



University of California
Agriculture and Natural Resources



Evaluation Findings

Riverside Unified School District Food Distribution Hub



Ron Storchlic, MS¹
Kenneth Hecht, JD¹
Gail Feenstra, MS, MEd, EdD²
Lorrene Ritchie, RD, PhD¹

¹Nutrition Policy Institute
University of California
Division of Agriculture and Natural Resources

²Sustainable Research and Education Program
University of California, Davis

October 2019

This publication was supported by the U.S. Department of Agriculture's (USDA) Agricultural Marketing Service through Grant 16-SCBGP-CA-0035. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the USDA. We would like to thank the Riverside Unified School District Nutrition Services Department and Riverside University Health Services for assistance preparing and reviewing this report. We are also very grateful to all the individuals that generously gave of their time to share their experiences with and perceptions of the Riverside Unified School District's Food Distribution Hub.

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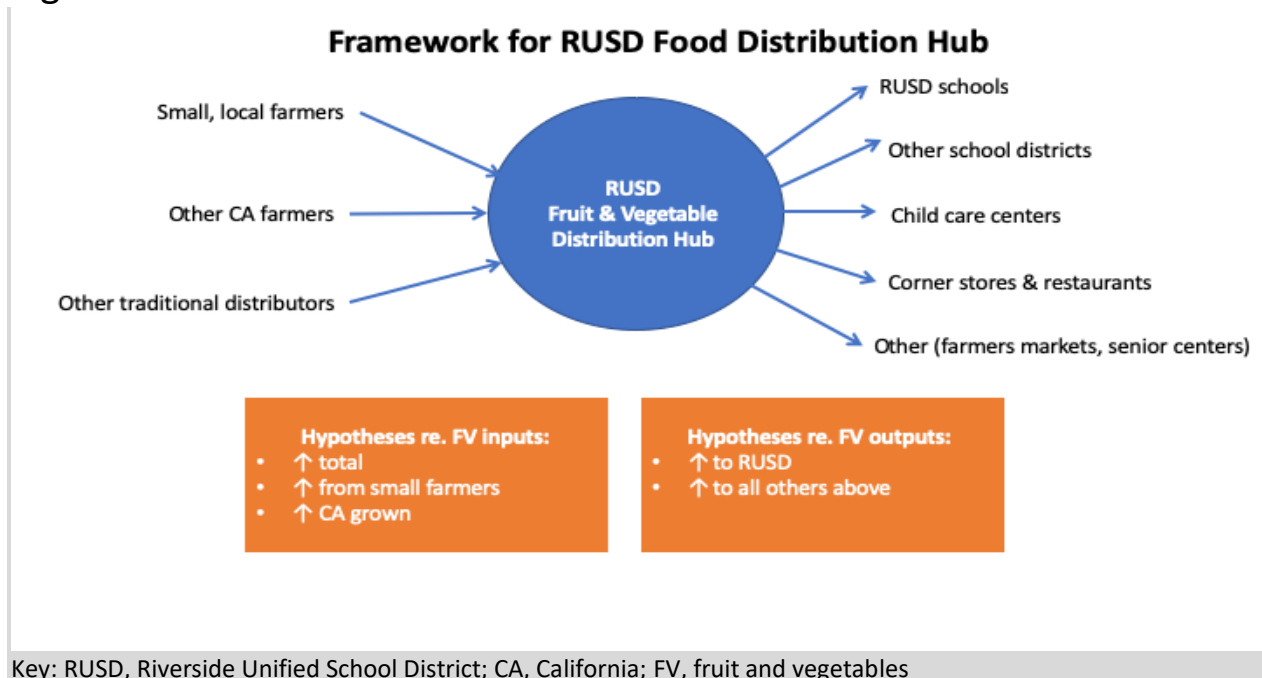
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BACKGROUND

The Riverside Unified School District (RUSD) has had a long-standing Farm-to-School program that has supplied the district's 48 schools and 42,000 students with fresh produce from local growers and a food distribution hub sourcing from local growers. Seeing a need to increase access to fresh, locally grown produce to entities such as corner grocery stores, childcare centers and small school districts, which have limited capacity to purchase directly from local growers, RUSD obtained funding from the California Department of Food and Agriculture (CDFA) Specialty Crop Block Grant (SCBG) program¹ to launch a food distribution hub run by the school district. Funding began in October 2016, however implementation was delayed until mid-2017 due to delays in renovating the RUSD Nutrition Service central kitchen and storage facilities.

The purpose of establishing a food distribution hub was two-fold: (a) to provide an alternative market offering fair prices for small and medium-sized growers in Riverside County; and (b) to provide smaller institutions in Riverside County, including small school districts, corner stores, childcare centers, small hospitals, restaurants and mini-farmers' markets, with access to fresh, locally grown produce to which they might otherwise not have access (Figure 1). The long-term expected outcome of the food distribution hub is to increase access to and intake of fresh, California-grown fruit and vegetables by children and families in the Riverside area.

Figure 1: Framework for the RUSD Food Distribution Hub



¹ This publication was supported by the U.S. Department of Agriculture's (USDA) Agricultural Marketing Service through Grant 16-SCBGP-CA-0035. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the USDA.

This report presents findings from an evaluation of the initial start-up phase of the hub. We highlight successes, challenges, and lessons learned to inform future replications of this model.

Rationale for a Food Distribution Hub Operated by a School District

The United States Department of Agriculture (USDA) defines a food hub as “a business or organization that actively manages the aggregation, distribution, and marketing of source-identified food products primarily from local and regional producers to strengthen their ability to satisfy wholesale, retail, and institutional demand” (Barham et al., 2012).

RUSD’s original vision for the food distribution hub was to provide small institutions, such as corner stores and childcare centers – particularly those in underserved neighborhoods along RUSD’s existing delivery routes – with access to fresh, locally grown produce. An additional objective was to provide fresh, locally grown produce to smaller school districts in Riverside County with limited capacity to source directly from local growers.



