh produce available to their communities. They foster education and outreach to promote healthy lifestyles and conscious food choices.

CCFM has one full-time and three part-time employees to operate the three markets. They accept EBT, although the redemption rate is very low; only \$60 to \$70 per week and no demand at all at the Orinda market. Walnut Creek and Orinda markets feature about 50 to 60 vendors at any given time; in total, CCFM works with 80 vendors due to seasonality of production. Martinez is a smaller market; it has only three to four vegetable vendors. All stalls cost \$42 per day. Farmers need to pay an application fee and must have a Certified Producer Certificate indicating they grow what they sell. Given the number of farmers markets in the Bay Area, many farmers send employees as vendors, which makes it challenging for CCFM to communicate with farmers. CCFM feels ongoing training is necessary to ensure the employee vendors know the rules because they tend to have a somewhat high turnover rate.

At the markets, the vendors are grouped by category: hot food; value added food; agricultural products; and crafts. CCFM would like about 80% of the stalls to offer agricultural goods. However, this is difficult because then too many vendors sell the same products, so competition is high and in addition, the customers prefer more product variety. CCFM reviews the vendors from time to time and often asks them to bring items others do not have. It is a constant struggle to find a balance because farmers markets are attractive to customers when there are more farmers, but farmers do not want to go to a market with few customers. Vendors need to support a market to help it attract customers. In addition, customers want a festive atmosphere. Customers may go to bigger markets because they want “kettle corn and face painting.” CCFM believes that non-agricultural vendors bring people to their farmers markets. For this reason, craft vendors and entertainers are required to support smaller markets before being allowed at the bigger ones.

To promote their farmers markets CCFM maintains a website, sends out a newsletter, advertises in the local “Edible” magazine, and sends out postcards with a raffle ticket, but have found that word of mouth is the most effective means. As a result, they have decreased their advertising due to being concerned about wasting farmers’ money they earned through stall fees

The biggest challenge CCFM faces is that the Bay Area is very competitive. Vendors compete with each other at each farmers market and each farmers market competes with other markets, as well as with grocery stores. CCFM clearly felt pressure from PCFMA’s strategy to start new farmers markets. The constant addition of new farmers markets in the region has reduced sales at existing farmers markets. While the new markets make it more convenient for customers to go to a closer farmers market, they increase costs to farmers who have to hire more labor or spend more time at more markets to get the same sales.

In terms of food waste, there are two local organizations that pick up leftovers at the Walnut Creek market: White Pony and Life Medical of Alameda. As part of their quarterly reports to CCFM, vendors provide information about the amounts donated. CCFM finds this helpful to promote the market and let customers know about farmers’ efforts to address local hunger issues.

The customers at each of CCFM’s markets are somewhat different. At Walnut Creek there tends to be younger people, families, and a core of old timers who are loyal shoppers. At the Orinda market the customers tend to be older and very affluent, often sending a personal shopper or personal chef to do the shopping. At Martinez, the hospital manager does not think the market is a great fit because their employees work odd hours and have no place to store the food they buy.

Furthermore, the market is very small; there are only three or four farmers who do not make a lot of money. However, this market has most of the EBT sales. Presumably, the patients at the hospital could buy at the market, but they do not, probably because they are not aware of the market or prepared to buy food when visiting a hospital.

Overall, CCFM believes the best strategy is to try to build loyalty among younger customers. Particularly at the Walnut Creek market, there are a lot of young people who like to go to the market but do not know much about seasonality and types of produce; they also do not cook very often and therefore do not buy very much. While the CCFM provides recipes, they feel there is a need for nutrition education and cooking classes, especially in schools. They would like to see the USDA promote these kinds of programs because CCFM does not have the staff to do it.

Doorstep Farmers

Doorstep Farmers is a for-profit home delivery service. It started in 2010 as a non-commitment CSA that sourced organic food from different farms and delivered to customers' homes. This made it convenient while also provided more variety to customers. Currently, all the produce is certified organic and sourced from local farms and two wholesalers in San Francisco; a pre-ordered box is delivered once a week to customers' home. The owner started the business to educate the community about sustainable food, and to promote and support local farmers. In the first season, he went door to door to sign up customers and approached farmers directly to source. The business has been so successful that it currently has 600 members and the owner has delegated the day-to-day operations to his employees.

