FARM-TO-SCHOOL YOLO:

CREATING AN EVALUATION FRAMEWORK FOR PROGRAM EXPANSION

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Abstract

of

FARM-TO-SCHOOL YOLO:

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In 2011, Yolo County Agricultural Commissioner John Young announced plans to utilize existing farm-to-school programs at two school districts located within the county – Davis Joint Unified School District and Winters Joint Unified School District – as models to spearhead farm-to-school programs in the three other school districts within the county – Esparto Unified School District, Washington Unified School District, and Woodland Joint Unified School District – and the Yolo County Office of Education's Head Start Preschool Program. This county-led farm-to-school program model, Farm-to-School Yolo, is unique in that specific school district programming is outside the jurisdiction of the county governance structure. As such, the appropriate role for the county is not to directly procure and serve local food on school menus, but to facilitate the efforts of school districts in doing so.

In order to evaluate whether Farm-to-School Yolo is best facilitating farm-to-school program expansion in partnership with the five school districts and Head Start program in the county, I surveyed existing literature and examined the Davis Farm-to-School program as a case study example in order to identify the thematic challenges all farm-to-school programs face. I determined that organization, sourcing, costs, funding, and participation are the five main factors

influencing farm-to-school program development and operations, and used these key themes to create a farm-to-school evaluation framework. I relied upon the county website and other external sources such as grant applications and news articles to learn how Farm-to-School Yolo was being implemented, and assessed actions taken against the farm-to-school evaluation framework to determine whether program efforts were being appropriately concentrated.

Since Farm-to-School Yolo is not responsible for day-to-day administration of direct services to students, its organization, souring, costs, funding, and participation efforts must support broader program infrastructure that benefit all school districts within the county as equally as possible, compared to other farm-to-school programs that operate more insularly. Utilizing this evaluation framework, I concluded that Farm-to-School Yolo is strategically utilizing the legitimacy it holds from operating at the county level to support measured systemic changes that build up individual school district farm-to-school programs. It has spearheaded initiatives for which there is broad consensus and mutual benefit, such as consolidation of work under the Yolo Farm to Fork organization, creation of Harvest Hub Yolo and Harvest of the Month, and application of its California Department of Food and Agriculture grant, engendering goodwill amongst all stakeholders. As program expansion continues, however, Farm-to-School Yolo must balance countywide goals against competing local pressures to ensure all students across the county continue to benefit from the program.

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INTRODUCTION

In 2011, Yolo County Agricultural Commissioner John Young announced plans to utilize existing farm-to-school programs at two school districts located within the county – Davis Joint Unified School District and Winters Joint Unified School District – as models to spearhead farm-to-school programs in the three other school districts within the county – Esparto Unified School District, Washington Unified School District, and Woodland Joint Unified School District. The farm-to-school program would also be extended to Yolo County Office of Education's Head Start Preschool Program, an early education program for low-income children under age five. The purpose of farm-to-school program expansion is to increase the amount of fresh local produce offered in school breakfasts, lunches, and after school snacks (Harvest Hub Yolo, 2013a). However, it is important to distinguish that specific school district programming is outside the jurisdiction of the county governance structure – as such, the appropriate role for the county is not to directly procure and serve local food on school menus, but to facilitate the efforts of school districts in doing so. In this thesis, I will evaluate how Yolo County can incorporate lessons learned from existing farm-to-school efforts in Davis, Winters, and others across the state and nation to best facilitate farm-to-school program expansion in partnership with Yolo County's five school districts and Head Start program.

What Is Farm-to-School? How Does It Affect the School and Local Environment?

Farm-to-school can be broadly defined as a school-based program that connects K-12 schools with local farms in order to increase sourcing of local and healthy foods into school cafeterias and classrooms. Local sourcing supports the general goals of farm-to-school programs – improved student nutrition, innovative health and nutrition education opportunities, and promotion of the economic well-being of small and medium-sized local and regional farmers

(Joshi et al., 2008). Farm-to-school programs have spread rapidly since the first in the nation was established in California with the Santa Monica-Malibu Unified School District's Farmers' Market Salad Bar in 1997 (CDE, 2012). Since then, farm-to-school programs have spread across 85 school districts and are continuing to take root in new communities every year (Joshi and Beery, 2007). While the profile of each farm-to-school program varies, featuring a combination of salad bars, school gardens, farm visits, and other nutrition education efforts, the abundance of fresh quality agriculture in California helps school cafeterias buy and feature locally produced foods including fruits, vegetables, meat, eggs, beans, and honey in school meals rather than rely solely on frozen or processed commodities (Joshi and Beery, 2007). These local purchasing efforts are then intertwined with nutrition and community agriculture based curriculum that provides students with hands-on learning opportunities such as building their own community gardens, farm visits, and recycling programs (Joshi and Beery, 2007).

Farm-to-school programs tend to feature more fresh foods than traditional school meal programs, but they are distinguished by the fact that the meals are primarily sourced by direct sales from local farmers, purchases from farmers' markets, or support from growers' collaboratives. For example, it is not enough that a school lunch feature freshly roasted squash—the squash must also be acquired from a local source. Although there is not a universal standard of local food defined by a specific distance, as population density and ease of supply affect the practicality of local sourcing, the United States Department of Agriculture (USDA) measures a "locally or regionally produced agricultural food product" to be less than 400 miles from its origin (Martinez, 2010).

In addition, farm-to-school programs tend to emphasize holistic health and nutrition education compared to the more traditional science-based curriculum, focusing on how food is connected to one's overall well being. They are also distinguished by the fact that students are

encouraged to step outside of the classroom alongside farmers and other producers to directly work the land from which nutrients stem. The food and education components of farm-to-school programs are thus intended to benefit both the consumers and suppliers: 1) Students are exposed to new healthy foods while farmers realize increased sales revenues from this new market, and 2) Students become engaged in the agricultural food cycle while farmers foster valuable connections with their local community. Accordingly, farm-to-school programs aim to provide small and medium-sized farms with critical new market opportunities as global competition and federal agricultural policies make it increasingly difficult for them to compete with larger farms in mainstream markets (Joshi et al., 2008).

Expansion of Yolo County Farm-to-School Programs Advances General Plan Goal

Given the success of the Davis and Winters farm-to-school programs, both of which are frequently cited examples in the national movement towards locally sourced healthy foods, Yolo County is uniquely positioned to help expand existing farm-to-school programs across the other three school districts within its borders. Program expansion is consistent with a key goal in the Agriculture and Economic Development Element of Yolo County's General Plan: "local preference – promote the use of foods and products from Yolo County to strengthen the local economy, improve health and connect residents with the agricultural community" (County of Yolo, 2009). Additionally, Yolo County is an ideal setting for farm-to-school program expansion because of the sizable proportion of its school districts' students who stand to benefit from healthier seasonal food offerings and the region's bountiful agricultural economy. Approximately 65 percent of the 38,000 preschool through Grade 12 students served within Yolo County are eligible for the national free and reduced lunch program, meaning that the majority of students are likely to have their dietary intake determined by the schools (Harvest Hub Yolo, 2013b). This large student participant base is complemented by a local economy where over 85 percent of land

is used for agriculture, including large traditional farming, small organic farms, livestock operations, and processing plants (Harvest Hub Yolo, 2013a). Accordingly, both students and workers stand to benefit from effective partnerships between schools and the regional agricultural economy. The map in Appendix A helps visualize where each school district is based within the county and the abundance of agricultural land in close proximity.

Although it may seem that farm-to-school programs are not a county issue, rather a school district or county office of education issue, Yolo County believes it should do all it can to promote local agriculture because it comprises a critical sector of Yolo County's economy. For example, farm-to-school aligns with its previously launched Yolo County Agricultural Marketing Initiative and its mission to reinvigorate Yolo County's agricultural community by accomplishing three goals: 1) position Yolo County as an authentic and valuable destination for quality food and wine tourism within the region and California comparable to Napa, Sonoma, and Mendocino; 2) educate the citizenry about the value of local agriculture as food; 3) increase sales opportunities for Yolo products (Brennan and Evans, 2009). By helping schools incorporate more local agriculture into meals and lesson plans, farm-to-school program expansion provides a platform for the county to further its commitment to the Agricultural Marketing Initiative's goals of promoting flavorful cuisine, informing the community about what grows around them, and providing new markets for farmers. As local farmers increase market share and economic productivity by sourcing to schools, more tax revenue is generated for support of other county functions. Given this background, a county-led effort to facilitate farm-to-school program expansion in partnership with individual school districts is entirely appropriate.

Yolo County's 2030 Countywide General Plan, a document the Board of Supervisors adopted in 2009 to map out land use planning over the next 20 years, set the stage for farm-to-school program expansion by tasking the Yolo County Agriculture Department to build on

existing partnerships and "create an effective Farm-to-School program to bring fresh locally grown/produced food to school meals and provide farm education programs" (County of Yolo, 2009). Creating an effective farm-to-school program is also a component of Yolo County's Tactical Plan, a strategic document that addresses how the county will meet its goal to "preserve and support agriculture" (County of Yolo, 2012a). Nevertheless, this is not an initiative that Yolo County is pursuing unilaterally without coordination and support from the school districts within its borders and county office of education – farm-to-school program implementation ultimately rests at their authority as neither the Agriculture Department nor the general county governance structure has direct oversight over the school system. Although some school districts within the county already have burgeoning farm-to-school efforts, a partnership with the county, in particular the Agriculture Department, can lead to better connections with farmers, vendors, and other stakeholders. For school districts that have not had yet had the opportunity to pursue a farm-to-school program, county-level support provides them with infrastructure and resources to start one. In order to be successful moving forward, the county and school districts must leverage one another's unique positions and expertise for new opportunities.

After the conclusion of a two-year development phase that studied how to expand upon the successes of the Davis and Winters Farm-to-School programs, Yolo County Agricultural Commissioner John Young, guided by a 60-member multi-stakeholder Advisory Task Force chaired by former California Superintendent of Public Instruction Delaine Eastin, officially launched Farm-to-School Yolo in October 2011 (Young, 2012). Early Farm-to-School Yolo press materials revealed that the program was collaborating with each Food Service School District Director in the county to meet three initial program goals: 1) make local food products available on school menus; 2) serve a high proportion of children who are eligible for free or reduced price

lunches; and 3) incorporate experiential nutrition education by involving school children in farm and garden based agricultural education activities (County of Yolo, 2011).

These initial goals were drafted to exclude specific student health outcomes, and instead underscored Yolo County's core commitment to local sourcing – linking fresh foods from regional farmers directly to the hands and mouths of students (County of Yolo, 2011). Although these three initial goals have not been referenced as specific deliverables as Farm-to-School Yolo has been implemented, they remain significant in any discussion about program expansion because they are indicative of the thematic mission of the effort as articulated in Yolo County's General and Tactical Plans – increasing student access to local agriculture in both the cafeteria and classroom.

Purpose of This Research: Advance Farm-to-School Yolo Program Expansion

As Yolo County officials work to grow farm-to-school programs at each school site within its borders, I will analyze the farm-to-school movement that has become increasingly popular in recent years, both locally and throughout the rest of the state and nation, in order to contextualize challenges and opportunities for Farm-to-School Yolo. In the following Literature Review section, I will first highlight the thematic challenges that all school meal programs face, before explaining how these challenges are exacerbated in farm-to-school programs compared to more traditional school meal programs. In the next section, I will analyze the Davis Farm-to-School program as a case study example to illustrate how some of these thematic challenges have been addressed and overcome in Farm-to-School Yolo's own backyard. In the Methodology section, I will utilize lessons learned from the Literature Review and Davis Farm-to-School program case study to create an evaluation framework for successful farm-to-school programs. In the Analysis section, I will utilize the Methodology framework to assess the work undertaken by Farm-to-School Yolo in attempt to grow individual farm-to-school programs in Yolo County's

five school districts and Head Start Program. Finally, in the Conclusions section, I will determine what else, if anything, Yolo County can learn from existing farm-to-school efforts in order to better facilitate program expansion throughout the region, and identify any issues requiring further consideration.

Chapter 2

LITERATURE REVIEW

Although farm-to-school programs are growing in popularity across the state and nation, there are no studies published in peer-reviewed journals that evaluate how a county-level farm-to-school program can best facilitate growth of individual school district programs. Furthermore, there are relatively few studies published in peer-reviewed journals that evaluate farm-to-school program impacts and recommend improvements, as most of the information available regarding specific programs is written for progress or evaluation reports to grant writers or other funding agencies (Izumi et al., 2006; Joshi et al., 2008; Izumi et al., 2010; Vo and Holcomb, 2011).

In order to provide better context about the environment in which farm-to-school programs must operate, I begin this Literature Review with background on traditional school meal programs, structured according to the major themes I have determined influence program operations – organization, sourcing, costs, funding, and participation – and underscore inherent program tradeoffs that occur when one aspect of program operations is emphasized over another. Next, I review the limited academic research that exists about farm-to-school programs specifically, structured according to the same major themes that I have determined influence traditional school meal program operations, and illustrate how farm-to-school programs must confront these same tradeoffs, along with their own unique challenges that must be addressed to deliver long-term program results. This Literature Review provides important context about the farm-to-school movement and reveals critical issues that must be addressed in order for farm-to-school programs to be successful, building towards a framework that Farm-to-School Yolo can utilize to facilitate program expansion across individual school districts.

Five Major Themes Influence Operations of Traditional School Meal Programs – Organization, Sourcing, Costs, Funding, and Participation

Organization – school meal programs serve agriculture and student interests. The federal school lunch and breakfast programs were originally created to serve healthy meals to school children while stimulating consumption of domestic agriculture – a twofold goal that has influenced the evolution of the nation's school meal programs and what types of foods are now regularly served (Food and Nutrition Service, 2010). The USDA administers both school meal programs and uses the large purchasing power of the federal government to procure food for schools at a lower unit cost than if a school was to purchase it on its own.

Sourcing – school meal programs rely on low cost food options. USDA foods, or commodities, comprise 15 to 20 percent of what is served in school meals and creates a subsidized market in which agricultural producers sell excess crops to schools for low costs (Food and Nutrition Service, 2010). The remaining food served in school meals is governed by state and local procurement policies usually in favor of the lowest bid.

Costs – although food costs benefit from USDA subsidies, other fixed costs do not. In addition to the costs of food, school meal programs must factor in the costs of equipment and labor required to prepare and serve each meal. These ongoing operations costs are partially recovered by federal and state reimbursements, but are primarily borne by school districts. Cost complications can arise from fluctuations in unionized employee salaries and benefits, inadequate facilities and infrastructure to serve a large body of children, strict food safety guidelines, and complex menu planning requirements for untrained staff (CDE, 2006).

