

Balancing social values with economic realities: Farmer experience with cost-offset community supported agriculture

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 VALUE\$ IN THE FOOD SYSTEM



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Abstract

Some farmers are offering subsidized or “cost-off-set” community supported agriculture (CO-CSA)

shares as a strategy to counter market saturation and improve low-income families’ access to fresh local foods. However, little is known about farm-

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ers' experiences with this model, particularly in regard to the balance between additional resources required for adoption and subsequent contributions to farm revenue. As part of the *Farm Fresh Foods for Healthy Kids Study* of the impact of a CO-CSA on dietary behaviors in low-income families, we conducted qualitative interviews with 12 farmers across four states after the first and the third years of CO-CSA implementation. We explored these data to understand what accommodations farmers provided to low-income families, the benefits and challenges of implementing the CO-CSA model, and farmers' perceptions of its impact on cash flow and profitability. We found that farmers selected pick-up locations that met CO-CSA members' needs, were responsive to members' food preferences in selecting CSA contents, and allowed for late payments and pickups, though sometimes this placed an additional burden on farmers' time and resources. Additionally, weekly payment transactions led to increased recordkeeping. Despite its challenges, most farmers said CO-CSA adoption was a worthwhile addition to their business model. Expanding food access through this mechanism may become more sustainable with the additional support of innovative policies like eased land-use restrictions, operational models, and community strategies to fund and operate CO-CSA programs. This is an area ripe for future research, as there is little documentation on both single farm and multi-farm CO-CSA operations.

Keywords

Cost-Offset CSA, Community Supported Agriculture, Entrepreneurship, Farmer Profitability, Nutrition Incentives, Subsidized Direct-to-Consumer

Introduction

Developments in the U.S. food system since the early 20th century have created efficiencies that have reduced both direct costs to the industry and prices for consumers (Institute of Medicine & National Research Council, 2015). Despite many notable accomplishments, one critique of this system is that food prices do not reflect the full social, economic, and environmental costs of production (Buttel, 2003). Trends that include globalization, technological innovation, and industry consolida-

tion have created competitive advantages for large firms that benefit from economies of scale. Smaller and mid-sized producers may be marginalized in this system, with implications for local economies and the choices available to consumers (Hendrickson, James, & Heffernan, 2018; Institute of Medicine & National Research Council, 2015).

Alternative models have arisen to sustain small and midsized operations. One such model is the values-based supply chain (VBSC), in which all network actors (e.g., farmers, processors, third-party certifiers, distributors, and retailers) collaborate to maximize the social and financial return on investment for all participants in the supply chain (Bloom & Hinrichs, 2011a; Bloom & Hinrichs, 2011b; Cohen & Derryck, 2011; Stevenson, 2013; Stevenson & Pirog, 2008). This model is values-based because of its deliberate effort to create trust, transparency, and cooperation among supply chain actors, and its commitment to the welfare of the people, land, and livestock involved (Cohen & Derryck, 2011). VBSCs seek to maximize the intrinsic value of products for intermediate and final customers by highlighting such distinctive characteristics as local provenance, sustainable production techniques, high ethical standards, and other elements that consumers increasingly associate with quality (Cohen & Derryck 2011). Producers engaged in VBSC may sell through a number of intermediated marketing channels, including grocers, restaurants, and regional aggregators (e.g., food hubs). They may also make buying arrangements with the foodservice operations of schools, universities, hospitals, and other institutions (Low & Vogel, 2011).

Civic agriculture is another alternative model, in which farmers aim to decrease the physical and social distances between producer and consumer, as well as eliminate intermediaries. This is a strategy to increase farmer profits while decreasing consumer costs (Renting, Marsden, & Banks, 2003). According to Feenstra (1997), civic agriculture emphasizes the place-based characteristics of regional food systems, the economic viability of farmers and rural communities, ecologically sound production and distribution practices, reliance on local knowledge, and social equity for all members of the community (see also Chiffolleau, Millet-Amrani, &

Canard, 2016; DeLind & Bingen, 2008).