Doorstep Farmers offers organic food from as local a source as can be found. They offer organic foods because the owner believes they are better for the environment and human health. Local and seasonal foods are preferred (about 30-50% of the box) because Doorstep Farmers has found there is a growing demand for local food. However, to provide variety, they contract two distributors in San Francisco and sometimes work with distributors in other states, such as in Oregon and Washington for apples. The boxes come in four sizes with about 50% fruit and 50% vegetables, and the focus is on providing the best value. Seniors and the disabled get a 10% discount.

Boxes can be customized; customers can opt out of an item and get credit for it or choose something else. Customers can also add items such as eggs, nuts, corn, and rice. The boxes are reusable cardboard; they do not use coolers, but if it is hot, they ask members to put coolers outside. The box includes a newsletter and recipes. Customers might not know which items in the box are local; however, details of sources are available on the website, and the newsletter often highlights a local farm. Out of the 600 members, about 350 to 400 order a box each week. Deliveries are scheduled from Monday through Thursday in and around Concord to ensure sufficient density to make the business cost effective.

Most of Doorstep Farmers' members are middle-income women with young children or children in elementary school. Doorstep Farmers competition is Good Eggs and Farmigo; both of which are online grocery that offer home delivery services in the area. Doorstep Farmers reaches out to potential customers using door hangers and at school fundraising events (donating a percentage of money spent by parents). They do not believe they have any low-income members and do not take EBT, but the owner is interested in exploring this option. While the owner wants boxes to

be affordable to more people and would like to charge less for those who cannot afford it, he is not sure how to ensure accountability if there is a sliding scale.

Doorstep Farmers donates two pounds of food per order to the Monument Crisis Center. The owner has not considered collaborating with non-profit mobile markets. He sees them as competition. However, he would be interested in partnering with an organization that can identify low-income people who could receive the boxes for a discounted price. He believes his middle and upper income customers would be willing to donate money to cover the costs.

An obstacle Doorstep Farmers faces is that it is difficult to find organic farmers in close proximity. The owner stated farmers do not want to get certified even when he offers to pay for certification. Another major concern he identified is the ongoing drought in California. He is expanding to Portland at the end of 2015 because he anticipates he will lose business in California due to the drought. He is so concerned about the drought he plans to take a beginner farmer training to learn to farm. While he is concerned about the cost of starting a farm, he is more concerned that he lacks farming skills and anticipates climate change will make these skills necessary.

Food Bank of Contra Costa and Solano

The Food Bank of Contra Costa and Solano counties (hereafter, food bank) has been fighting hunger for over 40 years. Like most food banks, they started as an emergency food provider for people on food stamps. They began in a trailer and have expanded to two warehouses with 65,000 square feet of storage, a fleet of trucks, 65 employees and 90,000 volunteer hours per year. Volunteers include one-time and regulars, corporate groups, service groups, and some clients volunteer at service sites.

The food bank sees itself as a partner with the community to end hunger. Their mission now extends beyond distributing food; they also provide outreach and information about food stamps (CalFresh in California). They conduct outreach because not every community has a CalFresh office, the offices may be understaffed, public transportation is poor, and only 86% of those eligible in Solano and 58% in Contra Costa are enrolled. They have found that many eligible Hispanics worry that applying will affect their immigration status and many eligible seniors are too proud or believe they would be taking benefits from somebody else. The food bank also provides assistance with housing, medical services, and utilities. They advocate for change but in ways that do not alienate partners and donors.

In 2014, the food bank distributed over 20 million pounds of food. Each month the food bank provides food for about 12% of residents of Contra Costa and Solano counties. They report that the majority of their clients are “working families” because most have a working member in their households. About 30% of their clients are children, there are a large number of seniors, and many are recent and not so recent immigrants. Because the cost of living is so high in California, they use 200% of the poverty level as a cut-off for their services. They target their outreach efforts at WIC offices, health clinics, and employment offices. Many of their clients also find out about them by word of mouth.

The state association of food banks purchases produce directly from farmers as well as through wholesalers. The food bank receives some donations of shelf-stable food from large retailers

through Feeding America; however, similar to other food banks in the US, retailer donations have been declining. This means that the food bank must purchase many staples: whole grains, canned fruit, vegetables, iron-rich cereals, lean proteins such as canned tuna and canned chicken, shelf-stable milk, eggs, and frozen meats. They also acquire food from food drives; however, these function more to raise awareness about hunger in the community than to collect large quantities of food.