Funding – reimbursements and fees do not cover real costs of program. Federal and state law requires each school district to provide one nutritionally adequate free or reduced-price meal during each school day to each designated low-income needy pupil, and provides a

reimbursement for this mandate. The remaining students who choose to participate in the school meal program pay full price. However, both federal and state government reimbursement rates are significantly lower than the actual cost of providing meals, and schools do not charge students paying full-price for meals at a rate that covers their costs. As a result, many schools are reliant on vending machine and a la carte food sales, which are exempt from nutrition standards set for school meals, to fund their meal programs. Table 1 provides additional information about the different funding mechanisms through which school districts recover costs of production.

Table 1. Financial Mechanisms for School Meal Programs

USDA Cash Assistance Reimbursement	• The federal government reimburses school districts for each meal served, although rates are significantly lower than the actual cost of providing meals. • Students can apply for free or reduced-price meals based on family income level. Districts receive tiered reimbursement – see Table 2. • School lunch and breakfast are entitlement programs, so federal funds will be provided without a cap as long as recipients meet income eligibility criteria.
State Cash Reimbursement and Other Local Funds	• The state supplements federal reimbursement rates for each meal served to needy pupils, no reimbursement is provided for meals that are not free or reduced-price – see Table 2. • School districts also raise local revenues from fundraisers and can qualify for various public and private grants.
School Meal Fees	• Students who do not qualify for free or reduced-price meals are charged full-price for purchased meals. • Each school district sets its own meal prices, but fees must remain affordable to encourage participation and often cannot cover costs of production. Many programs operate at a loss.
Vending Machines and Other A La Carte Sales	• Many schools rely on these "competitive" foods to boost revenues beyond federal and state reimbursements. • Food and drinks sold in vending machines or a la carte of school meal programs are exempt from nutrition standards.

Source: California Department of Education (CDE), 2006

Schools do not receive enough revenues from government reimbursement or full-price meal sales to cover the real costs of food, equipment, and labor required to serve each meal (CDE, 2006). For example, a study calculated that the average lunch cost $2.92 to supply in the 2008-2009 school year, at a time when federal reimbursement per free lunch was only $2.78

(School Nutrition Association, 2008). Table 2 details the federal and state reimbursement rates for which each meal is eligible and reveals that reimbursement rates have only slightly increased along with inflation. As a result, most programs operate at a deficit and lose money on every meal served.

Table 2. Government Reimbursement Rates for Each School Meal Served, 2014-15

	School Breakfast	**School Lunch**
Free Meals – Federal Free Meals – State	$1.62 - $1.93* $0.2248	$2.98 - $3.06** $0.2248
Free Meals – Total	**$1.8448 - $2.1548**	**$3.2048 - $3.2848**
Reduced-Price Meals – Federal Reduced-Price Meals – State	$1.32 - $1.63 $0.2248	$2.58 - $2.66 $0.2248
Reduced-Price Meals – Total	**$1.5448 - $1.8548**	**$2.8048 - $2.8848**
Full-Price Meals – Federal Full-Price Meals – State	$0.28 $0	$0.28 - $0.36 $0
Full-Price Meals – Total	**$0.28**	**$0.28 - $0.36**
*Higher reimbursement if schools serve over 40 percent free or reduced-price breakfast or over 60 percent free or reduced-price lunch ** Schools are also eligible to receive an additional $0.06 performance-based reimbursement for each lunch served		

Source: CDE, 2015

Recent federal school meal regulations require more fruits and vegetables to be served to students, a target that may prove increasingly difficult for some schools to meet because they do not have the equipment, personnel, or other infrastructure needed to cut and cook them in a manner that appeals to student tastes (Wilde and Kennedy, 2009). Reimbursement payments will be augmented for schools that meet improved nutrition performance measures, but only by six cents per meal. Although the Congressional Budget Office estimates that schools will receive an additional $1.5 billion in performance-based funding over the next five years, it is still estimated that the stricter federal nutrition regulations will add $3.2 billion to school meal costs over the next five years (USDA, 2012a).

Participation – students report distaste for healthier school meals. In recent years, high obesity rates plaguing children in California and across the nation has increased focus on the nutritional contents of traditional schools meals. Critics argue that current school nutrition and food policies favor industrial agriculture at the expense of student health (Rimkus et al., 2004; Mortazavi, 2011). As a result, 2010 Healthy Hunger-Free Kids Act (HHFKA) was championed by First Lady Michelle Obama to help school districts serve healthier meals by revising USDA dietary guidelines and requiring use of more nutritious USDA Foods such as fruits, vegetables, whole grains, and low-fat milk, while reducing the calorie, fat, and sodium levels in meals (USDA, 2012b). Table 3 demonstrates an example of an acceptable school lunch before and after the HHFKA, as many school districts were forced to update their menu plans in compliance with new nutrition requirements.

Table 3. Example of a School Lunch Meal Before and After HHFKA

Before HHFKA	After HHFKA
Cheese Pizza	Whole Wheat Cheese Pizza
Tater Tots	Baked Sweet Potato Fries
Ketchup	Low-Fat Ranch Dip
Canned Pineapple	Applesauce
	Fresh Grape Tomatoes

Source: USDA, 2012c

As the new nutrition guidelines are implemented in cafeterias across the nation, anecdotal evidence suggests that students are being served healthier meals than ever before, but that students are not necessarily consuming these new and improved foods. For example, students in Pittsburg launched a campaign against the new meals on Facebook and Twitter, students in Milwaukee staged a boycott, and students in Kansas made a parody video. Students complained that the smaller portion sizes, sold at higher prices to cover the cost of fresh fruits and vegetables that are routinely discarded, has left them feeling hungry and more likely to buy a la carte competitive foods instead of participating in the school lunch program (Yee, 2012). Improving the nutrition of foods served in school meal programs does not necessarily benefit students or

achieve goals of promoting student health if they choose not to eat the meals. To the extent that school meal participation rates drop, there will be less funding in the program available to help implement and sustain its other goals.

Summary. School meal programs are multi-faceted operations that strive to simultaneously achieve different goals. If long-term evidence reveals that school meal participation decreases as a result of HHFKA changes, program revenues will decline and it is possible that competitive food sales from a la carte food and beverages not regulated by the nutrition guidelines of school meal programs will rise in substitution (CDE, 2006; Wilde and Kennedy, 2009). It can be difficult for cash-strapped school districts, facing rising food operations costs, to resist the immediate high profits that competitive foods provide (Wilde and Kennedy, 2009). Schools must be mindful of potential unintended consequences when promoting healthier meals and be ready to balance those challenges with financial viability.

Farm-To-School Programs Face Same Challenges As Traditional School Meal Programs, with the Added Challenge of Sourcing Foods Locally

In addition to the challenges faced by traditional meal programs, farm-to-school programs must also provide menu items that are locally sourced, and renew focus on nutrition and agriculture based curriculum that teach students about the origins of their food. Accordingly, farm-to-school programs often face higher costs than traditional school meal programs while expected to achieve even loftier outcomes.

As stated earlier, there is very limited peer-reviewed research available that evaluates the impact of farm-to-school programs and recommends program improvements, as most of the research conducted is intended for progress or evaluation reports to grant writers and other funding agencies (Izumi et al., 2006; Joshi et al., 2008; Izumi et al., 2010; Vo and Holcomb, 2011). Although progress and evaluation reports provide insightful program information, they

are usually self-generated and have limited external validity. Existing peer-reviewed research can be classified into four main categories: 1) surveys of school food service directors, 2) statistical analyses of factors that may influence farm-to-school programs, 3) evaluation of farm-to-school case study reports, and 4) research on topics related to farm-to-school, such as salad bars and school gardens, but not conducted in relation to farm-to-school programs specifically. Although further peer-reviewed research is still needed to better understand how farm-to-school programs and outcomes can be improved for all stakeholders, the existing research provides important lessons learned regarding five core principles that comprise the farm-to-school framework – organization, sourcing, costs, revenues, and participation.

Organization – emergence of farm-to-school programs influenced by perceived challenges and local context. In one of the first peer-reviewed articles about farm-to-school programs, surveyed food service directors across four Midwestern states revealed their perceptions that the top benefits to purchasing local food were good public relations, being able to help the local economy, and access to fresher food. Top obstacles were lack of availability of certain foods year-round and ability to obtain an adequate and reliable food supply (Gregoire and Strohbehn, 2002). A subsequent survey of 383 food service directors (58 percent response rate) conducted in Michigan found that 73 percent of respondents were interested in purchasing food directly from a local farmer if price and quality were competitive, with interest rising to 83 percent if local foods were available through their current vendors. Amongst the 10.6 percent of food service directors who had experience purchasing locally, 70 percent reported positive experiences, while only 10 percent reported negative experiences due to inconsistent food quality, lack of reliability, and amount of effort required (Izumi et al., 2006). These early studies suggest that food service directors generally support the goals of farm-to-school programs, but their impression that the logistics would be too complicated prevent widespread program

implementation. The individual perception of farm-to-school program benefits, compared to obstacles, influence whether and how a program is implemented.

The rise in farm-to-school programs across the nation has resulted in an abundance of case studies reports that detail individual program goals, settings, and outcomes. These case studies are independently evaluated and lack a consistent method of data collection, making it difficult to compare the results of different reports and generalize findings across a broader sample of programs without more systematic analysis. One such analysis highlights how the local context influences the emergence and development of farm-to-school programs by drawing upon comparative case studies of a rural and urban farm-to-school program in Pennsylvania (Bagdonis et al., 2009). The rural farm-to-school effort was district-wide and championed by the food service director who perceived the program as a way to preserve traditional values. In contrast, the urban farm-to-school effort was concentrated at one school and championed by an outside non-profit organization that sought to ward off food insecurity and change the way the community viewed their food environment (Bagdonis et al., 2009). This case study comparison reflects the diversity of farm-to-school programs across different localities – what works in one school may not work in the next school.

Another study examined potential factors that correlate with farm-to-school programs and found no significant relationship between the prevalence of programs and states with general procurement laws that support local purchasing. However, farm-to-school programs were significantly more prevalent in states with specific farm-to-school laws enacted (Schneider et al., 2012). Although this study did not determine causal order, these findings may suggest that external infrastructure incentivizes individual farm-to-school efforts.

Sourcing – relationship between schools and farmers take time to develop.

Survey research described earlier found that food service directors were more likely to participate in a farm-to-school program if it was possible to keep working through their current vendors, and that some food service directors experienced inconsistent food quality when they tried sourcing locally (Izumi et al., 2006). This suggests that aversion to change and uncertainty deters some food service directors from considering a farm-to-school program. However, subsequent surveys of food service directors with at least two years of experience leading a farm-to-school program found that they had strategies in place that made it more efficient to buy from local farmers (Izumi et al., 2010). Additionally, food service directors believed that local purchasing signified more than a business decision – it was a way to connect students to the source of their food and make a commitment to the local community (Izumi et al., 2010).

Another study examining correlations between school characteristics and farm-to-school programs found that larger school districts participate in farm-to-school programs more so than smaller school districts. Interviews conducted with farmers confirmed that it is more convenient and profitable for them to supply school districts with large orders as opposed to transporting and coordinating smaller orders to numerous school districts (Vo and Holcomb, 2011). This suggests that both schools and farmers must realize operating and cost efficiencies in order for a farm-to-school vendor relationship to be sustained.

Researchers who are also active in the farm-to-school movement conducted one of the most comprehensive academic overviews of existing program case studies. In order to consolidate the data, Joshi et al., 2008, reviewed the various evaluation reports and selected 15 reports with robust quantitative methods and outcomes for analysis. Their analysis shows that farm-to-school programs tend to partner with individual small farmers and purchase food from them directly throughout the year. However, farm-to-school programs do not constitute big

business for most farmers and usually represents less than five percent of their total sales income. The availability and procurement of fresh fruits and vegetables fluctuates heavily with the growing season, and local purchasing by some farm-to-school programs decreases over time due to financial constraints. The primary benefit for farmers stems from the synergy farm-to-school programs create between schools, agriculture, and the community – many farmers strengthen their ties to local schools by providing farm tours and agriculture lessons in the classroom, efforts that may help increase future market share (Joshi et al., 2008).

Costs – significant upfront investment needed, but costs may level over time. The analysis of farm-to-school case studies by Joshi et al. reveals that farm-to-school programs can result in higher food costs compared to commodity foods, higher labor and training costs as cafeteria employees must prepare more fresh foods, and higher operations costs as new equipment is needed for the preparation and storage of fresh foods and new delivery and invoicing systems must be established (Joshi et al., 2008).

In contrast, a survey of food service directors with at least two years of experience leading a farm-to-school program found that many food service directors experienced cost-savings as a result of farm-to-school programs. By purchasing food directly from local farmers, they were able to cut out middleman costs for shipping and handling and costs driven by internal corporate product standards. However, the experience of these food service directors may be unique compared to others across the country because each already had the equipment and labor necessary to prepare whole fruits and vegetables, allowing them to avoid the higher costs of lightly processed fresh produce such as cut apple slices or shredded lettuce (Izumi et al., 2010). Additionally, these food service directors experienced in farm-to-school program operations have had the time needed to develop working relationships with specific vendors. This suggests that

the price of fresh food itself is not necessarily what drives farm-to-school program costs, but instead the associated start-up investment needed in new equipment, training, and systems.

Revenues – grants needed to help cover higher operating costs. It is significant that many of the case studies upon which peer-reviewed research is based are drawn from farm-to-school grant proposals. Grants and other private funds are often needed to supplement the traditional, yet limited, government subsidies for school meal programs, and the revenue generated from meals sold, especially those sold at free or reduced-price. The analysis of farm-to-school case studies by Joshi et al. reveals that most schools rely on government and private grants in order to support these increased costs, as students are not expected to pay for the full cost of meals and traditional government funding is extremely limited. Without grant funding or other fundraising efforts, it would be near impossible to financially sustain farm-to-school programs. As a result, schools and other interested program stakeholders not only bear the responsibility of identifying new funding sources, but also must confront questions of equity regarding who should pay for farm-to-school – parents via increased meal prices, local taxpayers via school bonds, or the state government via funding reallocations (Joshi et al., 2008).