These principles are embodied in direct-to-consumer (DTC) sales strategies such as farm stands, farmers markets, and community supported agriculture (CSA). In these markets, consumers are seen as co-creators of the new food system, motivated by shared values of environmental sustainability, the economic viability of producers, support for local communities and economies, and reciprocal relationships (Andreatta, 2000; Chiffolleau et al., 2016; Goland, 2002; Hayden & Buck, 2012; Henderson & Van En, 1999; Martinez et al., 2010; Ostrom 2007). Consumers are willing to pay higher prices and accept certain inconveniences when they choose to purchase through DTC venues (McGuirt et al., 2020) because they like the quality and taste of the food and consider it worthwhile to support the development of an alternative food system.

DTC marketing of local foods has demonstrated dramatic growth in popularity over the past few decades. Beginning in 1992, the inflation-adjusted value of DTC sales increased by 77 percent, reaching \$1.2 billion¹ in 2007 (Low & Vogel, 2011). But by 2012, DTC sales began to flatten, possibly due to DTC market saturation, increased competition from intermediated market sales of local foods, and new technologies like online ordering and meal kits (Galt, Bradley, Christensen, Van Soelen Kim, & Lobo, 2016; Low et al., 2015). In 2017, DTC sales of raw and value-added products involved just 6.4 percent of farms and contributed to only 0.7 percent to total agricultural sales (U.S. Department of Agriculture, National Agriculture Statistics Service [USDA NASS], 2019). Further, while 130,056 farms sold via DTC approaches and 28,958 farms sold via intermediated channels that year, intermediated sales greatly outpaced DTC sales, such that the average sale per intermediated farm was \$312,042 while the average per DTC farm was \$21,570. (USDA NASS, 2019).

The traditional CSA model, in which consumers pay the farmer ahead of the growing season in return for a “share” of the harvest, is arguably most emblematic of civic agriculture, requiring members’ commitment and high allegiance to its core values (Galt et al., 2016; Martinez et al., 2010; Pole & Ku-

mar, 2015). Well-documented barriers to participation include up-front payments, pick-up logistics, farmer-directed selection, seasonality, and unfamiliar vegetables (Kolodinsky et al., 2017). Therefore, it is not surprising that 2015 CSA sales made up only seven percent of DTC sales overall, while the proportions of sales through farm stands and farmers markets were 44 and 23 percent, respectively (USDA NASS, 2016a; 2016b). Thus, to retain customers and expand markets, CSA farmers are exploring various business expansion strategies. Some of these strategies include adding value-added products, offering flexible shares (frequency, payments, item selection, etc.), utilizing flexible electronic purchasing and other e-commerce marketing tools, partnering with institutional health and wellness programs, collaborating with food hubs and multifarm systems to increase scale and scope, and employing season extension technologies (Woods, Ernst, & Tropp, 2017).

Other strategies to expand markets include CSA outreach to those with lower access to fresh produce, such as low-income families (AbuSabha, Namjoshi, & Klein, 2011; Cohen & Derryck, 2011; Hinrichs & Kremer, 2002; Lang, 2010), rural populations (Local Food Research Center, 2013; Wells, Gradwell, & Yoder, 1999), and those living in urban food deserts (Ammerman, 2012; Duvall, 2014; Friedman, R. R. (2008), Jablonski, Perez-Burgos, & Gómez, 2011). Two USDA grant programs, the Farmers Market Promotion Program and the Local Food Promotion Program, incentivize low-income consumers to shop at farmers markets or purchase CSA subscriptions using SNAP benefits (USDA AMS, 2016). Additionally, many farmers seek to reduce barriers to participation through discounts, sliding-scale membership fees, work-shares, and donated shares.

Another strategy some CSA farmers use is altering the payment structure and offering cost-offset (subsidy) shares at a 25 to 50 percent discount. While its prevalence is unknown, one study estimated that half of all CSA farms interviewed in Central California offered some type of cost-offset CSA (CO-CSA) (Guthman, Morris, & Allen, 2006). CO-CSAs rely on diverse funding strategies to

¹ All values are in U.S. dollars.

cover the CSA subsidy. Some of these methods include accepting donations from full-pay CSA members, seeking grants, conducting community fundraising, accepting work-shares and bartering, partnering with organizations that raise or supply funds, and using low input, minimal-labor practices to reduce share price (Forbes & Harmon, 2008; Galt et al., 2016; Guthman et al., 2006; Hinrichs & Kremer, 2002; Lang, 2010; Rossi, Woods, & Allen, 2017). Some farmers further reduce barriers by offering flexible payment plans, accepting SNAP EBT, arranging alternative pick up sites and/or times, and taking food preferences into account when packing the CSA (Kantor, 2001).