About six years ago the food bank began to focus on improving the nutrition of the foods offered. Currently, half of all the food they distribute is fresh produce, mostly produce that can withstand handling. The food bank distributes 800 to 900 thousand pounds of fresh produce per month. Because Contra Costa and Solano counties have many farms, the food bank is able to acquire local products that are fresh and seasonal (e.g. corn, pears, persimmons). However, seasonality has a disadvantage of varied availability: for a couple of weeks, a large volume of fresh produce is available followed by nearly no produce. Therefore, the food bank sources from all over the state to ensure a regular flow of produce, and distributes it directly to clients through a mobile food pantry (more included in the following section), rather than their partner agencies who often lack infrastructure to move and distribute produce.

Half of the food bank's food is distributed through 180 agencies they partner with, which include church pantries, soup kitchens, group homes, and rehabilitation facilities. They help the agencies build capacity, for example they started a granting process this year for refrigerators, freezers, and additional pantry hours. While kitchen access does not seem to be a problem for most clients, the agencies offer a limited selection of prepared food for clients without kitchen access.

The food bank distributes the other half of their food directly through service programs. These include the Senior Food Program that delivers food twice a month to low income seniors; Food for Children who provides food to four and five year olds once a month at nine sites; the Farm 2 Kids Program that provides three to five pounds of fresh produce per child per week to 80 low-income schools; the School Pantry Program that provides on-site shelf-stable emergency food for high school students; Food Assistance Program which provides USDA commodities produce and bread once per month at 31 sites; adult meals, a pilot program that includes adults along with children to increase participation, is provided at six sites; and the community produce program (mobile food pantry), which delivers produce twice a month to 56 sites, and is discussed in greater detail in the next section.

When asked about the USDA, the food bank indicated they appreciate their attention to innovative programs. They also suggested such programs should be more accessible for people in need.

Community Produce Program (Mobile Food Pantry)

Two and a half years ago, this program started with funding from a local hospital's trust fund, which provided two years of support and two trucks. Now this program has a broad donor base and is very successful; it serves 50 sites, twice a month each, distributing about 12,000 pounds of produce per day.

The Community Produce Program utilizes two refrigerated beverage trucks that distribute produce Monday through Saturday, with three stops per day. Each truck operates with one paid

driver and about six volunteers. Most of the volunteers are retired and volunteer weekly. There are generally a different group of volunteers at each site. The trucks stop at a variety of sites serving low-income families and seniors: churches, community centers, schools, Boys & Girls clubs, union halls, and WIC offices. The mobile food pantry aims to distribute to 100 people per stop. Currently only 12 stops have fewer than 100 clients, this has prompted the staff to increase marketing efforts at these stops with flyers, information, and recruiting.

Two stops that the researcher visited were at a church parking lot, where 150 families were served, and a WIC office, where 190 families were served. The researcher noted that the clients were very diverse, from the very young to the very old, and while English and Spanish were the most common languages spoken, there were at least ten other languages spoken, including Russian, Ukrainian, Chinese, Hindi, Vietnamese, Arabic, Tagalog, and Korean. Similarly to the food bank services, the mobile pantry uses 200% poverty level as a cut-off line for their services due to the cost of living in the Bay Area, as one of the participants commented:

“We have people on Social Security...After working a full lifetime, you know, 35, 40, 50 years, their Social Security only adds up to maybe \$900, \$1,100, \$1,200 a month. Maybe in Wyoming or South Dakota that might stretch, but in the Bay Area, are you kidding me? You’ve got apartments in San Francisco running for \$4,000 for a 900-square foot, two-bedroom apartment.... And it’s not just San Francisco. It’s the whole Bay Area.”

The mobile pantry focuses on produce that can withstand shipping, sorting and distribution: potatoes, onions, oranges, apples, broccoli, celery, stone fruit, but no berries. Volunteers distribute five to eight produce items from tables set up next to the truck. Each family gets between 15 and 20 pounds of produce. Clients are asked what their family size is and asked to confirm that they are below a corresponding income that is 200% of the federal poverty level. Clients are eligible to visit a stop twice a month; they are given a card with the stop schedule. Clients are asked to bring their own bags; however, bags are available if needed. While the clients may not know whether the food is from a local farm, it is clear from the lines that form before distribution even begins that they appreciate getting fresh produce. This appears to reflect a growing awareness of the importance of produce in dealing with health issues such as diabetes and high blood pressure.