Participation – taste preferences for farm-fresh foods must be encouraged. Joshi et al.'s review of farm-to-school case studies consistently show that farm-to-school programs lead to students eating more fruits and vegetables per day in the cafeteria, classroom, or at home, especially when the product is known to be fresh, locally, grown, and picked at the peak of its flavor. More students also understand sustainable agriculture cycles, identify healthier food options, and are more willing to try new foods after farm-to-school instruction. Additionally, reports that track school meal participation after implementation of farm-to-school programs consistently show increased participation rates, averaging 9.3 percent higher across free, reduced-price, and full-price meals. Participation rates are typically highest when farm-to-school

programs are still new – they gradually wane with the novelty of the program, but remain higher than before the program was introduced (Joshi et al., 2008).

These findings are reinforced by other research not conducted in the context of farm-to-school specifically, but relevant nonetheless as it examines associated program components such as salad bars and school gardens. For example, plate waste studies determine whether students actually eat fresh fruits and vegetables when presented with them, or if they merely take them to throw away. One study weighed San Diego elementary school students' lunch plates before and after they were finished eating and found that the presence of a salad bar, compared to traditional hot lunch, does not increase produce consumption alone. However, consumption was significantly higher when the salad bar offered a wide variety of choice in types of fruits and vegetables, perhaps because of the greater probability that students would find one suited to their tastes (Adams et al., 2005). These findings suggest that it is not enough to simply offer healthier foods to students and expect them to eat it. In order to maximize desired program outcomes, food must be presented in a manner that is appealing to students.

Another study interviewed Los Angeles elementary school students before and after introduction of a lunchtime salad bar program to determine if their eating habits changed (Slusser et al., 2007). Although this pre-post survey method relies on selective memory recollection over the tangible data that plate waste studies provide, researchers benefit from being able to account for both school meals and home meals. The study found a significant increase in daily fruit and vegetable consumption by students overall, but concentrated primarily during the lunch hour (Slusser et al., 2007). These findings suggest that program efforts beyond a salad bar may be needed if the ultimate goal is to promote a lifetime of healthy food choices.

Further research reveals that students receiving nutrition education, including hands-on experiences like gardening, develop the most significant lasting taste preferences for fruits and

vegetables. One study examined the impact of in-class nutrition lessons and garden activities compared to a control site across three Northern California schools and found that students who received classroom-based nutrition education had stronger knowledge of and taste preferences for vegetables than the control group, while students who received garden-based nutrition education along with the classroom component had the strongest taste preferences for vegetables (Morris et al., 2002). A similar study in San Francisco found numerous significant changes amongst students who gardened, including better ability identify vegetables, stronger taste preference for all vegetables but especially those they grew in the garden, more willingness to try new vegetables, and more frequent consumption of vegetables at school (Ratcliffe et al., 2011). Altogether, these findings suggest that nutrition and garden-based education helps familiarize students with the fruits and vegetables they are given access to in school cafeterias, and that such comprehensive experiences can shape lasting taste preferences and consumption habits.

Summary. Farm-to-school programs are dually inspired by a commitment to helping the regional economy and improving healthy food options for students, though specific goals are shaped by local district or school site priorities and can evolve over time. External community stakeholders launch some programs, while internal school stakeholders launch others. Policymakers can help build supportive program infrastructure, but food service directors ultimately play a key role in implementing and sustaining farm-to-school efforts.

Although the majority of food service directors are interested in launching farm-to-school programs, complicated sourcing logistics hold them back, as they are hesitant of irregular produce availability and delivery schedules. However, once they establish positive relationships and systems with new local vendors, many experience superior produce at lower costs. Farmers experience similar growing pains at the outset of sourcing to schools, as it is most efficient for

them to make one large delivery compared to coordinating multiple small deliveries, but support the programs because sourcing to schools helps them build important ties with the community.

At the outset, farm-to-school programs often result in higher operating costs for schools because fresh fruits and vegetables can be more expensive than commodity foods, especially when experimenting with new vendors and invoicing systems. Additionally, schools might have to make new investments in kitchen equipment and training for food service personnel so fresh foods can be expertly prepared and stored. These costs may decrease as program logistics are fine-tuned over time, but will be ongoing as kitchen equipment and training of personnel require updating. Since farm-to-school programs often have higher operating costs than traditional meal programs that mostly operate in deficit, it is not surprising that farm-to-school programs often turn to alternative creative funding streams for financial viability and sustainability.

Students are generally excited by the idea of locally sourced foods and their fresh flavors, resulting in higher school meal participation rates and increased knowledge and consumption of fruits and vegetables. Although this trend has proven difficult to sustain as program novelty wears off and students do not necessarily consume as much fruits and vegetables away from the school setting, post-program results are still better than pre-program results. Interactive cafeteria experiences and nutrition education are critical program components that reinforce the significance of local agriculture and lifelong healthy eating habits, inspiring students to continually learn and taste new things.

Farm-to-School Programs Must Work Within Traditional Confines to Shape Unique Program Goals

This Literature Review describes how farm-to-school programs face the same thematic challenges as traditional school meal programs, compounded with their own unique mission-driven challenges. Accordingly, it is estimated to take up to 10 years for school districts to make

all the necessary system changes to accommodate a farm-to-school program (Brillinger et al., 2003). Table 4 summarizes what existing research reveals about balancing tradeoffs between farm-to-school program organization, sourcing, costs, funding, and participation. These are dynamics Farm-to-School Yolo must take into consideration as it seeks to foster individual district-based farm-to-school programs within its borders.

Table 4. Key Takeaways from the Farm-to-School Literature Review

	Key Takeaways
Organization	• Farm-to-school programs influenced by local context – what works at one school may not work at another • Committed school personnel are essential, but supportive external infrastructure also helpful
Sourcing	• Aversion to change and uncertainty about quality of produce deters schools from local sourcing • Relationship between schools and farmers take time to develop – both parties must become accustomed to each other
Costs	• Significant capital investment needed to start a farm-to-school program – new systems and equipment to prepare and store fresh foods • Food and labor costs also higher for farm-to-school programs, but may level out over time
Funding	• Private funds needed to augment reimbursement and meal sales revenues, cover higher farm-to-school operating costs • Internal and external stakeholders expected to identify new funding streams
Participation	• Taste preferences for farm-fresh foods must be encouraged – marketing and presentation of foods, nutrition, and garden-based education • School meal participation rates jump when farm-to-school programs first implemented – wane with program novelty, but remain higher than before

Chapter 3

CASE STUDY: DAVIS FARM-TO-SCHOOL

A practical case study on Davis Farm-to-School, a nationally recognized program in Yolo County's own backyard, further illustrates the tradeoffs experienced by all farm-to-school programs described in the existing literature, while also revealing some of the specific challenges and opportunities that programs at school districts across Yolo County might face. The City of Davis is home to agriculture, a world-class university, and a population of 64,500 residents that constitute one of the most highly educated and socially liberal cities in the nation (United States Census Bureau, 2013). The Davis Joint Unified School District (DJUSD) is a medium-sized school district of nine elementary schools, three junior high schools, two high schools, and one continuation school, serving approximately 8,500 students with a free and reduced-price lunch eligibility rate of 20.8 percent, all of whom have access to farm fresh school meals via salad bar and hot lunch, and an education curriculum that includes nutrition, gardening, and recycling (Feenstra and Ohmart, 2012).

The Davis Farm-to-School program has received national recognition as a model for how schools can efficiently organize to incorporate locally grown foods to make nutritious meals that appeal to students (Ternus-Bellamy, 2011). And in particular, the Davis Farm-to-School case study exemplifies a model of farm-to-school program organization, sourcing, costs, funding, and participation strategies that has proven successful in Yolo County. In this section, I examine Davis Farm-to-School's evolution over the last 14 years and how it reveals key takeaways that may prove useful for Farm-to-School Yolo, from both an academic perspective and a practical perspective, since the two programs share overlapping terrain and stakeholders. This case study is drawn from documents published by the *UC Sustainable Agriculture Research Education*

Program, including a program manual detailing the emergence of Davis Farm-to-School and subsequent annual evaluation reports, as well as media articles about the program.

Evolving Organization, Sourcing, Costs, Funding, and Participation Strategies Shaped Davis Farm-to-School

Organization – progressive volunteers launched and sustained program. Unlike other farm-to-school programs prompted by external organizations with their own goals, Davis Farm-to-School was a homegrown movement targeted to meet its own community needs. The program originated in 1999 when parents and community members helped establish the first school gardens in Davis elementary schools and recognized the opportunity to further link the gardens to nutrition and health by utilizing the produce in a fresh salad bar for student lunches. It was a purely volunteer driven effort, borne out of a community located between some of California's richest agricultural production areas and known for its progressive values and citizen activism, in order to promote the holistic well being of students (Brillinger et al., 2003).

The volunteers were an educated and savvy group with enough resources to form a 501(c)3 nonprofit organization that would eventually be known as the Davis Farmers Market Foundation, offering the group a means of requesting grant funds and a recognizable identity within the community distinct from DJUSD. They researched existing farm-to-school models, wrote grant proposals, and built relationships with key program stakeholders– the Board of Education, district administrators, the Student Nutrition Services Director, representatives from the union representing food service employees, and local farmers (Brillinger et al., 2003). Given the external origins of the program, generating buy-in from school and district stakeholders was especially critical.

As Davis Farm-to-School grew from three pilot sites to become fully operational, volunteers continued to play a crucial role in ensuring its success. Volunteers organized the first

salad bar lunches when students were not yet accustomed to the new meal format, helping to clean and set up the salad bar, guide students through lines, and educate students about what they were eating (Brillinger et al., 2003). As volunteer levels eventually waned over time, the program was able to recruit students from neighboring universities seeking hands-on professional experience (Harmon, 2004). Altogether, these volunteers provided the program with a caliber of organizational support that would be near impossible to match in many other school communities, given the unique demographics of Davis.

In 2008, DJUSD entered into an official Memorandum of Understanding (MOU) with the Davis Farmers Market Foundation to work towards defined program goals (Feenstra and Ohmart, 2012). In 2013, the MOU was renewed to focus on the following: 1) promote farm fresh food in school offerings, 2) reduce solid waste through a comprehensive waste management program, and 3) provide school garden and farm-based education opportunities (Yolo Farm to Fork and DJUSD, 2013). This MOU, replicated in Appendix B, demonstrates the evolution of program goals over time from abstract concepts to specific deliverables. Most importantly, it underscores how volunteers continue to play an active role in shaping the program even as it became institutionalized within the school district.

Sourcing – partnership between schools and farmers still evolving. Davis Farm-to-School is lucky to operate amongst one of the most productive agriculture sites in the state. Nevertheless, much time and effort was required to establish strong relationships with the local farmers in its backyard. The program originally relied exclusively on the Davis Farmers Market for fresh produce, but many of these small farmers were unable to deliver directly to the school, forcing the Kitchen Manager/Salad Bar Coordinator to personally pick up the produce at the Wednesday or Saturday markets. This singular approach was not sustainable for DJUSD's daily salad bar model, as desired produce often sold out or certain vendors missed a market day,

prompting the Kitchen Manager to turn to a network of regional small wholesale farmers whose consistent delivery schedule and centralized invoicing system helped streamline the schools' purchasing processes.

As the program expanded across the district, it became more efficient to have bulk produce orders delivered to the central kitchen for dispersal to all the individual school sites, rather than to have each school site contact the same farmers with multiple smaller orders. Similarly, it became more efficient for farmers to be centrally paid from the overarching Davis Farmers Market Foundation, rather than requiring them to collect payment from each individual school site. DJUSD also created a new Forager position to focus exclusively on sourcing local produce and connecting with farmers (Brillinger et al., 2003). The diligence of school food personnel in building relationships with farmers has resulted in a mutually beneficial partnership still prevalent today.

The 2008 MOU signed by DJUSD and the Davis Farmers Market Foundation set a goal to locally source 60 percent of total produce used by 2010 (Feenstra and Ohmart, 2010). Although some farmers source directly to Davis Farm-to-School, many utilize a vendor to facilitate the distribution process. These vendors were eventually required to put in a competitive bid, starting with the 2010-2011 school year, so that one vendor could be selected to serve as its primary vendor – food could still be purchased from previous vendors, but not as much as is purchased from the primary vendor (Feenstra and Ohmart, 2010). DJUSD's bidding language requires vendors to provide as much local produce possible, defined as products grown within a 300-mile radius from Davis, but subsequent evaluation revealed that the primary vendor selected did not calculate "local" using the same definition as Davis (Feenstra and Ohmart, 2012). Accordingly, Davis Farm-to-School has been unable to hit the its 60 percent goal due to constraints imposed by the bidding process and inaccurate reporting by vendors.

Costs – expenses still high despite early program infrastructure investment. Davis Farm-to-School operates a salad bar five days a week as an alternative option to the traditional USDA hot lunch, increasing the operating costs of DJUSD's food services budget as extra personnel are required to prep, serve, and clean up two distinct meals priced well below the market cost of production. A portion of the budget is also reserved for cooking and other professional development classes for personnel so they have a deeper understanding of program goals. In addition to increased labor costs, the salad bar program requires new investments in kitchen equipment, promotion and marketing efforts, and educational materials and activities. In the first year, each school site required $2,000 worth of new equipment including a physical salad bar, serving containers and utensils, ice packs for refrigeration, and scales. The central kitchen where the majority of food is prepped before distribution to individual school sites also required extra refrigeration and workspace. In the second year, an additional $3,500 was required for combined school site and central kitchen upgrades (Brillinger et al., 2003).

Despite the initial investment in new kitchen upgrades, ongoing expenses remain high as the program expands, new equipment becomes old, and food service staff increases efforts to boost local sourcing. Complementing the fresh produce used in the salad bar, enhanced hot lunch entrees include local fruits and vegetables as well as non-produce local food such as rice, bread, meat, and olive oil, resulting in higher food costs. Increasing the amount cooking done from scratch, aside from solely prepping vegetables for the salad bar, has also increased labor costs (Feenstra and Ohmart, 2010). As Davis Farm-to-School strives to reach the 60 percent local sourcing goal set in its MOU, it is likely that operating costs will further rise. Aside from cafeteria expenses, the school garden program component also results in higher operating costs to DJUSD as tools and other equipment are procured and stipends are offered to volunteer coordinators (Feenstra and Ohmart, 2012).

Funding – unique demographics of Davis community enable fundraising. Given limited school budgets, external grant funds were critical to help supplement meal sales revenues, cover initial costs of Davis Farm-to-School, and secure the support of school officials. Early grant awards from the federal and state government and higher than average participation rates helped the program turn a profit during its first two years. Table 5 illustrates the start-up funding and costs incurred by Davis Farm-to-School during its first two years of operation.