A few studies examining the dietary habits and nutrition impacts of subsidized CSAs have provided insights from farmers on implementing the CO-CSA model. One CO-CSA intervention study found that farmers generally liked that the subsidy provided by the study gave them guaranteed sales and allowed them to use imperfect produce in the boxes (Abbott, 2014). Novice CSA farmers adopting CO-CSA said they struggled with packing and distribution logistics while trying to be sensitive to the food preferences of low-income customers (Abbott, 2014; Andreatta, Rhyne, & Dery, 2008). Farmers mentioned problems with CO-CSA members dropping out, picking up, and paying for food on time (Andreatta et al., 2008; Hoffman et al., 2012). Suggested explanations included CO-CSA members not fully understanding the CSA concept (Abbott, 2014) and CO-CSA share costs that were too high to be sustainable. Farmers' suggestions included reducing the share size, asking for partial payment from participants, and accepting SNAP and WIC to pay for weekly shares (Quandt, Dupuis, Fish, & D'Agostino, 2013). Yet, there remains a need for a systematic study of the benefits, burdens, and financial impacts of operating a CO-CSA program from the farmer's perspective, particularly across diverse geographic regions where these programs might have differing impacts.

In this article, we describe findings from qualitative, in-depth interviews with 12 farmers in four U.S. states who added a cost-offset to their CSA operation. This is part of a larger, multistate, multidisciplinary study on the impact of CO-CSAs on dietary behaviors in low-income families (Seguin et

al., 2017). The research questions to be explored in this paper include:

- What strategies did farmers use to accommodate low-income families?
- How did the CO-CSA adoption affect cash flow and profitability?
- What were the benefits and challenges of implementing the CO-CSA model?

Design and Setting

The Farm Fresh Foods for Healthy Kids (F3HK) study was a multistate, USDA-funded randomized trial that investigated how CO-CSA membership, combined with tailored nutrition education, affected diet and other health behaviors in low-income families and local agricultural economies (Seguin et al., 2017). Twelve farms across New York, Vermont, North Carolina, and Washington were selected based on the farm's interest in adding a cost-offset program to their existing CSA business to include more low-income families in their customer base. As previously reported, farms varied in population size and in proximity to either metropolitan or rural areas (McGuirt, Sitaker, Jilcott Pitts, Ammerman, Kolodinsky, & Seguin-Fowler, 2019; Sitaker, McGuirt, Wang, Kolodinsky, & Seguin, 2019). Research staff recruited eligible families to participate in the CO-CSA, provided pre-season funds to cover 50% of the CSA share cost for each participant, and covered equipment and transaction costs for participating farmers to accept EBT payments (Seguin et al. 2017). In turn, participating farmers agreed to abide by the study's operational parameters and participate in data collection activities and continuation planning during the final intervention year. Farmers were at liberty to select the F3HK CSA pickup sites, which included on-farm sites, offsite locations, or both (McGuirt et al., 2019; Sitaker et al., 2019).

The three-year CO-CSA intervention began implementation in 2016. CSA seasons varied in duration from 15 to 24 weeks (mean=19 weeks), with market share prices ranging from \$365 to \$900. Cost-offset participants paid 50 percent of the market price, in weekly installments of between \$9 and \$21 per week. Many farmers offered only one share size, while four offered various sizes at graduated

prices. In the first season (2016), there were between two and 17 F3HK participants per farm.

Research Methods

We analyzed data from two sets of interviews with 12 participating F3HK farms. In the 2016 post-season interviews, we asked farmers to reflect on their motives for F3HK participation, along with the successes and challenges of CO-CSA implementation during the first year. Farmers also provided information on how adding the CO-CSA affected inputs (e.g., staffing, training, workload, equipment, etc.), CSA operations, and finances (i.e., sales, cash flow, and profitability), along with plans for the CO-CSA in the next year. The 2018 debriefings occurred after the final F3HK intervention year, during which farmers received training and support for developing and implementing a CO-CSA continuation plan with support from F3HK coaches. Debriefing interviews focused on farmer experience with continuation planning and implementation; challenges, successes, and lessons learned; and plans for their CO-CSA operation after the F3HK study ended.