Given RUSD’s experience operating what was already effectively a food distribution hub – purchasing fresh produce from local growers with whom it had established relationships and distributing that produce to schools within the district – RUSD believed it had the capacity to scale up its operations and serve additional customers within both the RUSD catchment area and further afield.

The RUSD Nutrition Services Department already has access to infrastructure, equipment and support, including regular and cold storage, loading docks, vehicles, gasoline, utilities, and administrative support, including accounts payable and communications. Therefore, an additional perceived advantage was that costs for expanding RUSD’s existing efforts to distribute local produce to other institutions would be low, since all infrastructure would be provided at no cost to the hub and the food hub coordinator and driver salaries were grant-funded.

Intervention

This effort was funded by a \$450,000 grant over 2.8 years (October 2016 – July 2019). Due to renovation delays and limited access to RUSD Nutrition Services Department facilities at the

outset of the grant, operations did not begin in full until May 2017. Findings from this evaluation are therefore based on two years of operation.

Project partners included the RUSD Nutrition Services Department, the Riverside University Health System (RUHS) and the Nutrition Policy Institute (NPI) at the University of California, Division of Agriculture and Natural Resources.

The RUSD Nutrition Services Department was responsible for all aspects of operating the food distribution hub, including recruiting growers and customers, purchasing fresh fruits and vegetables from local growers and a produce distributor, delivering produce and providing kitchen staff with education regarding storage, handling and preparation of fresh produce.

The Riverside University Health System, in collaboration with RUSD Nutrition Services, was responsible for providing nutrition education to students and other community members in Riverside and nearby communities and assisting with the recruitment and education of new food hub customers, including corner stores.

The Nutrition Policy Institute was responsible for evaluating aspects of this effort related to the development and implementation of the food hub. Student outcomes were evaluated by the Riverside Unified School District and the Riverside University Health System and are presented in a separate report to CDFA.

METHODS

Evaluation methods included the following:

Key Informant Interviews

Semi-structured key informant interviews were conducted with a range of stakeholders, including those listed below. The purpose of these interviews was to assess customer and other stakeholder perceptions of the food hub, including areas of satisfaction and recommendations for improvements to the food hub operations.

- Food service staff at two small school districts purchasing from the food hub.
- The cafeteria manager at a high school in a small school district purchasing from the food hub.
- The food service director at a small hospital purchasing from the food hub.
- Directors of two childcare centers purchasing from the food hub.
- Managers of two restaurants purchasing from the food hub.
- Growers at two farms selling to the food distribution hub.
- Other stakeholders, including the manager of a different food hub in Riverside County and a food business finance consultant with expertise in food hubs.

Administrative Data Analysis

Administrative data, including produce purchases and sales were analyzed to assess outcomes and patterns.

Corner Store Data

The evaluation design included baseline and follow-up data collection, including a survey of corner store customers, key informant interviews with corner store staff and observations of the fruit and vegetable environment at participating corner stores, to assess changes associated with purchasing fresh produce from the food hub. Baseline data were gathered, however no follow up data were collected, since hub efforts to sell to corner stores were not successful. However, the evaluation findings include lessons learned associated with that effort.



Market Assessment

A market assessment was conducted with institutional customers in Riverside County and neighboring San Bernardino County not currently purchasing from the RUSD food hub. Structured interviews were conducted with 15 food service managers at institutions including school districts (6), colleges and universities (6), childcare centers (2) and a community health center (1). The interviews assessed interest in purchasing local produce; main considerations in terms of purchasing from a food hub and factors affecting their ability to do so (i.e., availability of salad bars, ability to conduct scratch cooking, bidding and contracting requirements, food safety and certification requirements); and perceived challenges to purchasing from a food hub. Findings from the market assessment are presented as a separate appendix.

KEY FINDINGS

Proposed and Actual Outcomes

RUSD proposed a number of outcomes to enhance the competitiveness of California-grown specialty crops through increased sales, consumption, access and awareness (see Table 1 for proposed and actual outcomes). The following are the key accomplishments associated with the first two years of this effort:

- The RUSD food hub distributed \$2.9 million of California-grown specialty crops during the period July 2017-June 2019. Of that amount, \$308,000 was purchased from 12 local growers in Riverside County and \$2.6 million was purchased from distributors.
- California-grown produce was distributed to a range of other institutional customers in Riverside County including:
 - \$202,627 distributed to 2 smaller school districts in Riverside County, representing 15,000 students in 20 schools
 - \$122,915 distributed to 28 childcare centers serving approximately 2,500 children
 - \$44,546 distributed to 4 restaurants
 - \$3,691 distributed to a small (80-bed) hospital
- The food hub has also sold locally grown produce at two produce stands located in low-income neighborhoods of Riverside on 162 separate occasions.
- Children in schools and childcare centers have enjoyed access to 28 varieties of fresh California-grown specialty crops, including persimmons, kiwi, cara cara oranges, tangerines, apples, peaches, pears, raspberries, strawberries, blackberries, navel oranges, yams, carrots, cherry tomatoes, plums, nectarines, grapes, blueberries, broccoli, cauliflower, cabbage, celery, peppers, cucumbers, watermelon, cantaloupe, and honeydew.
- Food hub and Riverside University Health System staff trained 13 childcare centers' kitchen staff regarding food safety, storage, and the preparation of fresh fruits and vegetables.
- Several childcare centers have revamped their menus, removing canned fruits and vegetables and replacing them with fresh produce.
- The food hub coordinator, himself a small farmer, has presented on "a day in the life of a farmer" at assemblies at five elementary schools in Riverside County.
- Through a collaboration with the Riverside University Health System, over 21,000 students received nutrition education, including knowledge about the importance of fruits and vegetables as part of a healthy diet. Additionally, 6,000 WIC participants received information about local and seasonal produce and the benefits of eating locally grown produce.