Table 5. Start-Up Funding and Costs for Davis Farm-to-School

	Year One (2000/2001)	**Year Two (2001/2002)**
REVENUE		
Student salad bar sales	$20,423	$103,112
Adult salad bar sales	$436	$6,965
Grant funds applied to salaries	$22,075	$37,014
Grant funds applied to equipment (including truck lease)	$2,000	$7,100
Grant funds applied to training, outreach, and administrative supplies	0	$5,300
TOTAL REVENUE	**$44,934**	**$159,491**
EXPENSES		
Food and supplies	$8,765	$46,936
Salaries + benefits @ 30% (DJUSD Kitchen Manager, Lunchroom Supervisors, Kitchen Preparation and Clean-up)	$10,166	$59,540
Consultant to DJUSD		$2,400
Prorated labor (for meal check-in @ .05/meal)		$2,700
Salad bar equipment	$2,000	$4,900
Supplies, travel	$1,142	$3,167
Truck lease		$2,287
Administrative supplies (costed @ .03/meal)	$313	$1,435
Indirect costs (not including equipment @ 6%)	$1,223	$7,108
TOTAL EXPENSES	**$23,609**	**$130,473**
PROFIT	**$21,235**	**$29,018**

Source: Brillinger et al., 2003

Since grant money may only be used for its narrowly stipulated purpose, more revenue was still needed to fully implement farm-to-school program goals. The volunteers sought grants from private foundations, asked the PTA for support, and targeted fundraising efforts within the community through special events at the Davis Farmers Market in partnership with local businesses and community groups willing to help given their own personal ties to DJUSD. Community support was critical to forming a strong diversified base from which to launch (Brillinger et al., 2003).

The strong organizing and fundraising efforts by the volunteers provided an invaluable foundation upon which Davis Farm-to-School could demonstrate that it was a program worth investing. In 2008, voters approved Measure Q, a four-year parcel tax allocating an additional $70,000 per year to DJUSD to help purchase and serve additional fresh produce in its farm-to-school program. DJUSD was the first school district in the nation to ever receive this level of stable community support to help finance its meal program budget, and it entered into the MOU with the Davis Farmers Market Foundation the next year to provide oversight and accountability of this revenue (Feenstra and Ohmart, 2010). In 2012, voters approved Measure C to renew the parcel tax for another five years (Hudson, 2012). The continued approval of the parcel tax upholds Davis's reputation as one of the most progressive communities across the country, making it difficult to imagine that there are many other localities willing to champion such a proposal at the ballot box.

Even with the addition of Measure Q revenues, Davis Farm-to-School is reliant on fundraising events to sustain the program. These events have grown to become a tradition in the community – for example, the Annual Village Feast where community members enjoy a meal of locally sourced foods and present awards to teachers and volunteers who support the program, and the Annual Tour de Cluck bicycle tour of local chicken coops that draws cyclists from all

over the world. In 2011, the events raised $23,659 and $14,836, respectively, for Davis Farm-to-School (Feenstra and Ohmart, 2012). It also participates in the "Souper Bowl" soup competition event every year, showcasing the kitchen staff's catering abilities and generating more business for that revenue-raising enterprise. Altogether, Davis Farm-to-School is lucky to benefit from multiple funding streams that have helped grow the program. However, the unique demographics of Davis leave it unlikely that many other communities would be able to rely on such high levels of self-generated revenue.

Participation – strategic marketing encourages parent and student buy-in. Once DJUSD students had the option of choosing the salad bar as a substitute to their USDA hot meal offering, the next step was to make sure students actually took advantage of this choice. In order to maximize participation in the farm-to-school program, marketing and promotional activities were critical to inform students about the new meal option and benefits of participation. PTA presentations and school newsletters familiarized parents with the program and encouraged them to promote it to their kids. Presentations were made to school staff, including a sampling of a salad bar meal, so they could better explain its benefits to students. Finally, presentations were made to students so that they were familiar yet excited about their new choices, and educated about the importance of nutrition and local seasonal agriculture (Brillinger et al., 2003).

When the farm-to-school program first launched, school lunch participation rates skyrocketed. Data indicated that participation during the first few months of the program exceeded the break-even point where revenue from meal sales exceeded production costs, though it dropped below the break-even point after the fourth month as the novelty wore off. Seasonal weather and produce changes also affected student taste preferences – for example, students tend to be drawn to salad bars during warmer months and enjoy sweet summer fruits more than winter

vegetables. However, program revenues were still exceeding pre-farm-to-school figures and more students were trying fruits and vegetables than ever before (Brillinger et al., 2003).

In order to increase participation and educate new students about the farm-to-school program, food service personnel run a popular taste test program to encourage students to try new foods they were not otherwise planning to purchase. Davis Farm-to-School also made efforts to redesign its menu with appealing descriptions and photos to further highlight local food, and provide students with a bright cafeteria ambiance so they are encouraged to sit, relax, and actually eat their meal rather than rush off to recess or other activities. Ongoing cooking and professional development classes for food service personnel also help boost the quality of meals served to students, strengthening their impression of the program. Finally, farm visits and school garden programs, where students grow their own fruits and vegetables and utilize them in fun cooking projects, further familiarize students with the foods served in the cafeteria (Feenstra and Ohmart, 2010). Altogether, these efforts to boost student participation in Davis Farm-to-School represent the culmination of the founding volunteers' original commitment to more strongly link student nutrition and health to the choices they make in the cafeteria.

Recent data shows that 22.1 percent of DJUSD students participate in the school meal program, with 12.8 percent of those students participating via free or reduced price, numbers that have held steady over the past few years (Feenstra and Ohmart, 2012). Of the students eligible for free or reduced price meals, 61 percent of reduced-price and 70 percent of free meal students participate, rates comparable to other schools (Feenstra and Ohmart, 2010). Further increasing Davis Farm-to-School participation rates would make the program more equitable and efficient, as more students benefit from access to low-cost nutritious meals, and increased revenues help achieve and sustain program goals.

Summary. Over the last 14 years, Davis Farm-to-School has successfully launched, developed relationships with local vendors, recognized ongoing cost constraints, stabilized funding streams, and engaged students to eat more fruits and vegetables than ever before. Table 6 summarizes how this case study exemplifies key takeaways about balancing tradeoffs between farm-to-school program organization, sourcing, costs, funding, and participation.

Table 6. Successful Evolution of Davis Farm-to-School

	Davis Then (1999-2008)	Davis Now (2008-2015)	Key Takeaways
Organization	• Homegrown movement targeted to meet own community needs • Driven by volunteers who formed a 501(c)3 to help administer the program	• 501(c)3 entered into a formal MOU with DJUSD to deliver specific program goals • Community support continues despite some volunteer turnover	• Program sustained as it was institutionalized over time • Despite dedicated professional staff, program still heavily reliant on volunteers
Sourcing	• Small orders – farmers unable to deliver, school staff picked up produce at farmers market • Created a Forager position focused on sourcing, tap network of regional small farmers	• Larger orders – consolidate delivery to central kitchen then distribute to school sites • Vendors required to put in contract bid, DJUSD has less flexibility and choice in sourcing	• Sourcing easier over time as staff got more familiar with local farmers and systems • Can become complicated again if bid process forces staff away from known vendors and networks
Costs	• Initial capital investment needed for extra food service personnel and training, salad bar equipment, and food preparation equipment • Operating costs defrayed by donations and volunteer labor	• New capital costs to expand beyond salad bar to scratch cooking, more local sourcing of non-produce food, and equipment wear and tear • Operating costs formalized along with professionalization of the program	• Despite heavy initial investment in program infrastructure, ongoing capital investment needed to sustain program evolution • Increasing commitment to local sourcing as program evolves means higher ongoing operating costs
Funding	• Given limited school budgets, initial costs covered by external grant funds • Raised funds from existing community organizations	• Voters approved and renewed a $70,000 per year parcel tax to help fund program • Hosts its own annual fundraising events and provides catering services	• Multiple streams of revenue needed to sustain program • Community willing to provide financial support once they feel invested in program success
Participation	• Used marketing and promotional campaign to ensure participation prior to launching salad bar • High participation rates leveled off over time, but remain higher than pre-program rates	• Provide taste tests, farm visits, garden programs, and more to sustain interest • Less than a quarter of students participate in school meal program	• Constant effort needed to engage students and parents in program • Innovative tactics needed as novelty wears off to boost participation across all student demographics

Davis Case Study Illustrates Local Challenges and Opportunities for Farm-to-School Yolo

The Davis Farm-to-School case study illustrates how the program has evolved significantly over its 14 years, from a salad bar pilot project launched by volunteers to an institutionalized model sustained by partnerships with local farmers and a community's commitment to progressive food policy. While the evolution of the Davis program contextualizes key takeaways from existing literature regarding the five farm-to-school program dimensions, it is also important to recognize the unique characteristics of the Davis community that may not transfer broadly. Nonetheless, the existing literature and Davis case study are critical for Yolo County to take into consideration as it seeks to foster farm-to-school programs in the school districts within its borders, providing lessons learned about how successful farm-to-school programs are built over time.

Chapter 4

METHODOLOGY: FRAMEWORK DESIGN

As gleaned from the Literature Review and Davis Farm-to-School Case Study, Farm-to-School Yolo is not a traditional farm-to-school program being implemented by a school site or district – rather, it is a unique county-led effort to facilitate the growth of individual school-led farm-to-school programs. In order to lead the charge, however, it is important to first understand the challenges and opportunities faced by all individual farm-to-school programs. In the following section, I will further define the five key themes that emerged from the Literature Review and Davis Farm-to-School Case Study – organization, sourcing, cost, funding, and participation – that influence emergence and development of farm-to-school programs, in order to create a project-specific evaluation framework for Farm-to-School Yolo. Structuring an evaluation framework along these themes will allow future analysis to clearly track back to lessons learned from the literature and practical insights that can be gleaned from its shared environment with Davis Farm-to-School. This work will serve as the basis to analyze how and whether Farm-to-School Yolo is implementing the best plans and policies to facilitate individual school district program growth.

Unique Set-Up of Farm-to-School Yolo Calls for Specific Evaluation Framework

Yolo County's 2030 Countywide General Plan and Tactical Plan both call upon the Yolo County Agriculture Department to "create an effective Farm-to-School program to bring fresh locally grown/produced food to school meals and provide farm education programs" (County of Yolo, 2009; County of Yolo, 2012a). Early press materials touting Farm-to-School Yolo specified three initial program goals: 1) make local food products available on school menus; 2) serve a high proportion of children who are eligible for free or reduced price lunches; and 3)

incorporate experiential nutrition education by involving school children in farm and garden based agricultural education activities (County of Yolo, 2011).

However, these specific goals have not been referenced again in any subsequent public documents, such as the program website, grant applications, or news clips, so it is unclear how or whether these goals have guided Farm-to-School Yolo through program implementation. In fact, a document prepared for a presentation at the University of California, Agriculture and Natural Resources, describes different goals for Farm-to-School Yolo (Horowitz et al., n.d.), as shown in Appendix C. While the three initial program goals remain significant because they echo the thematic mission articulated in Yolo County's General and Tactical Plans and are indicative of the program's original framing – increasing student access to local agriculture in the cafeteria and classroom – they will not serve as the basis of the evaluation framework for Farm-to-School Yolo because such an analysis might not be reflective of ongoing program efforts. Instead, the Farm-to-School Yolo evaluation framework will be drawn from the major themes that emerged from the Literature Review and Davis case study regarding farm-to-school program tradeoffs.

Evaluation Framework Applies Common Themes to Individual Programs

Based on my research of existing literature and the Davis Farm-to-School program already in operation in Yolo County, I have determined that the five major themes shaping all farm-to-school programs, and especially any program to take hold within Yolo County, are organization, sourcing, costs, funding, and participation. Altogether, these five themes will comprise my farm-to-school evaluation framework for Farm-to-School Yolo, meaning that each component must be sufficiently present in the planning, development, and implementation of the program in order for it to make an even, yet powerful, impact across the county.

Organization. As discussed in the literature, organization not only refers to the specific internal structure of farm-to-school programs, but also the external infrastructure that provides the

context in which a program might operate. Similarly, the Davis experience underscores the importance of having buy-in from both administrative officials and the community as a whole. As such, implementation of Farm-to-School Yolo will be measured by how it collaborates with individual school districts and local stakeholders to generate both internal and external support for program operations that match the need of each school community.

Sourcing. Sourcing not only refers to the process by which schools are able to purchase local produce from farmers, but also that farmers are able to sell it to them. The Davis experience proves that it takes time to settle into a system where supply and demand are adequately matched. As such, implementation of Farm-to-School Yolo will be measured by how it works to improve efficiencies between both buyers and sellers to ensure local purchasing practices are sustainable.

Costs. Costs refer to the increased operating expenses that may result as cafeterias incorporate more fresh produce into meals, with regard to the price of food and any additional equipment or labor needed. The Davis experience demonstrates that these are not necessarily one-time costs, but that costs will be ongoing as schools strive to attain evolving goals. As such, implementation of Farm-to-School Yolo will be measured by how it helps cover and streamline costs that individual school district farm-to-school programs might incur.

Funding. Funding refers to the increased and diversified revenue sources needed to cover farm-to-school program costs. The Davis experience reveals that the community may be willing to help fund farm-to-school programs if there is buy-in for program goals and a clear nexus to program success can be demonstrated. As such, implementation of Farm-to-School Yolo will be measured by how it is able to leverage new revenues, while fully realizing practical limitations given existing and competing priorities within the distinct communities spread across the county.

Participation. Lastly, participation refers to the fact that farm-to-school programs are conducted in vain if students are not taking advantage of them, and that different tactical efforts must be utilized to keep consumers satisfied. The Davis experience reinforces the fact that schools cannot simply put food out and expect it to be eaten and appreciated – parents and students alike must be constantly reminded about the benefits of locally-sourced school meals. As such, implementation of Farm-to-School Yolo will be measured by how it encourages families of all demographics to take part in and continue to see the value in farm-to-school programs.

Summary. Identifying program developments along this five-theme framework will help Farm-to-School Yolo determine what needs to be done to foster individual farm-to-school programs across school districts in the county. It is important to note that these key takeaways shape a general framework that could also be applied to analyze other programs aside from Farm-to-School Yolo specifically. Table 7 presents lessons learned from the academic research and Davis Farm-to-School Experience side-by-side, from which key takeaways for Farm-to-School Yolo are drawn and will be used to evaluate program implementation and progress.