Interviews and debriefings were audio-recorded, transcribed verbatim, imported into the NVivo qualitative data analysis software (QSR International Pty Ltd., Version 11), and coded by question. Researchers met to discuss the coding process and emergent ideas. These discussions informed the development of preliminary descriptive codebooks reflecting farmers' experience with CO-CSA implementation, including alignment with values, interactions with participants, associated costs,

and impact on revenue. We then iteratively and collaboratively revised and refined the codebooks, and final codebooks were applied to the full set of transcripts. Qualitative data were analyzed by reviewing and summarizing codes.

Results

The findings are divided into seven major categories: farm characteristics, motives for participation, labor costs and expenses related to CO-CSA, financial impacts, strategies for cementing new customer relationships, challenges of accommodation, and benefits of CO-CSA implementation. The themes that emerged from the data within each of these categories are described in the text below, accompanied by illustrative quotes.

Farm Characteristics

F3HK farms generated an average of \$289,641 in gross sales in 2015, but this ranged from \$42,000 to \$1,021,110 (Table 1). Sales varied widely between and within states, with North Carolina displaying the lowest average sales and smallest intra-state variation (\$77,468, \$38,733 s.d.) and Washington farms, the highest (\$546,037, \$490,197 s.d.). Similarly, CSA membership for individual F3HK farms varied, from 45 to 1145 members (mean 243; median 101).

Ten F3HK farms sold between 75 and 100 percent of their product through CSA; only one farm sold through CSA exclusively. Seven F3HK farms (58 percent) also sold to restaurants or retailers, similar to the national estimate of CSA operations selling to restaurants (55 percent), but higher

Table 1. Characteristics of Farm Fresh Foods for Healthy Kids (F3HK) Farm Operations, 2016, Averaged by State

State (Region)	2015 Gross Farm Sales in USD (s.d.) ^a	DTC as % of all sales ^a	CSA members per farm		CO-CSA members (% of CSAs) ^c
			F3HK Ave. (s.d.) ^a	Region ^b	
NY (NE)	\$195,871 (\$237,552)	80%–98%	170.3 (113.2)	203.8	31 (6.1%)
VT (NE)	\$273,758 (\$194,316)	75%–93%	248.3 (249.4)		19 (1.9%)
NC (SE)	\$77,468 (\$38,733)	50%–84%	75.5 (14.8)	105.9	31 (20.5%)
WA (W)	\$546,037 (\$490,197)	26%–100%	422 (652.1)	125.7	16 (1.3%)
Overall (Avg. or Range)	\$289,641 (\$305,205)	26%–100%	243 (336)	144.8	97 (3.3%)

^a F3HK self-reported data from 2016 farmer interviews

^b As reported in Woods, Ernst, & Tropp, 2017

^c F3HK administrative data, 2016

than the estimated 38 percent selling to grocery stores (Woods et al., 2017). Additionally, 33 percent of F3HK farms sold to food hubs or wholesalers, and eight percent sold to institutional buyers or processors.

F3HK farms located in New York and Vermont had smaller CSA memberships compared to the Northeast regional estimate of 203.8 (Woods et al., 2017), while farms in North Carolina and Washington had larger CSA memberships than the Southeast and West regional estimates of 105.9 and 125.7, respectively. An average of eight study participants was recruited by the study for each F3HK farm (range, 2 to 17 members), with Vermont F3HK farms having the fewest and North Carolina F3HK farms having the most CO-CSA members. This means that, on average, about 3 percent of F3HK farms' CSA membership received a CO-CSA, with a broad range across states (0.8 to 21 percent). Thus, with the exception of North Carolina farms, the potential for F3HK to make significant contributions to farm revenue during the three-year study was small, given the modest number of participants.