Since it is hard to gauge how many clients might show up, volunteers adjust quantities of produce distributed if more or fewer clients than expected come. The goal is for everyone to get some of everything offered and as a result very little food is wasted. Furthermore, because much of the produce is very stable, it can be held until the next day if there is excess.

When asked about the mobile market, the staff was not sure if collaboration would be possible because selling food to their clients who regularly receive food for free would be difficult. When asked about the USDA, they indicated they would like them to continue their programs to make produce more accessible.

The Urban Farmers

The Urban Farmers is a grassroots, all-volunteer, 501(c)3 non-profit gleaners organization founded in 2008, located in the East Bay of San Francisco. Their focus is hunger relief and increasing access to fresh, local, and healthy food. Urban Farmers plant fruit trees, glean

backyard fruit in the Bay Area communities, and donate food to a non-profit, which distributes it to those in need. Because of the climate and variety of tree fruit, which includes citrus, stone fruit, and pomes Urban Farmers are able to operate almost year-round. In 2014, they harvested 105,000 pounds of fruit; in 2015 they expect to harvest 150,000 pounds. In addition, they manage four orchards on semi-public land (schools or churches). These orchards were established so that the fruit could be donated to food pantries.

Urban Farmers is a 100% volunteer organization. They have 8-9 people who are very active in organizing, 10 who are occasionally involved, and the rest of the volunteers basically show up to pick fruit. This last group of volunteers can include: one-time corporate events, regular community groups, court ordered service, or simply individuals. Urban Farmers is funded through the community, it costs \$50 a year to be a member. Members get a newsletter and an annual party. Urban Farmers seeks grants only for specific projects, such as acquiring another vehicle or planting orchards. It costs them 12 cents per pound of fruit. All the fruit is donated to feed the hungry.

Urban Farmers started in Lafayette, a liberal community in a distinctly conservative region. Initially, a church sponsored them and facilitated recruitment of volunteers. Urban Farmers started by collaborating with homeowners to produce food some of which was donated, but found that gleaning was a more efficient means of getting fresh food. Urban Farmers have been focused on gleaning for the past five years. With growth, they have spread to other communities, finding that each community is attracted for different reasons. They would like the idea of growing and donating food to become a social norm in all communities, one that is not just about picking fruit and donating, but an “active loop with a community in how to be more community-like.”

For a community to participate, it must have at least 50 trees of different varieties of fruit. This minimizes the amount of driving between sites and ensures availability of fruit throughout the year. Urban Farmers organizes harvest groups every two to three weeks. These groups harvest at about four houses. The Urban Farmers’ core volunteers maintain a database of trees, which includes information such as whether they need ladders or if there are any hazards. They take a group of nine to 14 volunteers to the houses of people who volunteer their fruit trees, harvest the fruit, provide donation receipts to the homeowners, and donate the fruit to White Pony Express, a non-profit in Contra Costa County that delivers food to about 50 programs for the hungry. Urban Farmers has one vehicle donated from a food relief agency; the vehicle contains equipment for harvesting and crates to hold the harvested fruit. Most volunteers use their own vehicles to get to the sites.

Urban Farmers has developed software for their operations that has streamlined their work. With it they are able to log the number, hours and contacts for volunteers; send emails; keep an inventory of trees, their locations, and when they will need harvesting; the amount and kind of fruit harvested; costs; and many other things. The software, developed by the founder, will be made publicly available. The software has been particularly important to improve the transferability of information such as information about trees and harvest tracking. This is seen as particularly important because the founder is deemed to know all the people and their histories, which can make communication difficult for other volunteers. Widespread use of the software would be beneficial for groups of gleaners to work together or to glean properties

transferred from one group to another; currently there is no easy way to transfer information. The prototype software is nearly done and will be tested with an established gleaning group for flexibility and functionality before professional production. The Urban Farmers are looking for corporate sponsorship to produce a professional version of the software to run on all platforms and devices and be shared as open source production.