Table 7. Literature and Case Study Provide Key Takeaways, Comprise Evaluation Framework

Framework	Literature Review	Davis Case Study	Key Takeaways
Organization	• Farm-to-school programs influenced by local context – what works at one school may not work at another	• Program sustained as it was institutionalized over time	• Each individual school district and school has own strengths and weaknesses – natural for programs to be different
	• Committed school personnel are essential, but supportive external infrastructure also helpful	• Despite dedicated professional staff, program still heavily reliant on volunteers	• Buy-in from internal and external stakeholders critical
Sourcing	• Aversion to change and uncertainty about quality of produce deters schools from local sourcing	• Sourcing easier over time as staff got more familiar with local farmers and systems	• Adaptable systems needed to encourage local sourcing
	• Relationship between schools and farmers take time to develop – both parties must become accustomed to each other	• Can become complicated again if bid process forces staff away from known vendors and networks	• Expertise must be developed amongst schools and farmers to sustain long-term local sourcing practices
Costs	• Significant capital investment needed to start a farm-to-school program – new systems and equipment to prepare and store fresh foods	• Despite heavy initial investment in program infrastructure, ongoing capital investment needed to sustain program evolution	• Schools face major upfront infrastructure costs to launch program
	• Food and labor costs also higher for farm-to-school programs, but may level out over time	• Increasing commitment to local sourcing as program evolves means higher ongoing operating costs	• Contain costs for existing scope of work before considering program expansion
Funding	• Private funds needed to augment reimbursement and meal sales revenues, cover higher farm-to-school operating costs	• Multiple streams of revenue needed to sustain program	• Traditional meal program funding sources not sufficient to launch program
	• Internal and external stakeholders expected to identify new funding streams	• Community willing to provide financial support once they feel invested in program success	• Creative funding sources needed, but vary given disparate school and community resources
Participation	• Taste preferences for farm-fresh foods must be encouraged – marketing and presentation of foods, nutrition, and garden-based education	• Constant effort needed to engage students and parents in program	• Involvement of county creates potential to leverage additional stakeholders outside of school district to boost program profile
	• School meal participation rates jump when farm-to-school programs first implemented – wane with program novelty, but remain higher than before	• Innovative tactics needed as novelty wears off to boost participation across all student demographics	• Any initial successes cannot be taken for granted, must constantly work towards maintaining and growing program

Application of Farm-to-School Framework Will Measure Program Growth in Yolo County

This Methodology section synthesizes key takeaways from academic research regarding farm-to-school programs and the experience of Davis Farm-to-School in order to create a project-specific evaluation framework for Farm-to-School Yolo. Interpreting the Davis case study with findings form the literature, it becomes clear that while all farm-to-school programs share some general commonalities, each program is also likely to be influenced by its own unique geographical, political, and socio-economic context. Since Farm-to-School Yolo is not a traditional program being implemented by a school site or district, but is a county-led effort to facilitate the growth of individual school-led farm-to-school programs, it is especially important to have an evaluation framework that can account for such differences. Accordingly, the success of Farm-to-School Yolo will not be measured by concrete numbers such as amount of produce locally sourced or percentage of students who participate in the program, but will instead be evaluated against broad programmatic infrastructure put in place to encourage each individual school district towards its own definition of progress.

Chapter 5

ANALYSIS: FRAMEWORK APPLICATION

The evaluation framework outlined in the Methodology section provides a foundation from which to analyze how and whether Farm-to-School Yolo is implementing the best plans and policies to facilitate individual school district program growth. In the following section, the key takeaways synthesized from the academic research and Davis case study will be used as a lens through which Farm-to-School Yolo is measured – every action taken by Farm-to-School Yolo will be considered against these takeaways to determine whether program efforts are being appropriately concentrated. I will draw upon the five farm-to-school program dimensions – organization, sourcing, costs, funding, and participation – in order to summarize how Farm-to-School Yolo is being spearheaded, assess whether program implementation follows key takeaways from the evaluation framework, and identify ways in which program implementation deviates from key takeaways. This analysis will serve as the basis from which program recommendations will later be made.

Since Yolo County officials were not available to directly assist with this research, information about Farm-to-School Yolo implementation used in the Analysis section is drawn from the county website and other external sources such as grant applications and news articles. Accordingly, this analysis will only be practical to the extent that these external sources accurately capture events.

Organization – How Does the Program Generate Internal and External Support?

Each school district, and thus each program, will be different. One of the key takeaways regarding farm-to-school program organization is that each individual school district and school has its own strengths and weaknesses, so it is only natural that individual programs also be different from one another. Although Farm-to-School Yolo is a component of Yolo

County's General Plan, the Plan does not indicate what is meant by program expansion – is it enough that each school site have some aspect of farm-to-school, or is it intended that each school site foster a program as expansive in scope as that operating in DJUSD? – nor does it indicate the role the county should play with school districts independently and separately governed. As such, there is no consistent program model in existence across Yolo County upon which Farm-to-School Yolo can try to expand.

While Davis Farm-to-School already boasted a multi-faceted program incorporating local sourcing, scratch cooking of seasonal foods, nutrition education, school gardens, and even composting, all funded by a local parcel tax, prior to the adoption of Yolo County's General Plan, other school districts within Yolo County had less robust programs, if any, in place. For example, Washington Unified School District had a classroom nutrition program (Yolo Farm to Fork, 2013a) and Woodland Unified School District had an edible school garden program (Yolo Farm to Fork, 2013b), but neither school district had incorporated each other's corresponding farm-to-school program aspects. Esparto Unified School District had just received a three-year specialty crop block grant from the California Department of Food and Agriculture (CDFA) in 2011 to increase accessibility to specialty crops and address food security and healthy eating in rural communities by educating children on how to garden and reshaping attitudes towards food (USDA, 2011). It is unclear what, if any, farm-to-school efforts existed at the county Head Start program. Only Winters Unified School District had a comprehensive farm-to-school program in place, originating as a pilot program in 2003 and evolving into a permanent educational gardening program and market meal program that locally sources over 50 percent of school cafeteria food (Harmon, 2004; Feenstra et al., 2013).

Another important distinction to draw between DJUSD and other school districts, further highlighting why there is no consistent program model in existence across Yolo County upon

which Farm-to-School Yolo can try to expand, is the wide socioeconomic disparities between the school districts. Yolo County is very diverse, with more urban cities like Davis next to rural agricultural regions like Esparto, that each has distinct population demographics and therefore distinct community needs. With regards to school districts, socioeconomic demographics can be gauged by the percentage of students who qualify for free or reduced-price lunch (FRP), which reflects the percentage of low-income students from the community served by the school. While only 22.2 percent of DJUSD students qualify for FRP, indicating that the overwhelming majority of students served do not come from low-income families, more than 65 percent of students at the other four school districts do qualify for FRP – 65.5 percent FRP at Woodland, 67.3 FRP at Winters, 69.2 FRP at Esparto, and 72.0 percent at Washington (CDE, 2013) – indicating that the majority of students served across the rest of Yolo County do come from lower-income families. These statistics suggest that simply looking to replicate Davis Farm-to-School into other school districts may not translate well, as available school and community resources may vary greatly.

Since there is no common farm-to-school experience that exists in Yolo County, with existing program efforts at each school district being vastly different and servicing disparate student populations, Farm-to-School Yolo program implementation must strike a balance between helping to launch new efforts and not getting in the way of already successful efforts. Prior to officially launching Farm-to-School Yolo in October 2011, Agricultural Commissioner John Young met with each school food service director and superintendent at their respective district central kitchens and obtained their commitment to participate in the new countywide effort to expand farm-to-school (CDFA, 2012). This move demonstrates that Farm-to-School Yolo recognizes each school district program as individual players working towards a shared goal. Securing the commitment and buy-in of key school personnel was also important because although Commissioner Young's office is responsible for overseeing program implementation,

nothing could be accomplished without the cooperation of school districts, as neither the Agriculture Department nor the general county governance structure has direct oversight over the school system.

Garnering buy-in from internal and external stakeholders is critical. Another key takeaway regarding farm-to-school program organization is that all stakeholders must have a vested interest in program success. Although Farm-to-School Yolo is enshrined within Yolo County's General Plan, suggesting that the program embodies the values of the local community, its origins within the county governance structure distinguishes the program from other farm-to-school programs that rose organically from within an internal school organization or external volunteer organization. Accordingly, it is critical that when tasked with this new program responsibility, Agricultural Commissioner Young made it one of his first priorities to connect with the individual food service directors and superintendents across the different school districts, as they ultimately play a key role in sustaining farm-to-school efforts. This was especially important since school districts are independently governed and the county cannot require them to adopt a farm-to-school program. Additionally, since most school districts already had some farm-to-school program element ongoing, they must understand that county efforts are intended to supplement and further facilitate those efforts, not to replace those efforts.

In order to bridge the gap between the county and schools and also take advantage of existing farm-to-school infrastructure, Farm-to-School Yolo is leveraging local community partnerships to assist with program implementation. Agricultural Commissioner Young made it a priority to connect early with volunteer stakeholders who had been key to launching other farm-to-school programs across the county by assembling a 60-member multi-stakeholder Advisory Task Force to study how to build upon what had already been achieved in Davis and Winters (Young, 2012). It is also now collaborating with the Davis Farm-to-School program and the

Davis Farmers Market Foundation, with the latter organization recently re-branding itself as the Yolo Farm to Fork in order to reflect a new expanded countywide mission.

Although the Yolo Farm to Fork will continue to oversee the Davis Farm-to-School Program, it also intends to help anyone in the Yolo County community with creation or expansion of a related program, while shining a light on all the successful programs in Yolo County from which others can learn (Yolo Farm to Fork, 2013c). The new mission of Yolo Farm to Fork is to educate the public, especially children, about the value of a farm to table community food system (Dunham, 2012). While the Davis Farmers Market Foundation has operated on a volunteer basis, only hiring consultants and independent contractors to help deliver program services as needed, Yolo Farm to Fork has decided to hire a full-time Executive Director to professionally manage the organization given its expanded mission (Dunham, 2012).

Despite its new countywide mission, however, it is important to remember that Yolo Farm-to-Fork is an organization that originated within the Davis community – it has been re-branded and the board is committed to broadening its reach, but it may take some time before priorities fully shift. Another potential issue is that Yolo Farm to Fork may run into more obstacles than previously accustomed in its mission to help grow other farm-to-school program, as the Davis community is uncharacteristically affluent compared to the rest of Yolo County and benefits from a uniquely active and progressive citizenry. For example, Davis Farm-to-School was heavily reliant on parent and community volunteers to help staff its first salad bars – it is unclear if other school districts will be able to draw upon a similar group of volunteers, or if a strong volunteer base is available in other communities outside of Davis.

Sourcing – How Does the Program Ensure Sustainable Local Purchasing Practices?

New systems are required to make local sourcing work. One of the key takeaways regarding farm-to-school program sourcing is that new procurement methods are needed to

engage in local sourcing. An examination of baseline farm-to-school program efforts that existed in Yolo County prior to the launch of Farm-to-School Yolo revealed that garden and nutrition education programs were more widespread than programs getting locally sourced foods into school cafeterias – only Davis and Winters had cafeteria-based programs while education-based programs existed in all five school districts. And although schools within Yolo County operate amongst one of the most productive agricultural regions in the state, the experiences of the Davis and Winters farm-to-school programs reveal that geographical proximity to farmland does not immediately result in effortless local sourcing. However, the fact that Davis and Winters have already established local sourcing practices has proven beneficial to Farm-to-School Yolo, as it is able to build upon this knowledge and infrastructure to connect the neighboring Esparto, Washington, Woodland, and Head Start programs – food service directors new to the task have colleagues they can turn to for guidance and know local farmers already accustomed to working with schools.

In order to facilitate local purchasing by school districts across the county, the Yolo County Department of Agriculture launched the Harvest Hub Yolo "food hub" website (www.harvesthubyolo.org/foodhub), a virtual market place where growers can post products available for immediate sale, and where school food service directors, restaurants, and other consumers can purchase products directly from growers (County of Yolo, 2013a). By allowing farmers to post produce available for sale, Harvest Hub Yolo will increase their capacity to serve more schools more efficiently. Schools will similarly have a better sense about what produce is seasonal and the quantities available in the market, allowing for easier menu planning. Farm-to-School Yolo also intends to further develop the system so that it eventually meets the needs of both small farmers and individual school districts, some of which already have their own local sourcing systems in place (Frances, 2013a). For example, enabling school districts to post bids

for food they need on the site could maximize system usefulness by helping them connect with farmers able to meet their demand (Democrat Staff, 2013).

In unveiling Harvest Hub Yolo, Farm-to-School Yolo also provided training sessions to help farmers post and food service directors purchase products on the site, maximizing efficacy and identifying system feedback upon which to build future upgrades. Farm-to-School Yolo is also providing professional workshops for local farmers so they are encouraged to better promote and sell their produce to schools, an entirely new market with which few have had much experience (Frances, 2013a).

Farm-to-School Yolo has also partnered with Capay Organic, a local farm that sells its own produce to schools and acts as an aggregator for smaller local farms that want to sell to schools but do not have the resources to establish their own purchasing and delivery systems (Frances, 2013b). Capay Organic volunteers its West Sacramento warehouse as a centralized food distribution point for all the schools in the county – small farms that sell to schools can deliver the order to the warehouse instead of to each individual school site, and Capay Organic then serves as the single delivery source to schools (Ternus-Bellamy, 2012). This distribution partnership allows farmers to save on expensive delivery costs so they can increase sourcing to all schools across the county. Connecting other farmers interested in local sourcing with one another may also lead to the establishment of more efficient aggregation models.

Schools and farmers must be open to change and develop expertise in local sourcing. Another key takeaway regarding farm-to-school program sourcing is that expertise must be developed amongst both schools and farmers in order to sustain long-term local sourcing practices. The experience of Davis-Farm-to-School and other programs across the state and nation reveal that complicated sourcing logistics is one of the primary barriers against farm-to-school program implementation, but that the process becomes less daunting over time as

relationships are established between food service directors and farmers. Since Farm-to-School Yolo does not have direct oversight over how farm-to-school programs are implemented in individual school districts, the Agriculture Department correctly recognizes that it cannot simply set a local procurement mandate for each school district to achieve, but that it can help leverage such connections between schools and farmers.

The Harvest of the Month program is one relatively simple way Farm-to-School Yolo introduces schools and local farmers to one another. Under the program, a different seasonal fruit or vegetable is featured in school lunches each month and students receive informational fact sheets about the product's nutritional value and new ways to eat them (Harvest Hub Yolo, 2013c). An example of the distributed fact sheet is provided in Appendix D. The program's focus on acquiring, selling, and promoting one crop, compared to trying to source an entire menu with locally grown foods allows schools and farmers alike to ease into local sourcing. Once schools and farmers develop a working relationship with one another and realize the nutrition and economic benefits to be gained, they will be more encouraged to increase local sourcing.