Motives for Participation

When asked, after their first year of implementation, why they agreed to participate in the F3HK study, farmers were unanimous in stating that the CO-CSA model aligned with their goal "... to get food into places or to people that had a harder time providing fresh produce to their families":

We've always wanted to be able to provide CSA shares ... to people who couldn't afford it otherwise. (41-2016)

It drives me crazy that the idea of good food is only for the wealthy and that it has some sort of elitist connotations to it. (31-2016)

This reflects farmers' internalization of the social values of civic agriculture. Farmers empathized with the plight of low-income families; in one case, this was based on first-hand experience of having "lived in a more like 'budget-tight' household, so I can really relate to... not having a chunk of money at once [for upfront CSA payment]" (43-2018). Yet

for many farmers, funding the subsidy constituted a barrier to setting up a CO-CSA program:

I think what's difficult for the farm is to actually offer a price-subsidized share because people are pretty much buying things at cost anyway by joining a CSA. It's really hard for a farmer to make that cost even lower. (22-2016)

In addition to wanting to improve local food access for low-income families, farmers voiced a desire to expand their business in new locations and market segments. Farmers appreciated the support provided by the study, including funding the cost-offset, recruiting new customers, and facilitating their ability to accept SNAP EBT payments:

It was a great opportunity to start getting into that [low-income consumer market] without too much legwork on our part, trying to figure out logistics. (13-2016)

... the idea that we could create a business model that in part was funded and supported, and reaching a wider audience was definitely a positive. And also, being able to make money at the same time. (32-2016)

Thus, participation in F3HK provided a low-risk opportunity for farmers to adopt a new practice that brought their business into better alignment with their values. For most farmers, getting only 50% of the seasonal share cost upfront was not a barrier to participation. As one farmer said, their farm was "big enough that we don't have to just rely on pre-season payments."

Labor Costs and Expenses Related to CO-CSA

Many farmers said that the additional labor and staff costs associated with adopting the CO-CSA were "very minimal." One farmer estimated spending 30 hours in planning for the CO-CSA, at a seasonal cost of \$450. This farmer also estimated \$150 in staff time was spent packing two [CO-CSA] shares that were assembled in a slightly different manner than full-pay CSA shares, while staff training costs amounted to \$150. Other farmers reported training costs to be negligible or

non-existent. Three farmers said they paid staff to spend extra time waiting for CO-CSA customers to pick up and pay for their weekly share. Administrative staff time spent recording weekly payments was mentioned by three Vermont farmers. Regarding other expenses, a Washington farmer reported spending \$450 on transportation to deliver to a new location, and others reported minor expenses for flyers, replacement bags, boxes, and cold packs.

Financial Impacts

In postseason interviews, farmers reported the size of their 2016 CSA membership, along with the proportion of sales made through direct channels (Table 2). We compared this with administrative data on the number of enrolled F3HK participants in 2016 to arrive at the estimated proportion of

overall sales that could reasonably be attributed to the CO-CSA. These estimates are shown below, along with the farmers' opinions of how adding a CO-CSA program impacted revenue. Eight farmers indicated there was a positive effect, while four said the impact was negligible. We then ordered farmer responses according to the proportion of overall farm sales attributable to the CO-CSA (Table 2).

In general, farms for which the CO-CSA was a larger portion of overall sales tended to report that the program positively impacted their revenue. However, two farms in which the CO-CSA represented the smallest proportion of overall sales said adding the CO-CSA had indeed made a positive, incremental financial contribution because it "encouraged more people to join than otherwise"

Table 2. Cost-offset Community Support Agriculture (CO-CSA) Sales and Perceived Impact on Revenue

Farm ID#	CO-CSA members 2016 ^a	CSA members 2016 ^b	% sales attributed to DTC ^b	CO-CSA Sales, as % of all ^c	Farmers' opinions of CO-CSA impact on farm revenue ^b
31	14	71	84.0%	16.6%	"[It increased] . . . we've picked up some more CSA shares."
32	17	80	50.0%	10.6%	". . . Increased the revenue, based on not even 15 people because if you took the average of how many weeks they did . . . you're more like 10 full members."
13	14	120	90.0%	10.5%	"It increased our shares by about 6 percent. And a couple of people would still buy extras at the market."
23	3	45	100.0%	6.7%	"It increased it a little bit."
12	6	91	98.0%	6.5%	"[No]—we would have been able to fill those shares anyway."
43	9	110	78.0%	6.4%	"There's 9 x \$360. So there's definitely a volume increase."
11	11	300	80.0%	2.9%	"I don't know what percent we increased but it was definitely noticeable to have the extra people, revenue-wise."
41	2	63	76.0%	2.4%	"It hasn't. Just with the two people, there wasn't that big of a difference."
45	3	209	75.0%	1.1%	"It didn't really, much. We're a bigger farm."
44	5	611	93.0%	0.8%	"Definitely . . . it helps us to sell shares. That's our—it's 93 % of our revenue."
21	3	46	26.0%	1.7%	"Insignificant."
22	10	1,175	80.0%	0.7%	"A plus for our farm . . . it encouraged more people to join than otherwise."