Table 1: Proposed and Actual Outcomes

Indicator	Proposed outcome	Actual outcome	Status
Number of growers selling to the food hub	Increase purchases from 12 to 20 local growers	Purchases from 12 local growers	Not met
Specialty crop purchases	Specialty crop purchases increase from \$860,000 to \$1.15 million	Specialty crop purchases increased to \$1.6 million annually	Exceeded
Specialty crop purchases from local growers	The hub will distribute 70,000 pounds of produce from local growers yearly	Approximately 268,000 pounds of produce was purchased from local growers over two years	Exceeded
Grower revenue	20 specialty crop growers have increased revenue expressed in dollars	\$25,000 average purchase from local growers	NA (no target set)
Sales of imperfect produce	20,000 pounds yearly of cosmetically imperfect produce purchased	216,000 pounds yearly of cosmetically imperfect produce purchased	Exceeded
Number of school districts	3 new school districts will purchase from the hub	2 new school districts	Partially met
Number of schools	13 new schools will purchase from the hub	20 new schools	Exceeded
Specialty crop offerings at schools	Minimum 20 new specialty crops will be introduced to students	28 new specialty crops introduced to childcare centers or schools	Exceeded
Childcare centers	20 new childcare centers will purchase from the hub	4 new childcare centers (in addition to 24 RUSD childcare centers)	Not met
Number of children in childcare centers	3,000 children in 20 new childcare centers	2,500 children in 28 childcare centers	Partially Met
Number of restaurants purchasing from the hub	4 restaurants	5 restaurants	Exceeded
Number of mini farmers' markets hub produce sold at	6 mini-farmers' markets	Local produce sold at 2 produce stands on 162 separate occasions	Partially met
Number of corner stores purchasing from the hub	6 corner stores	0 corner stores	Not met

Successes, Challenges and Lessons Learned

There have been a number of lessons learned associated with initial phase of the RUSD food hub, in areas including supply, demand, sustainability and replicability. What follows is a description of what was learned from data collected by the food hub, interviews with key informants and a survey of food service staff at 15 local institutions not currently purchasing from the hub.

Demand

School Districts

The RUSD food hub has distributed over \$200,000 of California-grown produce to two small school districts in Riverside County. The hub sees its role as supplementing the produce that schools purchase from distributors with fresh, locally grown products, but is not interested in replacing the schools' existing distributors entirely, as it does not have the capacity for that.

The hub has developed a very successful relationship with one of those districts, which has purchased nearly 25% of its produce from the hub for the past two years. That school district has been happy with key aspects of the food hub, including pricing, produce quality and customer services. They were too small to purchase from the distributor that supplies RUSD and had therefore been working with a smaller distributor that they were not very happy with.



Food service staff in the smaller school district noted they were happy to work with the food hub, since they had been exploring options for purchasing directly from growers, which seemed overly complicated.

“It was a really good thing for us because we...went and met with a couple of farmers. It seemed like it was going to be a lot of footwork because they wanted to know what kinds of produce we were

interested in, how much we were looking for, and then we would have had to look at doing contracts with them and different things. Then, getting it to and from, deliveries...This is so much easier. So much easier. This is wonderful.”

They also appreciated the increased variety of products available from the hub:

They have a lot of variety. They've got things that we've never served before. Sweet limes, gooseberries... And they also send literature on those that we can send out like, 'Here's some interesting facts about kumquats.' I think it was a package kind of thing that made it much simpler.

A cafeteria manager also appreciated being able to offer students increased variety of fruits and vegetables since purchasing from the hub:

“We never did cara cara oranges or the Persian cucumbers. We did yam sticks, we did persimmons.... A lot of these kids never knew what any of that was. Even some of my staff didn't know what it was.... Our kids love persimmons. They go, 'I want some more of those little pumpkins.’

She went on to explain that is able to get tangerines from the hub, but not their regular distributor, who only carries “cuties.”

I'm like, 'How is it that you only carry cuties but I know tangerines are available?' [The RUSD food hub] is the only place I can get a tangerine. There's a lot of things that we can get from [the hub] that we won't see at a regular produce company.... This gives us more variety and options.

The cafeteria manager also noted that produce from the hub is better tasting:

You can taste the difference. Like...on grapes, you can taste the chemical, versus when I get it from the hub, it doesn't taste as chemical....I've also noticed that the strawberries come riper and have more flavor from the hub than the ones that I get from [distributor]. The ones from [distributor] are a lighter white color, partially on the top where the green stem is, and the ones I get from hub are nice and ripe and red.

The school district has been so satisfied with purchasing from the hub that they have referred other nearby institutions to them as well. “We talked to [another school district] about it, so then they got involved. We talked to the hospital about it and they got involved. We've been a big advocate for this.”



Kitchen staff at both school districts have been willing to process whole produce for meals as well as the salad bar. As the cafeteria manager noted, staff are “okay with prepping and cutting it. They kind of like it because I show them things that they normally wouldn't see. A lot of them never knew what a Brussels sprout was...or butternut squash.” Staff at another cafeteria also reported that children prefer fresh produce from the hub to items from their other distributor, which are bagged and appear less fresh and may have unpleasant tastes or odors from chemicals designed to extend the shelf life of products.

In January 2019 a second school district began purchasing a number of items from RUSD that it was unable to get from the regular distributor or growers it has been buying directly from. They expressed satisfaction with the food hub in areas

including price, customer service and flexibility. They noted that their preference would be to continue purchasing from their regular suppliers but would likely continue to purchase from the hub if certain items are not available.

Customers expressed some concerns, including occasionally receiving poor quality produce, for which they noted being immediately credited, and inability to cancel an order.

RUSD is interested in selling to more school districts and has been actively pursuing those relationships. Challenges include established relationships with distributors with which districts are happy, limited ability to engage in “scratch cooking” or process fresh produce for salad bars. Limited storage space is an issue at some sites which require daily deliveries, which is challenging for the hub.

Having a “champion” who is passionate about local food at Nutrition Services Departments is critical. The hub coordinator noted that when his regular contact at one site was on vacation, the school didn't order from the hub. “No one else is going to order because they don't have the same desire or passion.”