While Urban Farmers has been very successful, it faces several challenges. Many of the homeowners want them to work on their schedule; they can treat Urban Farmers as a “fruit ambulance,” calling them at the last minute to “save their trees.” Indeed, recruiting homeowners is the most challenging part of their operations; there are plenty of fruit trees in the area, but homeowners may be reluctant to let strangers onto their property, and may not anticipate or be willing to cooperate to ensure the fruit can be harvested. In addition, for maximum harvest, trees need pruning, which Urban Farmers will sometimes provide for free when it is needs based and the trees serve the organization, but it requires the homeowners to coordinate with Urban Farmers.

Another challenge is the volunteers. They do not get much of a diversity of volunteers; the volunteers tend to be quite affluent. Low-income people are not interested because they do not want to feel like migrant workers. However, Urban Farmers receives many more group requests to volunteer than can be arranged. Unless a group can serve the interests of Urban Farmers in some capacity, they are redirected to join regularly scheduled harvests or charged \$25/head to arrange for special harvest events.

Urban Farmers has also had some difficulty in distributing the food they harvest. The food bank will not pick it up because it is too little for them, which is why they work with White Pony Express, a smaller non-profit distributor. The places they distribute appreciate receiving the fruit.

One of the concerns Urban Farmers has is that despite food being harvested and distributed within the same community, it is not a closed circle. The homeowners and volunteers do not meet the clients. Indeed, the homeowners and volunteers may not even meet. In the future, Urban Farmers would like to help tree owners take better care of the trees so there is more fruit to harvest. They would also like to organize neighborhood leaders, someone people know in the neighborhood, who can recruit and organize homeowners so that more of the fruit that is available can be harvested.

Urban Farm 1 (Contra Costa County)

Urban Farm 1 was founded in a location where originally a 170-acre farm operated since the gold-rush era in 1867 until 1978. The original farm is now listed on the National Register of Historic Places. In 1987, the core of the farm was given to Pleasant Hill Recreation and Park District and the remaining land was sold for home development. In 1991, a non-profit organization was formed to restore, preserve and manage the property.

In 2012, Recreation and Park permitted farming at the site on the remaining two acres for free, including water. Intended primarily as a teaching facility, Urban Farm 1 has been an extremely popular venue for people from Pleasant Hill, as well as all around the Bay Area. Urban Farm 1 involves hundreds of people in weekly meetings and classes focused on growing food. In the future, they would like to also offer fermentation and preservation classes. Current classes

include students from elementary, high school and colleges: the Diablo Valley College offers culinary farm-to-table classes, the California College of Arts offers design classes, and numerous elementary students from the Contra Costa and Mt. Diablo Unified school district. Urban Farm 1 also works regularly with special-needs students through the non-profit RES Success and other groups.

Table 4. Summary of farmer characteristics

Farmer	Size (actual/ farmed) (acres)	Products	Workforce	Venues	Needs or obstacles to growth
Urban Farm 1	2/1	Specialty produce (unusual varieties)	Volunteers	Volunteers, culinary courses	Labor, knowledge to be able to sell through other venues
Urban Farm 2	0.75/0.1	Herbs, greens, strawberries, plant starters	1 FTE	Local CSA, local grocery, online	Selling to Whole Foods would be ideal
Urban Farm 3		Greens, tomatoes, fruit	3 FTE + 5 interns	Farm stand on site	N/A (are currently expanding)

Urban Farm 1 operates with all volunteers, so they are unable to farm more than one acre. Most of the volunteers are regulars; volunteer groups are not welcome because they are too disruptive. They focus on growing unusual varieties of vegetables. They do not have organic certification because the lead farmer said it costs \$10,000.

The food Urban Farm 1 produces goes first to their volunteers. They also sell to three restaurants: one in Walnut Creek that features them as their Farm-To-Table farm; the other two are student-run at culinary schools. Urban Farm 1 also drops off thousands of pounds of produce to the food bank, usually items that are sturdy and hard to damage like squash and zucchini. However, the head farmer is unhappy with the food bank because the food bank mixes their produce with other varieties and he does not get to see where the food goes. He would rather spend his effort on education about vegetable varieties and their nutrition, “We can do more good for the community by teaching about that kind of thing than we can by dumping poundage on the needy.” He would be willing to sell to a mobile market at cost, but they would need to pick up the food. He also would be interested in a farm stand to sell to the neighborhood. They used to sell at a farmers market, but they lack the volume to make the time and effort worthwhile. They would also like to have meals on the farm, but regulations make this difficult.