^a F3HK Administrative data, 2016

^b F3HK self-reported data from 2016 farmer interviews (Note: sales attributed to DTC included CSAs, farmers markets, farm stands, etc.)

^c Calculated: [(CO-CSA enrolled/Total CSA members) X (% attributed to DTC)] = CO-CSA sales as a % of overall sales

and “it helps us to sell shares.” It should be noted all but one other F3HK farmer (13-2016) said that CO-CSA members were additions to their member base as opposed to merely replacing drop-outs.

When asked how the CO-CSA policy of accepting weekly installment payments affected cash flow, four farmers said they saw little effect because they already allow members to pay in installments. Five other farmers thought it was “nice to have,” while two felt that installment income throughout the season “didn’t really help, but it didn’t hurt.”

Strategies for Cementing New Customer Relationships

As with full-pay CSA members, building customer relationships was an essential part of business development when adapting the CSA model for a new market demographic. Some farmers felt that staffing the pickup was “absolutely crucial” to allow for face-to-face interaction with CO-CSA members:

In the past, [for] the folks who pay in full upfront, I would just leave their bags and I would leave . . . [but] these last three years, some of the folks actually started coming during the window they knew I was going to be there . . . I had them actually say that: “Oh, you know, I wanted to get here while you’re here and see you and ask you about-- whatever.” So, . . . I do think that being on site with the bags is important. (31-2018).

Some farmers made an effort to convey that there was no difference in status between the CO-CSA and full-pay members. As one farmer explained,

There isn’t really any difference between a supported share and a regular share otherwise, because everyone is coming and getting the same vegetables, same amount of vegetable, they come on the same schedule, they get statements every month . . . once I know how they’re going to pay, they’re reminded about paying just like everyone else is (44-2018).

Yet farmers were mindful of the need to respect the privacy of potential CO-CSA members during outreach: “We’re certainly never asking anybody what their income is.” They also recognized that CO-CSA members might require additional accommodations to overcome barriers to participation and therefore were more lenient about accepting late payments and allowing next-day pickup for those who missed the regular day. They also chose pickup sites at culturally sensitive locations along known daily travel routes. For example, one farmer switched pick-up locations from an isolated spot to the church parking lot where the F3HK nutrition education classes were held:

The church had more going on, people coming and going, and it was just a better place

. . . [co-location was] another reason for them (CO-CSA members) to actually go to class and come get their produce. (23-2018)

Additionally, to ease the adoption of this new way to shop, two farmers made an effort to set aside the “first and best” of the more familiar varieties to include in the F3HK participants’ box. As one farmer explained:

I set a priority that, for instance, they [CO-CSA members] would always get carrots and then maybe the [full pay] people might not get them every week . . . It’s just kind of thinking these people have kids and they have limited money, so let’s give them something really popular. (22-2016).

What I always did with all of the CO-CSA people—both the people still in the study and the people who are not— . . . I always gave them the first and the best . . . the more wealthy people in my CSA-- they don’t really need me . . . they could go to the farmers markets and they could buy organic and whatnot. But these folks who are in the program, they really might not be able to. . . if there was only a limited amount, I gave it to those subsidized people. (NC31-2018)

Challenges of Accommodation

Yet farmers said some CO-CSA accommodations often came at their own expense. For example, farmers sometimes made personal deliveries of missed shares for people who lived or worked close by because it was “easier than trying to coordinate a time,” yet lamented “it cost me a lot of time and gas.”

Farmers frequently mentioned that the extra recordkeeping associated with weekly payments drained their resources, particularly for farmers selling through multiple channels:

Part of CSA is getting the money up front and not dealing with a lot of paperwork with your sales . . . you get a chunk of money up front and you don't have to deal with money any more for a while. So, it would be a lot easier if it was payments all at once. (45-2016).