A more significant challenge is that some school districts would like the hub to submit a bid to either supply all produce and/or sell produce at a guaranteed price. The food hub does not currently have the capacity to supply all produce and sees its role as supplementing produce purchases with locally grown produce. The hub is also not interested in selling at the lowest price, which is often how such contracts are awarded, and is unwilling to guarantee a set price for produce, since it is unable to take a loss if produce prices go up.

The hub has received interest from school districts in Orange County, which it is currently evaluating, since the region is geographically close, but difficult to service due to heavy traffic.

Childcare Centers

The RUSD food hub has served approximately 2,500 children in 28 childcare centers in Riverside County. Interviews with staff at two childcare centers revealed very high levels of satisfaction with all aspects of the food hub and a desire to continue purchasing from them. Selling to

childcare centers can represent an important means of providing younger children – before they are school-age – with access to fresh, locally grown produce, since most childcare centers are too small to purchase directly from distributors, while purchasing from supermarkets or farmers' markets may be prohibitive in terms of cost or effort. As the director of a center explained,



“The product is excellent, with good excellent customer service, but it's mainly getting the local food. Like I said, it's impossible to get local food from the Coachella Valley or even local areas, without trying to vendor with somebody three, four hours away. It was impossible. We live in this beautiful Coachella Valley that's full of growers and beautiful food grown and I can't access it. That was a wall I couldn't knock down. I kept trying to go direct to the farmers out here and the only one I could get anywhere with was...an agency that would glean the fields. [The other farmers] ship everything out....That was the answer from anyone I talked to. It was, 'We ship it to LA where it's distributed.' Which is insane.”

Childcare representatives also commented on the better taste and higher quality of produce from the hub.

“We've been happy with the produce. [The children] eat up the strawberries like crazy. They're so good.... They're not that big double thing that tastes like sawdust. Because if you let something ripen naturally...that's when the flavor comes in. When you pick a peach two countries away and you have to pick it so hard and it has to ripen off the vine, it's not going to taste as good.... If you were there what would you eat?”

A director further noted that in addition to children,

“Teachers are very, very pleased with [produce from the hub]. I get a lot of feedback from them in staff meetings. They love the food, the quality of it. It's a huge difference from what you get from one of your big food distribution places than what you get from the food hub.”

Another childcare center representative expressed appreciation for the greater variety of produce available from the food hub and ability to expose children to that.

“We were limited [with respect to] a lot of different fruits and vegetables that we wanted to give to our students.... We wanted to try new and different things, especially for our kids to try and to have that kind of knowledge of nutrition and things like that, especially at an early age. When Riverside Unified came in, I mean, that was really eye-opening for us.”

Staff report that exposure to fresh and different fruits and vegetables has had positive impacts on children's diets. As the director explained,

“I don't think we've ever had cucumbers before, and they like cucumbers. Zucchini either. And peaches. They never had any of that, and they are starting to eat a lot more.... A couple of parents have said, ‘They've tried this. They've never had that before. They really like it. Now I'm going to get it for them.’ “

A childcare center reported switching entirely from canned produce to fresh, California-grown produce as a result of its relationship with the food hub. In addition to more varied and better tasting produce, access to fresh produce has allowed the center to involve children in preparing food, which can help contribute to a healthier diet. As a director explained, “the kids like to chop too. The strawberries are their favorite.” Switching from canned to fresh produce has also lowered costs for the center.

The amount of produce sold to childcare centers – and associated revenue from the markup on that produce – is relatively low, while the effort involved in delivering to the centers is comparable to larger customers. While delivering to childcare centers might have been a viable strategy during the hub's start-up phase, it remains to be determined if it is a viable long-term strategy, with the possible exception of childcare centers located en route to larger customers.

Health Care Providers

RUSD has sold \$3,691 of produce to a small, 80-bed hospital in Riverside County. The hospital cooks most of its meals from scratch and is part of the Healthier Hospitals Initiative,² with a goal of 10% of their food budget going toward produce. They are interested in purchasing more locally grown produce, which the hub allows them to do. As the food services director explained,

“I want to give my customers what they want and what they're asking for. They want to be healthier. They want to have more fresh food. They want to eat local. I want to provide that service to them.... We want to use as much local produce as we can use. That's always a goal, to try and use more local, more sustainable. That's where we're going. I thought that [the hub] was a really good opportunity. That was something that I wanted to do, but knowing I can't visit all these farms, I don't know how to find a farmer. The great thing about the program is that you have someone who has relationships with everybody for you. They're just like the connection.... I like that and I appreciate that.”

The food service director also noted that produce from the hub was of higher quality than what they get from their distributor.

“The oranges...were sweeter. They did taste better. The greens mix was good because it had so many different kinds of greens. It's better than a regular spring mix that you would get from [food service operator] or something like that. It was more earthy. I liked that a lot.”



Given patients' often compromised immune systems, the hospital can only purchase produce that has Good Agricultural Practices (GAP) food safety certification. Small and medium-sized growers, particularly those engaged in direct marketing, are less likely to have GAP certification, which can be difficult to obtain. None of the local growers selling to RUSD have GAP certification, such that all of the produce sold to the hospital was purchased from RUSD's distributor. RUSD has obtained USDA funding to help participating growers obtain GAP

certification, which will allow the hub to sell produce from local growers to health care providers such as hospitals and skilled nursing facilities. Funding from the same USDA grant will also serve to train new and beginning farmers in Riverside County, increasing the number of local growers from which the hub can purchase.

² The Healthier Hospitals Initiative (<http://healthierhospitals.org/>) works to provide over 1,300 hospitals of all sizes with the tools and resources to purchase and serve healthier foods, reduce energy and waste, and choose safer and less-toxic products.

Restaurants

The hub has sold \$44,546 of produce to four restaurants interested in supporting local farms and cooking with fresh, better-tasting local produce. Restaurants purchasing from the hub expressed a high degree of satisfaction with all aspects of the food hub. A local restaurateur explained that the hub makes it very easy for him to purchase locally grown products:

For us, we're a pretty high-volume operation, so to source locally is a bit of a headache. We don't necessarily have time to drive to farms and see what they have for the day, so having [the hub] to do a lot of that leg work has been great.... There's something very appealing about getting something that's basically a bike-ride away.