There are several obstacles to expanding production besides lack of labor. The lead farmer identified some of the biggest obstacles as understanding the rules and regulations for packaging and sales for retail and restaurants. In addition, he was concerned about the Recreation and Park regulations about selling food. The lead farmer would like to see more information about how people can support small farmers and how small farmers can make money. He believes the USDA is not oriented towards urban farms and needs to help urban farmers understand regulations. However, he also admitted he never thought of the USDA as a resource and therefore never sought any information from them.

Urban Farm 2 (Alameda County)

Urban Farm 2 is a for-profit urban farm located in West Oakland. The farmer used to work for an organic farm in California's Central Valley, managing, finding sales, and running farmers markets sales. He became interested in production and then worked for an indoor hydroponics operation. He was struck by the inefficiency of harvesting food, followed by hauling it hundreds of miles and became interested in urban farming as a way to reduce transportation and waste. He enjoys growing food and plants, farming comes easily to him, and he enjoys sharing his skills, but he does not like to see waste or vacant properties. He found that while there were many vacant lots, often the soil was contaminated and the owners did not want plantings because they wanted the option to develop the land. For these reasons, he developed a way to farm without impacting the land or using the soil: vertical farming. He uses common building materials: two-story scaffolding as a framework. The scaffolding supports rows of metal gutters, filled with compost. The farm can be set up quickly, is densely planted, very efficient for water use (only 25 gallons/day), and advertises itself because it is visible from the street. Light and root space are the limiting factors to his production, so he grows micro-greens, herbs, radishes, strawberries, and plant starts. The latter are easy to grow and there is a lot of demand.

The farmer built the first vertical farm in Berkeley, where he sold from a farm stand, but it was not very lucrative, access to land was difficult, and lack of city policies were problematic. He moved his farm to Oakland because of the availability of land; there are many vacant lots and he provides a service to the owner by beautifying the lot. His current farm is located in a fenced yard that has a house. The farmer described the original state of the lot as "disgusting;" he had to remove a lot of junk and brought in wood chips to cover the ground. As part of his operations, he provides training to people interested in farming and is part of a tour of Institute of Urban Homesteading, which brings people to various urban farms to demonstrate various options for urban farming.

The farmer is aware of many of the food initiatives in Oakland, such as the People's Grocery (the 'original' mobile market that served as an inspiration to the mobile market boom in the US), Phat Beets (a CSA), and the Mandela Marketplace (a grocery store that sells local produce located only 10 blocks from his lot). These organizations buy from local farmers, particularly farmers of color, and focus on making healthy food available at low cost. He questioned the effectiveness of mobile markets and indicated they would not work as an outlet for his products because his products are high-end specialty items. He sells most of his products online through Good Eggs and Farmigo. He delivers twice a week to each of them. He likes the online services because he can set his own prices and limit quantities so there is no waste. Since the clientele of these services are wealthy, he can sell at premium prices. He used to sell to restaurants, but feels chefs

can be picky and do not order enough to make it worthwhile. He would like to sell to Whole Foods.

The farmer identified the biggest challenge to urban farming as the lack of supportive local policies. In Berkeley, he said there is nothing in the city code to allow for urban agriculture. This makes urban farming very precarious. In Oakland, there is plenty of available land, but a permit to farm costs \$3,000, whereas the cost of a permit to open a liquor store is only \$50. He feels this is unfair and encourages the wrong sort of enterprises in Oakland.

Overall, the farmer would like more support for small farmers. He sees the increasing scarcity of land, water and energy as incentives for the growth of urban agriculture and would like to see urban design incorporate farming. He wants to do hydroponics in the future and believes the future of agriculture is intensive, high-tech indoor farming.

Urban Farm 3 (Alameda County)

Urban Farm 3 is a non-profit urban farm in West Oakland founded in 2001. The founder identified the location as a food desert in which the residents had skills and wanted to farm. For this reason, Urban Farm 3's mission is to provide low-income people with access to healthy food and make growing food possible for the people of West Oakland. These clients may lack access due to finances, lack of mobility, or lack of transportation. Urban Farm 3 is interested in harvesting community knowledge. The community views them as a change agent in people's growth and community life.