Costs – How Does the Program Streamline Costs Across School Districts?

Schools face significant upfront infrastructure costs to launch farm-to-school programs. One of the key takeaways regarding farm-to-school program costs is that schools must be prepared to commit a major investment of time and resources to launch the effort. Schools must be ready to boost fruit and vegetables purchases and make new investments in kitchen equipment. In order to help defray these costs, the county is giving school districts a small direct subsidy to support local procurement and necessary upgrades to kitchen equipment (CDFA, 2012). Additionally, Farm-to-School Yolo is indirectly offsetting farm-to-school start-up costs by providing programmatic infrastructure used by school districts to coordinate and implement their individual programs, costs that would also otherwise be borne by school districts

if not for county support. For example, Farm-to-School Yolo supports the Harvest Hub Yolo website so schools can buy fruits and vegetables more efficiently.

Farm-to-School Yolo also supports schools by providing cooking classes for food service personnel so they can incorporate fresh produce into meals made from scratch that appeal to student palates (County of Yolo 2013b). Georgeanne Brennan and Ann Evans, familiar Davis Farm-to-School stakeholders and authors of the "Davis Farmers Market Cookbook," offer these classes regularly to correspond with growing seasons and are also working on a recipe guidebook for all schools interested in cooking with local produce (Frances, 2013a). Altogether, these services and other administrative support provided by Farm-to-School Yolo are intended to complement district program efforts.

Spreading program expenditures across all school districts equally helps manage expectations. Another key takeaway regarding farm-to-school program costs is to not bite off more than one can chew. Established farm-to-school programs have less marginal capacity to expand compared to others, so if that is where Farm-to-School Yolo wanted to concentrate its efforts, it would require significant costs in order to make a slight impact. Instead, Farm-to-School Yolo focused initial costs on general program services such as establishing local sourcing systems and food service personnel trainings, in which all school districts can take part and receive some marginal benefit. It was also important that program expenditures were equally distributed during the first phases of the program in order to promote an atmosphere of trust rather than competition. For example, the county allocated an identical portion of grant funding to help individual school districts cover their own procurement or equipment needs, despite the fact that a district like Davis already has its own dedicated funding stream to cover operating costs while other districts do not. As such, Farm-to-School Yolo is careful to avoid spending

resources in a way that creates winners and losers by supporting one jurisdiction over another, as that may inadvertently jeopardize local cooperation the overall program.

Funding – How Does the Program Leverage New Revenues Given Competing Community Priorities?

Multiple revenue sources are needed to grow farm-to-school programs. One of the key takeaways regarding farm-to-school program revenues is that multiple revenues sources, beyond traditional meal program funds, are needed cover program expenses. Similarly, Farm-to-School Yolo is a self-sustained operation that receives no specific allocations in the county's general fund budget and will rely on private foundation and government grants for funding (County of Yolo, 2011). In 2012, Yolo County applied for and was awarded a $399,930 three-year grant from the California Department of Food and Agriculture (CDFA) to promote California Specialty Crops and achieve five specific grant objectives (County of Yolo, 2012b). Table 8 outlines each grant objective and the steps Farm-to-School Yolo has taken to achieve it:

Table 8. Farm-to-School Yolo Progress on CDFA Grant Objectives

	Objective (CDFA, 2012)	**Farm-to-School Yolo**
1.	Enhance Yolo County Food and Agriculture website to feature Yolo specialty crops, especially those of interest to food service	**Complete** – development of Harvest Hub Yolo (County of Yolo, 2013a)
2.	Conduct 45 food service trainings focusing on cooking with specialty crops and three farmer trainings to connect them to the needs of school food service	**In progress** – food service and farmer trainings by Brennan and Evans underway (County of Yolo, 2013b)
3.	Evaluate impacts on school procurement changes with a goal of increasing procurement of specialty crops to 35 percent of all produce	**Not yet started** – Must work on measuring baseline and future procurement levels – contract planned with UC Davis (CDFA, 2012)
4.	Create a California Specialty Crop Guidebook for School Lunch to be used statewide by food service and agricultural commissioners based on the pilot created in Yolo County	**In progress** – Currently being developed by Brennan and Evans, due out in 2015 (Frances, 2013a)
5.	Distribute information statewide through agricultural and nutrition conferences, publications, and statewide websites	**Not yet started** – guidebook will be available for free online (Frances, 2013a); must work on other distribution channels

Although funding will be allocated directly to Yolo County and will be used to help implement its own programs, the terms of the grant require some of the expended funds to have a broader applicability, thereby requiring Farm-to-School Yolo to develop shared tools, such as guidebooks and other manuals, that can be utilized by other school districts across the state (CDFA, 2012). Since the entirety of the grant has been earmarked to achieve these specific objectives, the majority of which are already in progress, it is likely that other revenues sources will be needed for any subsequent Farm-to-School Yolo program objectives. Additionally, it is unclear how the program will be sustained once that funding source expires.

A diverse base of funds for sustained program support might not be available in all communities. Another key takeaway regarding farm-to-school program revenues is that disparate school and community resources will affect the quantity and quality of external program funding identified. The experience of Davis and Winters reveals the critical role community fundraising plays in sustaining farm-to-school programs. Both programs relied heavily on grant funding in their earlier stages, but had to broaden their reach in order to achieve evolved goals. Although this is a challenge faced by all farm-to-school programs, the parallel existence of several successful district-based farm-to-school programs within the county may make it more difficult for Farm-to-School Yolo to raise revenue in this manner. The geographic overlap could be helpful in some ways, as core fundraising infrastructure is already in place, but it could also lead to competition for increasingly scarce donations and cause increased fatigue towards the issue. For example, donors who have already established partnerships with the Davis or Winters programs may not have additional resources to contribute to Farm-to-School Yolo or other school districts' programs. At the same time, it is unlikely that the Davis or Winters programs would be able to share the revenue they have raised, as they must meet their own operating costs first.

Another revenue stream that benefits Davis Farm-to-School exclusively is its Measure Q parcel tax. The unique demographics of the Davis community also suggest that it unlikely that the residents of other school districts within Yolo County, all of which have a much higher concentration of low-income students who qualify for free or reduced-price lunch, would be as eager to levy a voluntary tax on themselves despite being generally supportive of farm-to-school program goals. It is the exception, not the norm, for a farm-to-school program to receive any taxpayer funds, and it may never become economically or politically feasible for Yolo County to specifically allocate for Farm-to-School Yolo in its general fund budget, or for other school districts to fight for a parcel tax to fund farm-to-school programs.

Participation – How Does the Program Encourage All Demographics to See Its Value?

Students must be encouraged to try new foods both in and out of the cafeteria. One of the key takeaways regarding farm-to-school program participation is that all stakeholders must be leveraged to increase participation rates and ingrain healthy eating into all students' lifestyles. Farm-to-School Yolo promotes the incorporation of interactive nutrition education programs into the school curriculum to get students excited about healthy foods. Beginning in October 2012, it encouraged all schools across the county to begin participating in the Harvest of the Month Program, as earlier described (Harvest Hub Yolo, 2013c).

Additionally, Yolo Farm-to-Fork is partnering to share information about the gardening, recycling, and nutrition programs that flourished in the Davis Farm-to-School program so that schools across Yolo County can implement program components best suited to their own needs (Peterson, 2013). Altogether, these efforts introduce students to various facets of nutrition, building upon one another to turn healthy food choices into a sustainable habit, and keep all types of stakeholders interested program outcomes.

Initial interest in farm-to-school programs will wane if efforts are not made to sustain high participation rates. Another key takeaway regarding farm-to-school program participation is that any initial program successes cannot be taken for granted. High program participation rates are important not only because farm-to-school program goals are null without it, but also because it represents a funding stream upon which school meal programs rely. As more students buy school meals, especially at full price, farm-to-school programs receive more revenues to work towards program goals. However, since continued marketing and promotion efforts are necessary to keep participation rates high, and these efforts require start-up costs to implement, Farm-to-School Yolo must approach them as a necessary investment, as the experience of other farm-to-school programs reveal that consistent self-generated revenue is ultimately needed to balance out dependence on more temporary funding sources.

Although farm-to-school programs experience high meal participation rates upon introduction, participation rates drop over time unless continued efforts are made to market the program towards students. While the Harvest of the Month program is a good first start towards marketing farm-to-school programs, its reliance on the distribution of fact sheets alone may become repetitive for students over time and not sustain excitement to learn more about different fruits and vegetables and purchase school meals. Similarly, while school gardens provide a critical lens through which students are introduced to the local agriculture community, such activity may also become repetitive for students over time and fail to keep them engaged in farm-to-school efforts.

It is also important to keep parents excited about farm-to-school programs, as their financial and moral support for the program is often expressed through their children's participation rates in the program. However, it is unclear what efforts are being made to inform parents across the different school districts about farm-to-school meals and the benefits of

participation. Additionally, it is likely that the parent community served by farm-to-school programs outside of DJUSD is less active and engaged than that specific parent community.

Farm-to-School Framework Highlights Program Successes and Gaps in Implementation

The operation of Farm-to-School Yolo is complicated by the fact that it is a countywide effort to expand farm-to-school programs into every school site, but the county governance structure has no direct control over individual school districts and each school district already had its own varied farm-to-school element ongoing upon program introduction. As such, implementation efforts have focused on ensuring that school districts have access to the infrastructure needed to run their own unique farm-to-school programs. Farm-to-School Yolo has partnered with an established non-profit organization to attract new program funding and leverage existing stakeholder resources for districts with burgeoning farm-to-school programs. It has created innovative new tools such as Harvest Hub Yolo, training classes for both food service personnel and farmers, and the Harvest of the Month Program that benefit the different levels of farm-to-school programs taking root across Yolo County. However, this analysis of Farm-to-School Yolo also reveals some gaps in program implementation, particularly around two of the five farm-to-school program dimensions – funding and participation – that deserve additional focus in order to maximize program expansion, and serves as a basis for program recommendations regarding how Farm-to-School Yolo can best help each individual school district program thrive.

Chapter 6

CONCLUSION

In this thesis, I use lessons learned from existing farm-to-school efforts in Davis, Winters, and others across the state and nation to create a project-specific evaluation framework and analyze how Yolo County can best facilitate farm-to-school program expansion in partnership with its five school districts and Head Start program. Analysis of Farm-to-School Yolo is rooted in the fact that it differs from Davis Farm-to-School and more customary school district or site based farm-to-school programs, as it is based within the county governance structure that has no direct oversight regarding what programs are implemented in schools. Since Farm-to-School Yolo is not responsible for day-to-day administration of direct services to students, its organization, sourcing, costs, funding, and participation efforts must support broader program infrastructure that benefit all school districts within the county as equally as possible, compared to other farm-to-school programs that operate more insularly. In the following section, I will conclude by highlighting how Farm-to-School Yolo is strategically utilizing the legitimacy it holds from operating at the county level to support measured systemic changes to bring all farm-to-school programs in Yolo County on par with one another, while providing future considerations for more equitable implementation.

Organization

Continue to foster individual programs evolving at their own pace. Farm-to-School Yolo originated in the county's governance structure to scale up disparate program efforts across the county. The Agriculture Department correctly recognizes that it does not have direct authority over local school program operations, and is not trying to assert its authority to control how individual school districts might choose to adopt farm-to-school programs. Instead, Farm-to-School Yolo benefits from its stature as an umbrella organization to facilitate lines of

communication between individual school districts and other stakeholders, ensuring that best practices are openly and efficiently shared in order to facilitate farm-to-school program growth. Each school district has a unique perspective from which others can learn – for example, Davis could help Washington develop its own relationships with local vendors to get more fresh fruits and vegetables into school cafeterias, and Washington could help Davis better target its farm-to-school efforts to students eligible for free or reduced-price lunch. Although it is difficult to neatly categorize how Farm-to-School Yolo is organized, with each school district responsible for running its own unique farm-to-school program with support provided by the Agriculture Department and Yolo Farm to Fork, this organizational structure makes sense given the unique origins of the county program.

Identify new community partners dedicated to their success, and lead coordination amongst diverse stakeholders. Agricultural Commissioner Young has encouraged Yolo Farm to Fork to assist school districts in developing their own farm-to-school programs similar to the model undertaken in Davis, but adopted in a way that works for their own school sites (Peterson, 2013). Despite its new countywide mission, however, it is important to remember that Yolo Farm-to-Fork is an organization that originated within the Davis community. Although it has re-branded itself, Yolo Farm to Fork must not simply just pay lip service to its new mission, but make a concerted effort fully execute its new priorities. The broader community setting in which it is now working may also prove to be challenging to for Yolo Farm to Fork, as the Davis community is uncharacteristically affluent compared to the rest of Yolo County and benefits from a uniquely active and progressive citizenry. Yolo Farm to Fork must make a concerted effort and explore different tactics to engage parents and other potential volunteers within individual school district communities who may not immediately see the value in farm-to-school program efforts.

It is also important to remember that the mission of Yolo Farm to Fork is to further all aspects of the farm-to-table movement, getting locally sourced fresh foods to all consumers, not just to students. Since Yolo County leads a number of other programs that relate to the burgeoning farm-to-table movement, such as its Agricultural Marketing Initiative, it is unclear how Yolo Farm to Fork – and similarly, the Agriculture Department – will balance these competing priorities amidst a finite pool of available funds and engaged personnel. As Farm-to-School Yolo continues to expand across the county, it will be important for the Agriculture Department to maintain strong relationships with internal school stakeholders and external community stakeholders in order to keep everyone invested in this specific program and manage limited resources.

Sourcing

Encourage systems that make local sourcing easy and adaptable for schools and farmers. Since Farm-to-School Yolo does not have direct oversight over how farm-to-school programs are implemented in individual school districts, the Agriculture Department correctly recognizes that it cannot simply set a local procurement mandate for each school district to achieve. Instead, an examination of baseline farm-to-school program efforts that existed in Yolo County prior to the launch of Farm-to-School Yolo revealed that garden and nutrition education programs were more widespread than programs getting locally sourced foods into school cafeterias – only Davis and Winters had cafeteria-based programs while education-based programs existed in all five school districts. Accordingly, Farm-to-School Yolo identified a gap in the way individual farm-to-school programs have emerged across the county thus far, and took strategic action to ensure all schools have access to locally sourced foods for incorporation onto their school menus. Harvest Hub Yolo and other new systems spearheaded by Farm-to-School Yolo give both schools and farmers the tools they need to increase local sourcing, while boosting

profit margins for small farmers and reducing delivery costs for schools. The framing of local sourcing as a supplement to existing sourcing and systems, instead of a new procurement expectation, was critical in generating buy-in from all stakeholders and allows school districts to work within their means towards a shared goal.