Restaurateurs commented on the superior quality of the produce. As one explained,

We're in the business of making food that tastes good.... The quality of food from local farms is so much higher than something you can get from someone that delivers from Mexico or Costa Rica.... As a customer, if the food's good you're more likely to come back. That's always been something we've tried to do, is find ways of making the food better, and this was a no-brainer in that regard.

That same individual went on to explain that, "We've had customers say these are the best tomatoes we've had.... They'll come up to the kitchen and say, 'Where did you get these? They taste good.' "

Most customers are supportive of local food and are therefore understanding when certain items are not available, which can be the case when sourcing locally.

I understand the seasonality of this. We convey that to our customers and that kind of lets everyone feel like they're all in this ride together. It's, "Oh, well, we don't have this tomato today, because the farm just didn't have a good crop this week." That lets everyone feel like, "This is our community and the Cherokee tomatoes aren't available this week."

While sales to restaurants have not necessarily contributed to the hub's mission of increasing access to fresh produce among underserved residents, restaurants represent an important source of revenue for the hub, along with increased sales for local growers. According to RUSD, a disadvantage of selling to restaurants is that some have not been timely with respect to payment, a challenge not typically associated with larger institutional customers.

Corner Stores

Part of RUSD's original vision for the food hub was to supply corner stores in underserved neighborhoods along existing delivery routes to RUSD schools with fresh, locally grown produce from small and medium farms. This seemed like a natural partnership, since RUHS had already



been working with several stores as part of the Healthy Corner Store Network. However, RUSD was unable to meet the objective of selling to corner stores, principally because the city of Riverside is located in close proximity to the Los Angeles Wholesale Produce Market, where corner stores can purchase produce at much lower prices than what RUSD, which purchases from local growers and a distributor, is able to offer. As the food hub manager explained, "When someone goes to downtown LA and sees strawberries for \$9 a flat and I charge them \$20, they prefer to go downtown." The RUSD Nutrition Services Assistant Director further explained that,

"The whole corner store thing was so ideal because our truck's delivering food to our kids passed by those stores every day. It wouldn't be an extra truck or an extra driver. They could just drop off on their way. It was so ideal, but it just didn't work. Lesson learned."

Supply

The hub has distributed \$308,000 of locally grown produce from the same 12 growers RUSD had previously been purchasing from via its Farm to School programming. While it has not been able to increase that number, purchases from local growers have increased by 71% from the first to the second year of the hub's operations, from \$114,000 to \$194,000. According to the food hub coordinator, reasons for limited participation of local growers in the food hub include the fact that many growers would like to receive payment upon delivery, which the school district is unable to do. Additionally, many small and medium growers sell at local farmers' markets, where they can command significantly higher prices for their products than what the

food hub can pay them and where growers, not an outside entity, are responsible for reporting revenue. RUSD staff believe that some immigrant farmers may be reluctant to provide forms such as W-9s, which are required for doing business with the hub, while others may be taking a “wait and see” approach, preferring not to sell to the food hub until they know whether it will be a stable, long-term buyer.



In addition to the relatively small number of growers that have agreed to sell to the food hub, a further challenge has been inconsistent supply of certain items. According to the food hub coordinator, many of the farmers the hub purchases from do not engage in succession planting (i.e., planting the same crop in a new field every few weeks) in order to ensure a continuous supply of produce over the growing season.

Finding a balance between supply and demand is one of the top challenges reported by food hubs (Colasanti et al., 2018). Given limited supply from local growers, the food hub has seen a need to supplement its offerings with California-grown produce purchased from the same produce distribution companies the RUSD Nutrition Services Department purchases from. Given the volume they source from the suppliers they are able to get produce at a lower cost, allowing them to offer competitive pricing. The hub has also asked its growers to match the distributor’s prices, which most have been able to do, offering the advantage of fresh, local products at prices comparable to a distributor.

As a result of the above challenges, after two years of operation, 10% of the produce distributed by the food hub was purchased directly from local growers, and 90% was sourced from distributors. The percent of produce distributed by the food hub that is purchased directly from local growers increased to 25% for sales to institutions other than RUSD.



Sourcing product from a distributor helps the hub achieve its objective of increasing access to fresh, California-grown fruit and vegetables among underserved populations. While that is not in keeping with a traditional food hub, which is to purchase directly from small, local growers, 39% of food hubs report sourcing some product from a distributor (Colasanti et al., 2018). Nonetheless, the food hub has been able to purchase over \$300,000 of produce directly from local growers between July 2017-June 2018, and sees this as a temporary measure that will allow it to attract and retain customers while gradually increasing the percentage of produce sourced directly from local growers.

At the same time, the hub coordinator believes that sourcing products that local growers cannot supply from distributors is beneficial to smaller institutions. As he explained,

You have an obligation to supply your customers' needs too, because if you tell them, 'I can only give you cucumbers two months a year,' they're going to stop buying from me. I struggled with that with bananas. I deliver bananas to childcare centers, but the whole point of me delivering to the childcare centers, is eliminated trips to Costco or Smart & Final, which is what they were doing. Am I really helping them if I'm providing everything else, but they still have to go to Costco and get bananas? I've come to terms with this as a part of the service I have to offer.

While this model is not currently a traditional food hub, in the sense that all produce is locally grown, it does enable small and mid-sized farmers to reach new markets while helping local institutions access locally grown produce.

Sustainability

The long-term sustainability of the RUSD food hub is dependent on sufficient supply of produce from local growers, sufficient demand on the part of local customers and the ability to generate sufficient revenue at a high enough markup to cover costs.