Urban Farm 3 focuses on growing greens, tomatoes, and fruit. They try to respond to customer requests. They also grow flowers for pollinators and to attract beneficial insects. They grow herbs, but customers do not have a strong sense of how to use them.

Their main site is on city land, which used to be a park; the city helped with the construction to improve the lifestyle in the neighborhood. The farmers talked about a lot of good experiences with neighbors and customers and how many people "just chilled out" and treated the area "like their living room." The 32 raised beds are necessary because the soil under the cement slab is dead and contains lead. Urban Farm 3 operates another garden, which is a large backyard garden with 20 in-ground beds. They may have to leave that site because of lack of manpower. They have another vacant lot with fruit trees and a greenhouse at a school with seven raised beds. They have purchased another 1.4 acres down the street from the main site. It will have a community garden, farm stand, outdoor classroom, outdoor kitchen (a sink, a counter, and a portable stove), a gathering space, an orchard around the perimeter, and a quarter acre for the farm.

Urban Farm 3 also has a Backyard Garden Program; they build planter boxes in people's back yards, provide soil, vegetables, and mentoring. They also have workshops at an outdoor garden, plant trees, and teach first aid. They used to have recipes and cooking demonstrations.

Urban Farm 3 began with the founder and interns, who were provided with accommodations. It ran February through November; but the interns would often leave before the end of the year. In 2012 they hired paid staff: four full-time and two part-time positions and teenagers as paid summer interns. They utilize volunteers to help the paid staff. Urban Farm 3 is funded through grants from corporations, government, private and public foundations, and private donors.

The farmer operates a farm stand at the main farm on Saturdays from 10am to 5pm. The farmer would like to diversify venues if they could increase the volume of produce. The proximity of the farm to the farm stand allows for tending of the farm in between serving customers. There is a chalkboard with prices, including, “Just getting by” greens for \$1. However, people pay what they can. People just hand the farmer money and take enough to eat, not more than that. He does not think people abuse it. He has only had one experience of someone who could pay but did not, and when he explained to the person what the program was about, they started paying full price. Urban Farm 3 does not take EBT; they prefer their customers save their limited EBT benefits for other food items.

Their customers are about 50:50 African-American and White, with a few Latinos and Asians. Women are two-thirds of their customers and most customers are older. There are very few young African-Americans. About 80% of customers live nearby. The new, upper class people who have moved into the neighborhood do not buy at the farm stand nor do they mix much, they self-segregate, which is evident from the fact that they started their own neighborhood association instead of joining the existing one. In general, customers react very positively to the farm stand, and are willing to try new foods, though some do not like them. While he has had some issues with people breaking in, destroying plant or stealing food, for the most part, the community looks out for the farm, stepping in to stop or prevent vandalism and helping them with repairs in case vandalism occurs.

The farmer has not heard of any mobile markets, but commented that Urban Farm 3 used to use a bicycle cart before someone stole the wheels. The cart delivery was not feasible long term because it was time consuming, expensive and did not result in sufficient sales to cover costs.

The farmer believes the biggest obstacle to farming is that farmers want to make a living to have a decent lifestyle; however, the prices that would permit that would mean only rich people could afford healthy, local food. This means that to provide affordable, healthy food to those in need requires some support from government and/or private donations. He noted that in addition to providing land, the city has also helped by making rules that facilitate urban agriculture and home production. He appreciates the government creating policies and grants that allow and encourage people to try to feed themselves. He would also like to see legislation that would minimize food waste and further encourage donations of edible food to those in need.

Conclusion

We conducted ten interviews in and around Concord, California to examine whether mobile markets and mobile food pantries could increase farmers sales and food access. In addition, we explored the obstacles farmers face to getting established and increasing sales.