Balance new local sourcing opportunities with old constraints. It is important that Farm-to-School Yolo continue to market the Harvest Hub Yolo tool and host workshops to ensure it is as user-friendly as possible to maximize use on both sides. For example, the idea to allow schools to post bids for produce they need would help make the site more practical for food service directors, while highlighting an unmet market demand for suppliers. Farm-to-School Yolo must be willing to adapt to the needs of both school districts and farmers, especially those newly committed to local sourcing, and improve upon new sourcing tools to the extent that they effective. At the same, Farm-to-School Yolo must also be mindful of how larger scale adoption of local sourcing may lead to complications with existing procurement systems. For example, as Davis Farm-to-School further committed to local sourcing and increased its volume of locally-procured foods, existing district rules required the program to submit an official procurement bid to determine which vendors were most competitive, causing the district to switch to an unfamiliar vendor and a subsequent drop in local procurement rates. This experience underscores the value of flexibility in farm-to-school programs given fluctuations in market supply. Accordingly, Farm-to-School Yolo must continue to facilitate coordination between farmers and schools, but be careful not to get in the way of its own newly created efficiencies and systems.

Costs

Continue to assist school districts with program costs in any way feasible. Since Farm-to-School Yolo is a program based within the county and not a school district, it does not face typical farm-to-school program costs such as increased purchases of fruits and vegetables or

investments in kitchen equipment and training. Nonetheless, Farm-to-School Yolo appropriately recognizes that those are the major cost burdens for individual school district programs and has taken a balanced approach to providing financial assistance so schools can work towards overall program goals. Allocating each school district an equal subsidy to spearhead farm-to-school efforts, without prescribing how it should be used, takes into account that each site-based program has different needs. In addition to direct monetary assistance, shared programmatic infrastructure such as Harvest Hub Yolo and cooking classes provided by Farm-to-School Yolo offsets vendor and personnel costs that would otherwise accrue to school districts, allowing them to prioritize limited financial resources based on their respective needs. Partnering with school districts to help relieve the burden of farm-to-school program costs, however marginally, reaffirms their commitment to this proclaimed community effort.

Recognize that some school districts may eventually need more assistance than others. Despite the fact that some school districts require more start-up investment than others to run farm-to-school programs, Farm-to-School Yolo has distributed resources broadly on program infrastructure in a way that does not favor one district over another. While it is important at the outset to structure expenditures equally, so an atmosphere of trust emerges in lieu of competition, such a model may not be able to sustain long-term program growth given real disparities in resources available to communities across Yolo County. To the extent that disparities between different school district programs are exacerbated as Farm-to-School Yolo evolves over time, it may become appropriate for heavy initial investment in program infrastructure to give way to more targeted program needs.

Funding

Undertake more efforts to help individual school districts find program funding. Since Farm-to-School Yolo does not have direct control over individual school district programs,

it would not make sense for it to directly fund those programs either. However, it is appropriate for Farm-to-School Yolo to work towards identifying creative funding sources for individual school district programs, leveraging non-fiscal county resources to maximize program visibility and build support. Although Farm-to-School Yolo has secured a grant to help allay initial program costs, the entirety of the grant has already been earmarked to achieve specific objectives approved by CDFA, and it is not clear how the program will be sustained once that three-year funding source expires. Farm-to-School Yolo must work to secure other financial resources and ensure that the efforts it has begun in individual school districts can continue uninterrupted.

Additionally, it is important to note that even if Farm-to-School Yolo did receive county revenues or somehow tapped into unlimited grant funds, these revenues would not necessarily trickle down to individual school districts' farm-to-school programs since they are two separate governance entities. Even if Farm-to-School Yolo identifies its own long-term funding source that will in turn continue to provide programmatic support that helps individual school districts boost their own farm-to-school program revenues, it must do more to ensure that each school district can raise the money it needs to run its own successful operation on its own terms.

The experience of other farm-to-school programs reveals that funding from dedicated ongoing sources is easier to secure once programs are already established and can demonstrate that they are worth the investment, so it is critical that Farm-to-School Yolo has early program successes on which to stand. More dedicated funding for Farm-to-School Yolo, in turn, will result in stronger program infrastructure on which individual school district programs can stand to tout program successes, resulting in more funding for them as well. Accordingly, it is important that Farm-to-School Yolo builds upon early successes to justify increased financial support.

Distinguish Farm-to-School Yolo as a program that meets a need not addressed by existing farm-to-school programs so it can tap into more diverse funding streams. The

eventual reliance of farm-to-school programs on community fundraising poses a unique challenge for Farm-to-School Yolo. As a whole, Yolo County has a higher concentration of low-income residents compared to other areas where farm-to-school programs have typically flourished. As an effort that originated at the county level, community members may believe that the program is being funded by the county level, or benefits from institutional support that negates any need for charitable support. The parallel existence of several successful district-based farm-to-school efforts, amongst a broader farm-to-table movement in Yolo County, makes it more difficult for Farm-to-School Yolo to justify how it is a unique program meeting an unfulfilled need in the community. The abundance of competing programs may also create an environment of fatigue towards such issues while draining the generosity of potential donors. Lastly, the fact that Farm-to-School Yolo is broad in scope may make it difficult for stakeholders to quantify the benefits of a program that is not immediately concentrated in its backyard. At its core, however, Farm-to-School Yolo is an equalizer in the farm-to-school movement, and it must portray itself in such a manner – a countywide mission worth funding that supports populations who might not otherwise experience the benefits of eating fresh local foods. Farm-to-School Yolo must work on explaining to community partners why funding should reach all school sites equally.

Aside from its impact on community fundraising, the unique characteristics of Farm-to-School Yolo also make it unlikely that the community will vote to tax itself to provide long-term funding. Given all of these funding constraints, it is increasingly important that Farm-to-School Yolo explores other revenue streams, such as boosting revenues that stem directly from school meal sales, especially amongst students paying full price. Buying school lunch could not only be portrayed as a convenient way to eat healthy, but as a way to help one's own community as well. Although such revenue would stay at the local school district level and not make its way up to the

county level, it would free Farm-to-School Yolo to leverage its limited funds on targeted initiatives, such as building Harvest Hub Yolo, that are best executed at the macro level.

Participation

Ensure diverse stakeholders work collaboratively to maximize program participation and engage diverse student constituencies. As Farm-to-School Yolo strategizes how to maximize participation in farm-to-school programs, it is important to ensure that participation is achieved equally across all school districts and across all student population demographics. It is not enough for only certain subsets of students within Yolo County experience the benefits of locally sourced foods that can help students recognize important nutrition principles, and Farm-to-School Yolo must work to close these gaps. Involvement of the Agriculture Department creates the potential to leverage additional stakeholders outside of school districts to bolster the program. Farm-to-School Yolo has the opportunity to partner with other government departments, such as Parks or Waste Management to collaborate on educational initiatives that help students connect locally-sourced meals with gardening or composting efforts. Partnerships with private enterprises, such as grocery stores or restaurants can help reinforce the importance of eating locally outside in settings outside of school, helping to ingrain the practice in students' and families' everyday lives.

Expand upon current farm-to-school education efforts, incorporating more hands-on student activities both on and off campus. Farm-to-school program curriculum must be as interactive as possible, even highlighting the cooking and tasting of different foods and incorporating new sensory experiences for students such as farm visits and other community tours, in order to hold students' interests and reinforce key health and nutrition messages. Although Farm-to-School Yolo cannot mandate school districts to take on additional efforts, it could encourage systems that enable food tasting and preparation in a Harvest of the Month

classroom curriculum, so students have a stronger association between nutrition principles and the food they eat. Similar to what was done under Davis Farm-to-Schoo, taste tests could be encouraged in the cafeteria so students have the opportunity to try different preparations of the fruit or vegetable even if they weren't planning on purchasing a meal that day, as they might discover a new style of food that encourages future participation in the program. Students and parents could also be invited to taste test new recipes prior to their introduction into the school meal rotation and offer feedback about their likes and dislikes, so they develop a vested interest in the program.

It is also possible to better tie in the Harvest of the Month program with existing school garden efforts. For example, the featured produce could be grown in the gardens for students to harvest at the appropriate time and either sell or bring home to enjoy, further reinforcing the full farm-to-school cycle. It is also important that students are able to partake in farmers market or farm visits, especially Harvest of the Month source Capay Organic, so that they are able to visualize where the specific fruits and vegetables they eat originate and feel a connection when the see a local farm branded on school menus.

Altogether, implementing these types of marketing efforts would help students stay engaged in farm-to-school programs and sustain overall participation rates. It may also be necessary to assess the impact of external program factors such as the prevalence of la carte food options and off-campus lunch policies, or the ambiance and length of the lunch period, as these factors can also influence school meal participation rates for better or worse. Any initial program successes cannot be taken for granted, and Farm-to-School Yolo must constantly work with school districts to maintain and grow their efforts in order to realize long-term impacts.

Summary

Farm-to-School Yolo has taken strategic strides to build up individual school district farm-to-school programs in order to implement its countywide vision. Farm-to-School Yolo has masterfully spearheaded programmatic infrastructure initiatives for which there is broad consensus and mutual benefit, such as consolidation of the effort under the Yolo Farm to Fork organization, creation of Harvest Hub Yolo and Harvest of the Month, and application of its CDFA grant, engendering goodwill amongst all stakeholders. As program expansion continues, however, Farm-to-School Yolo must leverage its early successes to generate additional support for potentially divisive goals. In order to truly grow the program, Farm-to-School Yolo must assess the needs of individual school district participants, measure the bandwidth of financial and volunteer support available from the community, provide funding and programmatic support where it is most needed, and balance countywide goals against competing local pressures to ultimately ensure that all students have access to fresh locally sourced foods and the chance to develop lifelong healthy habits.

Limitations of Research

Since Yolo County and school district officials were not able to directly assist with this research, much of the analysis is based upon information drawn from the county website, school district websites, and other external sources such as grant applications and news articles. These public sources are intended to present the county and program in a positive light, so are not likely to reveal any internal complications that all programs must eventually confront. Accordingly, this research hypothesizes likely problems and solutions Farm-to-School Yolo might face based upon related academic literature and practical case studies, although farm-to-school research itself is still an emerging field. The addition of firsthand testimony from program stakeholders would have contributed a valuable dimension to this research. However, the extent to which this

research misinterprets Farm-to-School Yolo program implementation suggests that the program's publicly stated milestones do not match its actual internal development, a disconnect that should be made more clear in order to increase program transparency. It is important for Farm-to-School Yolo to continually reassess its goals and outcomes as the program evolves to ensure that it is achieving what is truly intended.

Policy Implications

Farm-to-School Yolo has established key partnerships with experienced farm-to-school program stakeholders. As program complications arise, it will be important for these stakeholders to continually assess what they could be doing better, but it is also important for them to recognize that the existing policy environment in which they are working is bound by constraints – external policy changes may be needed in order for desired program outcomes to be fully realized. The fact that Farm-to-School Yolo is ultimately governed by the Agricultural Commissioner and County Board of Supervisors means that it may be able to set regional executive polices or ordinances that make it more feasible to run this type of program. For example, additional incentives could be given to farmers that sell locally-sourced produce to schools. Although neither the Agricultural Commissioner nor the County Board of Supervisors has authority over the individual school districts, they can work with the County Board of Education to identify district policies, such as those related to competitive bidding, which may need to be modified in order for farm-to-school programs to thrive.

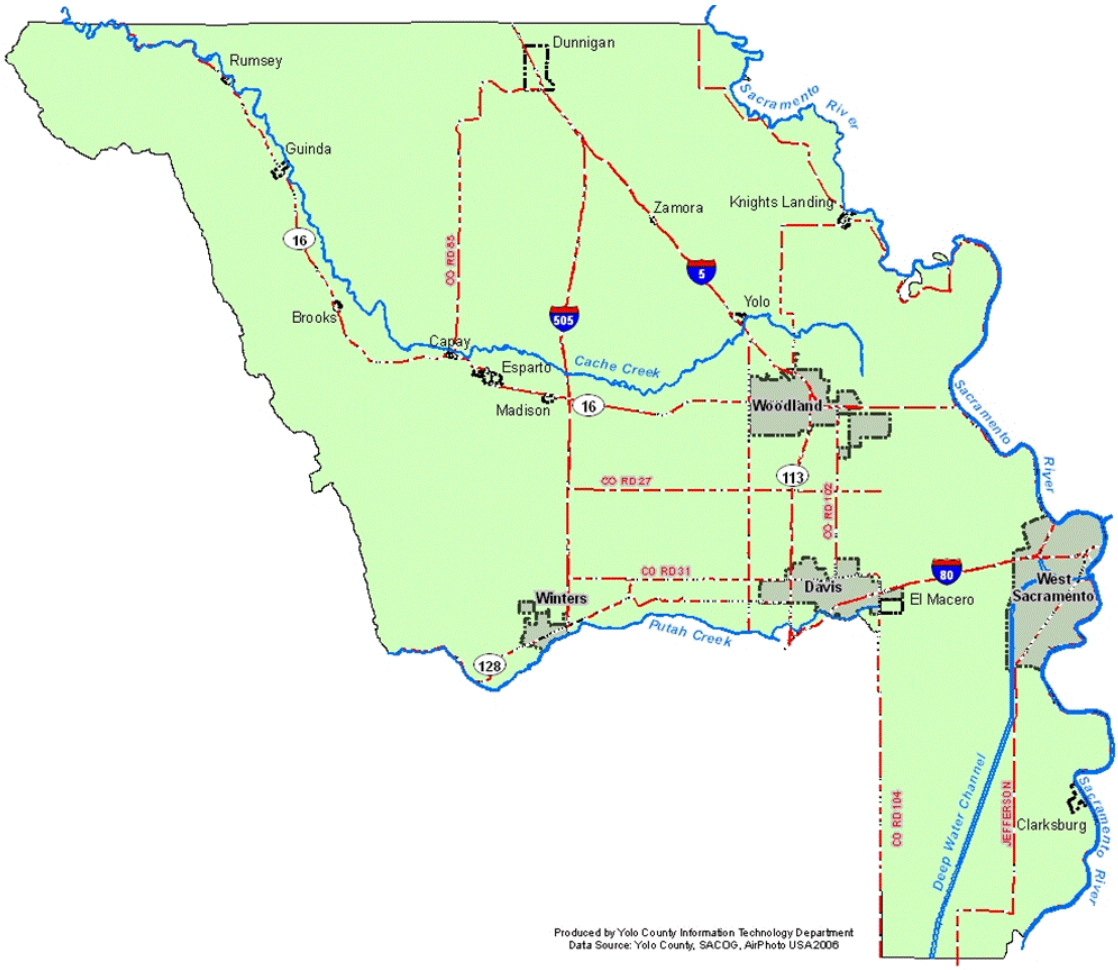
In 2014, California joined 26 other states to establish a statewide farm-to-school initiative to provide coordination and support to local programs (National Farm to School Network, 2015). While existing California law generally allows school districts to set their own policies when purchasing perishable and seasonable foods for meal programs (Cal. Education Code, §38083), other statewide changes may still be needed to facilitate farm-to-school programs. For example,

nine other states recognize the specific funding constraints associated with farm-to-school programs and allow schools to receive additional reimbursement money for serving local food in meals, and 15 other states have directed state agencies to establish databases connecting schools and farmers who wish to participate in farm-to-school program efforts (National Farm to School Network, 2015). Farm-to-School Yolo can work with its state representatives and lobby the legislature to enact similar policies to further bolster its own efforts.