The food hub has experienced challenges regarding supply and demand, which is not surprising for a business in start-up mode. Nonetheless, purchases of local produce increased from \$114,000 to \$273,000 between the hub's first and second years of operations. The hub continues to actively seek new growers and customers, and has received a highly competitive USDA Farmers Market and Local Food Promotion Program grant, which will be used to train new farmers and help local growers obtain Good Agricultural Practices (GAP) certification,³ which will enable access to customers with more stringent food safety requirements such as health care providers. The hub has also received additional CDFA SCBG funding in order to continue this work and become more financially sustainable.

The hub has been seeking to cover costs via a markup on produce sold to institutions outside of RUSD. The original markup consisted of 25 cents per case of product sold. RUSD quickly realized



how low that markup was, both in relation to other produce distribution companies and in terms of the amount of revenue it could generate. The hub has therefore been steadily increasing its markup by 0.5% each month, with the ultimate goal of a 15-20% markup, which is in line with what other food hubs charge (Rysin & Dunning, 2016). It should be noted that while the food hub sells produce to the RUSD Nutrition Services Department, it does not charge a markup on that produce since it is part of the school district, and therefore only generates revenue from sales to non-RUSD customers.

The RUSD food hub is in a unique – and enviable – position from a financial sustainability standpoint. With the exception of salaries and benefits for the hub coordinator and a driver, the hub has no other expenses, since all other costs have been covered by RUSD. The district has also provided the hub with the capital for the purchase of produce, which was identified as a top challenge by 27% of food hubs (Colasanti et al., 2018) and has eliminated the need for a line of credit, which can be

³ According to the USDA Agricultural Marketing Service (AMS), “Good Agricultural Practices (GAP) and Good Handling Practices (GHP) are voluntary audits that verify that fruits and vegetables are produced, packed, handled, and stored as safely as possible to minimize risks of microbial food safety hazards” (<https://www.ams.usda.gov/services/auditing/gap-ghp>).

challenging for new businesses to obtain. The RUSD Nutrition Services Assistant Director explained that,

What makes our [food hub] have great potential to be sustainable [is] because we already have the infrastructure in place. We knew that we were already buying from these farmers. We knew how much our community and our students all benefited from it. We already knew that. We were willing to take that leap of faith because our farmers were already delivering to us, they might as well deliver more. Once they're delivering for our USD, they can deliver twice as much. It just works. It's almost seamless in that respect.

That was corroborated by the food hub coordinator, who explained that,

Half the battle is just having the coolers and the workspace and the [loading] docks and access to that. The big benefit with this is that you pay as you use. To the current model, we don't have to pay. We looked at what a truck would cost – it was about \$6,000 a month just for a truck rental. I need a truck two days a week only, that's it. That's an expensive asset that just sits there.

The RUSD Nutrition Services Department has estimated the value of goods and services provided to the hub at approximately \$50,000 per year, which represents a very small fraction (0.23%) of its total operating budget. The RUSD Nutrition Services Assistant Director sees supporting the hub as a low-cost way for the school district to contribute to the local community while garnering positive public relations. As she explained,

School districts and school boards like positive attention. If the food hub gives them positive attention, they will fully embrace it.... We want to help school districts that can't get what we have. Their kids deserve all the things that our kids get. We're all happy together doing this, and our board loves the positive attention. It's good PR. It's good for the community. We're keeping our local farmers in business, which is good for us. Our kids are eating healthy. I think everybody benefits.

RUSD plans to continue covering all hub costs except salaries for the foreseeable future. Pending no additional grant funding, the hub will need to sell approximately one million dollars of produce annually at a 20% markup as of October 2021. Nonetheless, the hub coordinator would like to see the hub become a financially and organizationally independent (nonprofit or for profit) entity. That is in part because RUSD salaries and benefits are significantly higher than other sectors, making financial sustainability more challenging. It is also possible that RUSD leadership may be less supportive of the food hub in the future, which could put continued operations in jeopardy.

Replicability

A key objective of this evaluation was to assess successes, challenges and lessons learned from this effort, in order to inform the replicability of this innovative model among other school districts. Advantages of adopting this model include the ability to contribute to local communities and garner positive attention for a relatively low cost.

Other large school districts may be similar to RUSD in that they are able to share access to food storage and delivery infrastructure with other entities. Many have established relationships with local growers, from whom they purchase via Farm to School programming. Further, most school districts are not located in close proximity to wholesale produce markets, increasing the viability of selling produce to small outlets such as corner stores. At the same time however, establishing a food distribution hub, particularly one distributing produce to other school districts and institutions, does not fall within a school district's mission. It requires a high degree of support and commitment on the part of both school administration and Nutrition Services staff, raising questions regarding the extent to which most school districts would be interested in embarking on such an endeavor.

A possible alternative to school districts establishing their own food distribution hubs could be an "incubator" model, with "joint use" agreements between the school district and an independently operated food hub that could use school district infrastructure at no or low cost for several years, until they are established enough to set out on their own. Many schools have participated in "joint use" agreements allowing the broader community to benefit from the use of facilities such as sport fields and gyms. This model represents an innovative example of a type of "joint use" of food storage and delivery infrastructure to benefit the broader community. Having access to free or low-cost facilities, with the option of paying for the use of those facilities on an as-needed basis could allow beginning food hubs to grow at a slower and more sustainable pace, resulting in greater long-term success. The concept of "joint use" of food storage facilities is not entirely new, as RUSD has rented cold storage space to outside entities in the past.

RUSD staff note that this approach is also in line with the "sharing economy," which has become increasingly popular in recent years. The Nutrition Services Assistant Director explained that this approach is like

Sandwich shops that are in industrial areas that are only open for lunch. They rent those kitchens out at night for people doing other types of food services.... The people who make [product] rented a restaurant space at night and started their business until they had enough money to buy their own space.

The RUSD Nutrition Services Assistant Director summed up her perception of this model's sustainability in the following way:

I believe that if you follow our model and you have your infrastructure in place like a school district or another facility like this, this would be sustainable. That's why ours is so awesome. I think if you don't have to worry about the infrastructure and you just have to worry about your labor, you can have awesome produce that you're paying a fair market value for, with a slight markup enough to cover the cost of your personnel. I think that would be sustainable.