The East Bay Area is a highly populated suburban area located near very productive agricultural land with a climate that allows year round production. The large population is very diverse and the poverty level is at or below the US average. Along with the agricultural productivity of the region, this has fostered over 60 farmers markets in the Bay Area as well as thriving for-profit home delivery services and high-end urban farms for local and organic foods. On one hand this reflects enormous demand for local food. On the other, it means that local food is often expensive and those who buy it are affluent. Furthermore, some participants questioned whether

the increase in venues was helpful for farm sales or whether it simply increased costs to farmers by forcing them to sell at more venues. In addition, selling to more venues often means that the farmers markets are not attended by farmers, but by farm employees and hired vendors who often drive 300 miles to reach the market. This not only makes the “direct sales” less sustainable, it also effectively removes the link between the farmer and their customers.

Despite the high incomes in the area, there are pockets of extreme poverty. Non-profit organizations including urban farms, food banks, mobile food pantries and mobile markets try to provide fresh local produce to those in need. Often, they operate in the same areas, targeting the same clients, but food banks and pantries provide large quantities of food for free, while mobile markets and urban farms provide small quantities at below market prices. Both rely on grants and donors to operate. While these organizations see collaboration as difficult because some are giving away food and others are selling it, it is clear that they are serving the same people and also often getting funding from some of the same sources, so finding a way to collaborate could reduce duplication of effort.

In a state known for its regulations, it was not surprising that all the participants talked about the importance of regulations and local policies to foster rural and urban agriculture, create markets, permit sales, and encourage donations. Government was seen as a strong collaborator in many cases. The participants seemed much more aware of state and local regulations and policies than federal regulations or policies.

The East Bay has many contrasts. It is home to some of the most affluent communities in the US, as well as very poor communities with lack of food access. In most areas land is very expensive, yet in Oakland there is an abundance of abandoned lots and city ordinances largely encourage urban farming. Contra Costa County also has an abundance of fruit trees in homeowners’ yards, and much of the fruit goes unharvested. The East Bay is very close to farms that produce enormous quantities of fresh produce. The food bank has been able to access some of this food such that half of the food they give to their clients is fresh produce. They and other non-profits have also been able to mobilize a large number of mostly affluent volunteers willing to help harvest and deliver food to the needy.

What the region has in common is an ongoing and severe drought. While all the participants mentioned it, for the most part, the non-profit participants did not anticipate changes in California agriculture and at least implied that the drought would eventually end. But for the two for-profit operations, the drought was seen as the new normal, as a paradigm shifter, something that could make growing food on California land impossible. For one, this meant preparing to emigrate as a “climate refugee,” for the other it meant high tech indoor farming would replace the current growing system. In both cases, those who could afford food would find a way to get it, but there was no mention of those who are already food insecure. The non-profits serving the food insecure, both inside and outside California, are not anticipating or preparing for a paradigm shift due to drought. Let’s hope their confidence in an end to the drought is correct.

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Appendix:

Interview questions (mobile market managers)

1. How would you describe your mobile market/food pantry?
2. Please, tell me about your products: What do you offer? Where does it come from?
3. How do you choose where to get your product from?
4. (If produce from local farmers) Could you tell me about the advantages and disadvantages of getting product from local farmers?
(If no produce from local farmers) Would you be interested in obtaining produce from local farmers? Why – or why not? What would prevent you from obtaining local produce?
5. Please tell me about the people who shop/receive food from you. Who are they? Why do they choose to come to you?
6. Please, tell me about the people who do not shop/receive food from you. Who are they? Why do they not choose to come to you?
7. How would (or do) your customers and/or your community respond to you obtaining local food?

Interview Questions (farmers who do not sell to mobile market/pantry)

1. How would you describe your farm?
2. What are the venues you use to sell your product? Can you tell me about why you choose those venues?
3. Have you heard of the [insert name of a mobile market/pantry] in town?
 - a. If yes: What do you think about this business?
 - b. If no, explain about the mobile market/pantry
4. Would a mobile market/pantry be a possible venue for selling your product? Why – or why not?
5. How do you think the market/pantry customers and/or local community would react to local produce offers?

Interview Questions (farmers who do sell to mobile market/pantry)

1. How would you describe your farm?
2. What are the venues you use to sell your product? Can you tell me about why you choose those venues?
3. Can you tell us how your partnership with a mobile market/pantry started and how it developed over time?
4. Compared to other venues, what is the volume of produce that you sell to the mobile market/pantry?
5. Are there any difficulties with using mobile market/pantry as a venue for your produce? Are there any advantages?
6. How do you think the market/pantry customers and/or local community react to local produce offers?