Final Considerations for Farm-to-School Yolo

Since Farm-to-School Yolo originated as a government effort from the top down, rather than a community effort from the ground up, there may be high expectations regarding what can be achieved. And while many of the stakeholders involved in Farm-to-School Yolo also played a role in establishing the successful Davis Farm-to-School program, it is important to keep in mind that the Davis program has been in operation for over 15 years, experienced its own growing pains, and serves a distinctly active community, so it should not be expected that Farm-to-School Yolo immediately flourish overnight. Like any other new venture, it will take time for Farm-to-School Yolo to take root across individual school districts and the Head Start Preschool Program, especially given the unique set of constraints it faces as an innovative county-level program with no clear program models executed by fellow counties that can help chart its path. As such, Farm-to-School Yolo's focus on opening lines of communication between school districts and other stakeholders and building shared programmatic infrastructure appropriately leverages the influence of the county and is the right first step for program expansion in Yolo County, and in any other county that seeks to follow its lead.

Appendix A: Map of Yolo County



Source: County of Yolo, 2006

The five school districts in Yolo County are:

- Davis Joint Unified School District (based in Davis)
- Esparto Unified School District (based in Esparto)
- Washington Unified School District (based in West Sacramento)
- Winters Joint Unified School District (based in Winters)
- Woodland Joint Unified School District (based in Woodland)

Appendix B: DJUSD and Davis Farm-to-School Memorandum of Understanding

Approved by:
Yolo Farm to Fork Board of Directors, August 26, 2013
DJUSD Board of Education, September 5, 2013

Davis Joint Unified School District and Davis Farm to School
Memorandum of Understanding

The Davis Joint Unified School District (DJUSD) and Davis Farm to School (DF2S), a project of Yolo Farm to Fork, enter into this Memorandum of Understanding (MOU) in order to further collaborative efforts to support the health and education of all DJUSD students, to teach students about where their food comes from and how it is grown, and to protect the natural environment. This agreement is subject to availability of appropriate DJUSD and DF2S resources and covers the five-year time period from 2013 through 2018. DJUSD and DF2S will report annually to the Board of Education and the community on progress towards these goals[1] and will strive to appropriately recognize the contributions of each party towards attaining these goals. **Our work together is guided by the following goals and implementation strategies:**

Goal #1: Promote farm fresh foods in schools

1.1 DJUSD and DF2S will work together to promote farm fresh foods in the school meal program, encourage students to increase consumption of fresh produce, and support Student Nutrition Services to increase purchases from area farmers, with the goal of at least 40%[2] of the total district produce purchased from local[3] growers by 2018.

Implementation Strategies:

1A. When requested, DF2S will provide guidance to farmers, distributors, and Student Nutrition Services in order to facilitate the availability of local produce for the school meal program.

1B. When requested, DF2S will collaborate with DJUSD Student Nutrition Services on the planning, publicity, and facilitation of the DJUSD Nutrition Advisory Committee.

1C. DF2S will recruit and train volunteers to offer seasonal tastings through the development of an agreed upon method such as "Harvest of the Month" and/or "Taste Testers."

1D. DF2S and Student Nutrition Services will work together to identify and promote voluntary professional development opportunities for Student Nutrition Services staff

[1] This MOU is supported by the following DJUSD Board of Education policies: Food and Nutrition Policy 10.7-1 (April 2004) and BP 3550 (May 2008), Student Wellness Policy (BP 5030), and Integrated Waste Management Policy (BP 3511).
[2] 40% was chosen as an attainable goal because it represents an approximately 10% increase from local produce purchases at the baseline school year of 2012-13.
[3] "Local" is defined by DJUSD and DF2S as a 300 mile radius from Davis, California, with preference for Yolo County.

Approved by:
Yolo Farm to Fork Board of Directors, August 26, 2013
DJUSD Board of Education, September 5, 2013

that builds on their knowledge of selecting, preparing and serving seasonal and local foods, such as cooking classes and local farm visits.

1E. DJUSD and DF2S will continue to collect data in mutually agreed upon formats and processes to monitor progress towards the above goals, evaluate impacts, and report annually to the community as part of the report on wellness policy compliance (see DJUSD Student Wellness Policy).

Goal #2: Reduce solid waste through a comprehensive waste management program

2.1. DJUSD and DF2S will work together to maintain and expand a comprehensive waste management program through DavisRISE (**R**ecycling **I**s **S**imply **E**lementary) and ALL (**A**ll **L**unch **L**eftovers) Compost programs integrated into district operations at all district sites (school sites, central kitchen, district offices).

Implementation Strategies:

2A. DJUSD will maintain a DavisRISE District Coordinator job description and DavisRISE site coordinators for each school as VSA stipend employees, paid for with the savings generated by waste reduction efforts.

2B. DJUSD will endeavor to integrate responsibilities for maintenance of the waste management program into job descriptions for Maintenance and Operations staff, as appropriate, and subject to necessary negotiations with certified or classified staff.

2C. DJUSD Student Nutrition Services, DavisRISE, and DF2S will work together to identify school meal products and packages that can be reused, recycled, or composted in order to minimize the solid waste generated by the school meal program, reduce solid waste disposal fees, and protect the environment.

2D. DJUSD and DF2S will work together to foster community partnerships that support the expansion and sustainability of the waste management programs, including partnering on grant proposals, as appropriate.

Goal #3: Provide school garden and farm-based education opportunities.

3.1. DJUSD and DF2S will work together to sustain existing school gardens at every school site to the extent resources are available.

3.2. DJUSD and DF2S will work together to offer an educational farm field trip for every second grade student in the district.

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Implementation Strategies:

3A. DJUSD will work with DF2S and school site principals to designate areas at all school sites for school gardens.

3B. DF2S will offer competitive matching grant opportunities for school gardens.

3C. DF2S will provide regular meetings for school site Farm to School teams, including school garden coordinators, DavisRISE coordinators, and DJUSD teachers, staff and parent volunteers. Meetings will include voluntary professional development opportunities that support using the campus environment (school gardens, waste management programs, and school cafeterias) as venues for teaching core academic standards, subject to the oversight and approval of the Director of Curriculum or similar position.

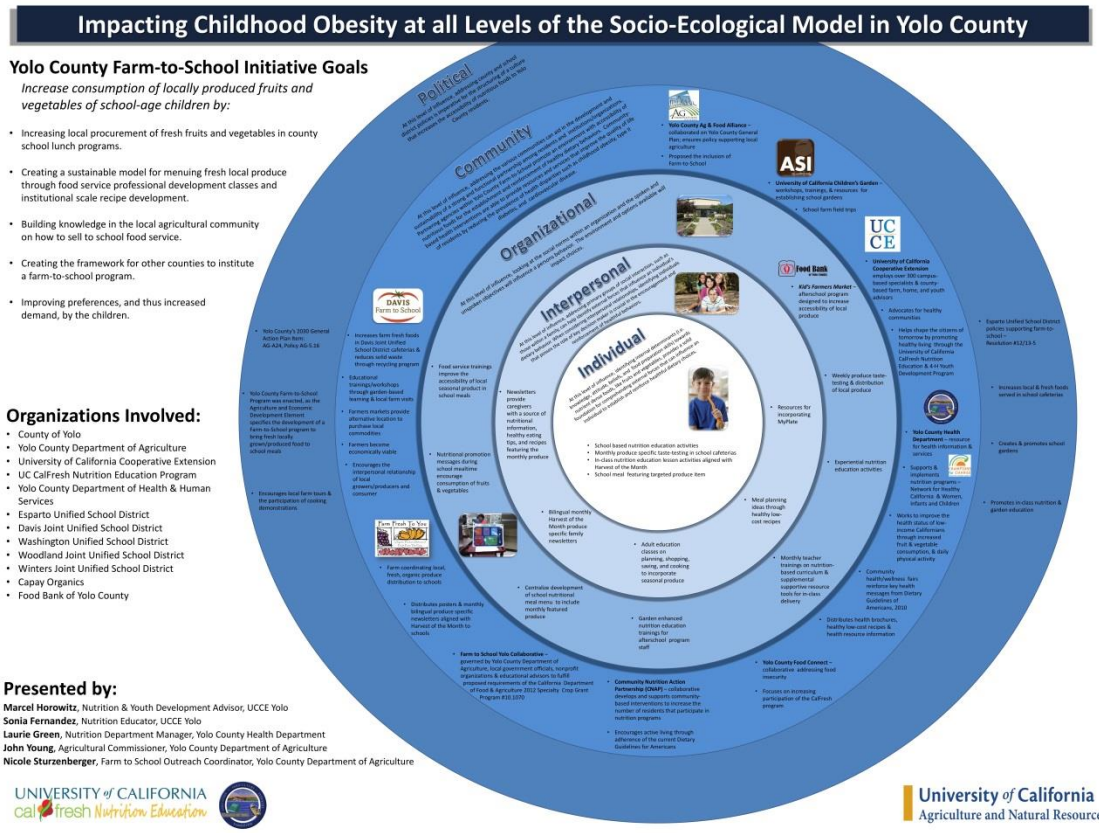
3D. DJUSD Maintenance and Operations and DF2S will conduct "walkabouts" every other (odd numbered) year to ensure strong communication between school sites, Garden and DavisRISE Coordinators, DJUSD Maintenance & Operations, and Davis Farm to School.

3E. Garden and DavisRISE coordinators will be encouraged to utilize the Garden and Recycle Progress Form to maintain clear communication with DJUSD Maintenance & Operations about changes to school garden sites.

3F. When planting new fruit trees, Garden Coordinators will be encouraged to follow the Fruit Tree Agreement and list of approved fruit trees.

Source: Yolo Farm to Fork and DJUSD, 2013

Appendix C: Yolo County Farm-to-School Initiative Goals



Source: Horwitz et al., n.d.

Appendix D: Harvest of the Month, Sample Fact Sheet

Harvest of the Month

Network for a Healthy California

The *Harvest of the Month* featured vegetable is **peppers**

Health and Learning Success Go Hand-in-Hand

Eating fruits and vegetables and being physically active are simple ways to make your family healthier. Healthy habits can help students concentrate and do better in school. Use *Harvest of the Month* to learn how to eat more fruits and vegetables and be more active.

California Department of Public Health program, Harvest of the Month, to Yolo County schools. The program provides fresh produce from the farm for school lunches and nutrition fact sheets for elementary school children and county Head Start centers. The Yolo Harvest of the Month team hopes to get kids really excited about local, seasonal produce! It tastes great, and it will model healthy eating habits that will last a lifetime.

Healthy Serving Ideas

- Slice raw sweet peppers and serve with lowfat dip for a snack.
- Top homemade pizza with sliced bell peppers—red, green, and yellow. Or, use chili peppers for a spicy kick!
- Use chopped hot peppers to make spicy salsa. (Hint: For less spice, remove seeds and inner membranes.)
- Add chopped sweet peppers to salads or stir into soups and pasta sauces.
- Try a new pepper variety each week.

VEGETABLE QUESADILLAS

Makes 4 servings. *1 quesadilla each.*
Cook time: 15 minutes

Ingredients:

nonstick cooking spray
½ cup chopped green bell pepper
½ cup frozen corn, thawed
½ cup sliced green onion
½ cup chopped tomato
2 tablespoons chopped cilantro
4 (6-inch) flour tortillas
½ cup shredded lowfat cheese

1. Coat medium skillet with nonstick cooking spray. Sauté bell pepper and corn over medium heat until softened, about 5 minutes.
2. Add green onion and tomato. Cook until heated, then stir in cilantro.
3. Heat tortillas in a separate skillet over high heat. Place equal amounts of cheese and sautéed vegetables on each tortilla. Fold in half and continue to cook until cheese is melted. Serve hot.

Nutrition information per serving:
Calories 134, Carbohydrate 20 g, Dietary Fiber 2 g, Protein 7 g, Total Fat 3 g, Saturated Fat 1 g, Trans Fat 0 g, Cholesterol 3 mg, Sodium 302 mg

Adapted from: *Healthy Latino Recipes Made With Love, Network for a Healthy California*, 2008.

For more recipes, visit:
www.cachampionsforchange.net

Let's Get Physical!

- **At home:** Do sit-ups and push-ups during TV commercials.
- **At work:** Go for a one-mile walk (about 25 minutes) during lunch.
- **With the family:** Visit a local or state park and go for a hike.

To find a park in your area, visit:
www.parks.ca.gov

Nutrition Facts

Serving Size: ½ cup chopped sweet green pepper (74g)

Calories 15	Calories from Fat 1
	% Daily Value
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 2mg	0%
Total Carbohydrate 3g	1%
Dietary Fiber 1g	5%
Sugars 2g	
Protein 1g	
Vitamin A 5%	Calcium 1%
Vitamin C 99%	Iron 1%

Produce Tips

- Look for firm peppers that have thick, shiny, smooth skin and green stems.
- Choose sweet peppers with a solid color—green, yellow-orange, or red.
- Choose hot (or "chili") peppers with a solid color—red, yellow, orange, green, purple, or brown.
- Store whole peppers in a sealed plastic bag in the refrigerator for up to one week. Wrap cut peppers in plastic and store in refrigerator for up to three days.
- **Helpful Hint:** Use rubber gloves when handling hot peppers. Be careful to never touch or rub your eyes.

What's in Season?

California grown peppers are in peak season in summer. They are usually available from May through November. California grown varieties may be fresher and cost less than varieties shipped from other states or countries.

Try these other good sources of vitamin B_6: avocados, bananas, and potatoes.

Farm Fresh To You

CAPAY ORGANIC

CHAMPIONS for CHANGE

Source: Harvest Hub Yolo, 2013c

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