Nonetheless, a critical element for the success of a food hub is a robust business plan (Feldstein & Barham, 2017; LeBlanc et al., 2014), which the RUSD food hub has not developed. RUSD's ability to successfully operate the hub may in part be due to the subsidies provided by the district, however, any school district considering this model should prioritize the development of a strong business plan.

Expansion Potential

In collaboration with the UC-Davis Sustainable Research and Education Program (SAREP), the evaluation included an assessment of the potential for the hub to expand to additional markets in the region. Those findings are presented in the Appendix.

CONCLUSIONS

Findings from this evaluation indicate that the RUSD food hub has achieved many, albeit not all of its objectives. It has sold \$2.9 million of California-grown produce, including \$308,000 of produce from 12 local growers, and has increased access to fresh, locally grown produce to a range of customers including small school districts, childcare centers, restaurants, a hospital, and produce stands serving low-income community members. Customers have for the most part expressed high levels of satisfaction with the hub, and plan to continue purchasing from them. Findings from the market assessment indicate relatively high interest in purchasing from a food hub, within certain constraints and a need for more information.

The hub was unable to meet its objective of selling produce to local corner stores. It has also faced challenges purchasing from as many local growers as anticipated. Given limited participation of local growers, hub sales were approximately 10% locally purchased produce, with the remainder being purchased from a distributor. The limited supply of local produce brings one of the objectives of the food hub, namely, providing small and medium local growers with improved markets for their product, into question. Nonetheless, the hub is working to increase sales of local produce by continuing to recruit local growers. It has successfully obtained additional funding to train new farmers and help current suppliers obtain GAP certification, which will help increase access to new markets. The hub has also applied for additional CDFA SCBG funding to continue operations as it works to become more sustainable.

A longer timeline will also allow the hub to expand its customer base, which appears to be ramping up, but can be a lengthy process. As the Nutrition Services Director explained, “It’s taken all this time for people to start getting on board. But we were just approached by a restaurant that wants to buy from us. We’ve been struggling and struggling and struggling and all of sudden now they’re coming.” That was corroborated by the hub manager, who explained that, “I really am beginning to learn the power of relationships. You develop a relationship with them and they trust you and start buying from you. But that takes time.”

Finally, if the hub is able to continue expanding, it will be critical to create a stronger business plan so that the hub is able to successfully meet future challenges, that will inevitably accompany growth. Ongoing evaluation of the hub’s growth and successes also is warranted so that lessons learned can be shared with other school districts who may wish to replicate and build upon RUSD’s innovation in order to provide more locally-grown produce to students and families.



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APPENDIX: Southern California Food Hub Market Assessment

Overview/Scope of Work

In collaboration with the UC ANR Nutrition Policy Institute, the UC Sustainable Research and Education Program (UC SAREP) conducted an assessment of potential markets in Riverside and San Bernardino counties for the Riverside Unified School District (RUSD) food distribution hub and other southern California food hubs. The assessment targeted the following types of institutions: (a) small and medium school districts; (b) childcare centers; (c) community colleges, 4-year colleges and universities and (d) health clinics.

Public health, UC Cooperative Extension, and RUSD food service staff provided names of potential interviewees within these four institutional types. They helped make introductions for researchers by email so when they were contacted about interviews, they were prepared. A spreadsheet of all potential interviewees was created with contact information for staff at 30 institutions. Between February and May 2019, in-depth, semi-structured telephone interviews were conducted with 15 food service and other knowledgeable staff who agreed to be interviewed.

The interviews assessed factors including current food service use of fresh and/or local produce; interest in expanding access to fresh/local produce; where fresh produce is currently sourced; potential interest in sourcing from the RUSD food distribution hub or other southern California food hub; perceived barriers to purchasing from a food hub; and factors facilitating purchasing from food distribution hubs.

RESULTS

The information below summarizes the data collected in 10 basic categories: (1) institutional characteristics; (2) extent of scratch cooking and use of fresh produce; (3) food and produce budgets; (4) procurement sources for fresh produce; (5) top considerations in produce purchasing decisions; (6) purchasing requirements-financial, food safety, logistical; (7) interest in purchasing more local produce and promotion; (8) knowledge about/interest in purchasing from a food hub; (9) appealing and challenging aspects of purchasing from a food hub; and (10) other useful information that emerged.

Institutional characteristics

Of the 15 institutional food service buyers interviewed, about half (6) were from K-12 schools and about half (6) were from colleges/universities. The remaining were from childcare centers (2) and a free health clinic (1). All were self-operated with the exception of one college that used a food service management company.

The sizes of the institutions varied widely from 96 meals/day to 32,000 meals/day with an average of 10,451 meals/day for all 15 institutions. Since the childcare centers and free clinic

were so much smaller (96-120 meals/day) compared to all the others, if we remove those three, the average for all of the schools (K-12 and colleges/universities) was 13,045 meals/day.

Most (11) of the institutions had salad bars with fresh produce; some had more than one (range was 1-22). On average, institutions that had salad bars offered 8 salad bars per institution.

Scratch cooking and use of fresh produce

Almost all institutions (14 of 15) said they do some scratch cooking. Many mentioned either “speed scratch” or “fast scratch” which was also considered cooking from scratch. This means that some of the ingredients are prepared (such as a tomato sauce) and then used to make an entrée such as a pasta dish with tomato sauce from scratch. Of the 14 institutions that said they did some scratch cooking, almost 60% of their entrées were cooked from scratch. Of all 15 institutions, about a third said they wanted to do more scratch cooking; one third said they weren’t sure and one third said that they did not want to do more scratch cooking. Some felt they were at their current limit of scratch cooking due to limitations in facilities, time, labor, supervision, food safety or quality control. Others were satisfied with their current configuration. Several specifically pre-planned when they were going to use more processed items on the menu and when they would do more scratch cooking.

Almost all institutions (14 or 15) said they purchased whole or pre-cut produce for their salad bars or entrées. Nine said their kitchen staff were willing and able to prepare whole, unprocessed produce; 2 said their staff were unable and 3 were unsure.

Food/produce budget

The total annual food spend for all 15 institutions totaled \$70.1 million with an average of \$4.7 million per institution and a range of \$12,000 - \$29 million. The childcare centers and clinic spent much less annually (\$12,000 - \$24,000/year). If we only count the K-12 schools and colleges/universities, the average per institution is \$5.8 million.

The total annual produce spend for all 15 institutions totaled \$15.8 million with an average of \$1 million per institution (about 22.5% of total budget). If we only count the K-12 schools and colleges/universities, the average per institution is \$1.3 million.

Sources of fresh produce

Institutions mainly use produce distributors (not food hubs) to purchase the majority of their fresh produce, although several also mentioned other sources as well. Distributors were mentioned by 11 interviewees and these were generally their main produce supplier, supplying about 93% of their fresh produce. Five interviewees mentioned purchasing directly from growers; 3 mentioned purchasing from food hubs, 3 from supermarkets and 1 from a farmers’ market. For those institutions in which produce distributors were not their main source of

produce, 2 said their main source was a supermarket, 1 said a food hub and 1 mentioned a Group Purchasing Organization (GPO).⁴

Top considerations when purchasing fresh produce

Interviewees were asked to rank their top considerations when purchasing fresh product from a list that included: price, local, organic, adequate supply/volume, delivery logistics, seasonal, food safety and relationship with vendor .

Price topped the list of the most important considerations when purchasing fresh produce. Almost half (47%) of interviewees said price ranked #1, 3 interviewees ranked price as #2 and 4 (27%) ranked it a #3.

Delivery logistics was the second most important consideration and food safety was the third most important consideration. Adequate supply or volume and local produce were the only other considerations that surfaced as only somewhat important.

Several interviewees mentioned other criteria considered when purchasing fresh produce that were not included in the list provided. These included freshness, quality, health, service and sustainability standards (one each, all #2 or #3 ranking, with the exception of quality, which ranked #1).

Purchasing requirements

Almost all of the interviewees mentioned financial (bidding) requirements when purchasing fresh produce. The childcare centers and health clinic, because of their smaller size, did not have to contend with bidding. For school districts, there are very strict rules about competitive bidding. Some school districts must accept the lowest bid and for any purchase more than \$250,000, competitive bids are required (as per federal procurement guidelines). If purchases are more than \$10,000, competitive quotes are required. For colleges and universities, there seemed to be more flexibility as long as buyers stay within budget. Overall, 9 interviewees required competitive bids and 6 did not.

Food safety was another major requirement with 12 interviewees saying that food safety, HACCP plans, GAP certification and liability insurance were all key. Generally, institutions required \$1-\$2 million liability insurance.

Other requirements fell into three categories: delivery times, e.g. within particular parameters (7 mentions), enough volume/ availability (5 mentions) and delivery places, e.g. to all the dining halls or school kitchens (2 mentions).

⁴ A group purchasing organization (GPO) is defined as “an entity that is created to leverage the purchasing power of a group of businesses to obtain discounts from vendors based on the collective buying power of the GPO members” (https://en.wikipedia.org/wiki/Group_purchasing_organization).

Interest in purchasing more local food

Most interviewees (14) were at least somewhat interested in purchasing more local produce. Only one said they were not interested. Of the 14, 2 were very interested and the rest somewhat interested. The interest came with caveats, including:

- Whether the price is right;
- Whether the food hub could deliver to all sites; if not, how would this be worked out and how much would it cost?;
- Whether the product is what they want/need;
- If all guidelines (food safety, etc.) were met;
- If the produce is high quality;
- If the produce could go through the current distributor.

Half of the interviewees currently promote their local produce from California farmers and half do not. Strategies for promoting where the local produce came from included: listing it on the menu, posting information about the farms on their websites, and including a map of where produce comes from at sustainability events, including signage on the salad bars and school flyers.

Knowledge about and Interest in purchasing from a food hub

Of the 15 respondents, 6 had purchased food from a food hub. Nine of 15 were somewhat interested and 1 was very interested in exploring [more] purchases from a food hub. The other 5 were already purchasing from a food hub.

Appealing aspects of a food hub

The most common answer to this question was that food hubs allow buyers to access produce from local growers and know where their produce comes from. They can then promote local produce to their customers. For example, college/university students are asking for local produce. One food service buyer said it was nice to know they are spending local tax dollars closer to home and supporting local businesses; it is an investment in the community. Students also appreciate being served locally identified fresh produce. One buyer said that if purchasing requirements are met, he may be able to send one of his trucks to the food hub to pick up the delivery.

Concerns with buying from a food hub

For the most part, food service buyers felt they didn't have enough information to make a decision about whether a food hub would work for them. Interviewees had a lot of questions. Most have to abide by procurement regulations. Would the food hub be able to meet these? Who would the food service buyer pay? Would they be able to buy and get deliveries weekly?

Some buyers wanted to know about the value proposition and how prices compared with their current vendors. What about delivery? Does the food hub deliver (in a refrigerated truck?) or would the food service buyer need to pay for a driver to go pick up the produce? Could they deliver to multiple locations in a school district if there is no central kitchen? Is the food hub

safety certified? GAP certified? Does it have liability insurance? Another food service buyer was interested in the quality of the produce from the food hub? Is it up to standards? Can they get enough of what they want? Besides price and delivery logistics, food service buyers wanted to know about communication logistics. How would they find out what the food hub has and how to get it? Some of the interviewees said they are moving away from static menus to more seasonal ones and they need to be able to communicate what they need. Finally, they would want some sort of assurance that the produce is actually local as requested.

Summary comments

In general, food service buyers seemed genuinely interested in exploring business with a food hub if they could meet the buyers' needs. Price and delivery were top of their lists of criteria. Just as important was regular communication about prices, availability and any changes. Some buyers were interested in giving it a try, but would need prompt and ongoing communication with the food hub manager. Most of the 15 interviewees would be potential new customers for the RUSD food hub.