Further, there was a relational aspect to collecting late payments, because farmers felt uncomfortable telling families, “you can't get any until you pay something.” When asking for late payments, farmers sometimes felt “guilty, terrible about doing that, but at the same time we need to fund our business.”

Farmers who had to track down late payments for product that had already been picked up, frequently felt their business suffered:

[What they're] doing is making it so hard for me to run a business where I can . . . pay my employees fairly and like do raises . . . when I like don't know when we're going to be paid for something that we've already put out, it makes it really difficult across the board. (43-2018).

Farmers mentioned that extra burdens associated with CO-CSA accommodations occurred on top of the usual agricultural challenges of weather, rising labor costs, flattened market trends, and managing multiple market channels. Some farmers felt that customers were only vaguely aware of the precarious nature of agricultural businesses, and sought to educate consumers by sharing photos in their newsletters and social media accounts:

Our newsletter has pictures in it each week. And the picture of the week is not just some pretty scene from the farm, it's something specific to what I'm trying to show them. You know, it might be a picture of a particular pest that we're experiencing. “This is the yellow margin leaf beetle and this is what it does to a leaf.” Or “This is what our fields look like after we got those 12 inches of rain.” You know, that sort of thing. And I think that helps. (31-2018).

Further, farmers felt a need to remind customers that though they have a personal connection with the farm, there is still a strong economic aspect to the relationship:

I'm always concerned with people who may not value the program as much as we do, and think of it just as a hand out . . . it's hard to impress upon people that, you know, they have the obligation to fill their part of the contract . . . they're getting a great benefit for their obligation . . . I've been trying to be better about, if people are sliding too much, you know, telling them they are not keeping up their monthly payments, or whatever, that we'll stop [their share]. (44-2018).

Benefits of CO-CSA Implementation

The relationships built over the course of the intervention helped cultivate a sense of community, which was rewarding for the farmer as well as the customer. As one farmer noted:

. . . we've been seeing each other for almost four years now. And it's just so great— they like stay and hang out and it's not just about picking up the vegetables, it's like a community event every [pickup day]. It's really, really neat. I think that people are really, really happy to be getting the food, and that feels like a huge success (22-2018).

Farmers acknowledged that relationship building takes time, and therefore they try to “figure out a way that kind of maintains that sort of face-to-face contact without being so expensive.” Yet rela-

tionships also confer tangible benefits to the farmer. For example, the relational ties built between one farmer and CO-CSA customer eased the farmer's worries over late payments. The farmer explained that if a member was unable to pick up their share when the site was staffed, the farmer left it for them at the drop site to be retrieved at the customer's convenience. In most cases, the customer would pay for their share by the next week; if not, the farmer had their deposit in reserve.

Some folks went through some different tough times but . . . this is my third year with them, I knew that they were going to make it right whenever they could . . . [if] they couldn't [pay], then I could go back to my people [regular CSA] and get more [donations]. (C31-2018).

Discussion

The alternative food systems movement resulted in a rapid rise in DTC sales and farms selling through those venues in the last two decades (Low et al., 2015). CSA has gained traction among some population groups but has been criticized for excluding households with limited incomes. As farmers search for strategies to maintain viability in the face of market saturation and competition from online marketing, information on their experiences with CO-CSA is needed to support policy and extension activities. To our knowledge, this is the first study to systematically examine farmers' motivations for adopting a CO-CSA and reflections on their experiences.

In this multistate study incorporating diverse operations, F3HK farmers consistently reported two primary motivations to develop and implement a subsidized program: a desire to align their business operations with their personal values around healthy food access, and the pursuit of new markets. Prior research with CSA farmers identified equitable access to healthy food as an important part of the farm's mission (Galt, O'Sullivan, Beckett, & Hiner, 2012; Morgan et al., 2018; Ostrom, 2007). That said, most farmers are engaged in a business enterprise, and as such cannot sacrifice their own livelihood; the alternative food systems movement is not intended to be a

charity model. In at least one other study of farmers engaged in farm to institution sales, the most successful were those able to balance both economic and altruistic goals (Conner, King, Kolodinsky, Roche, Koliba, & Trubek, 2012).

While F3HK farmers aimed to confer an equal status on all CSA members, some gave special treatment to new CO-CSA members to address their needs, including selecting convenient and culturally appropriate pick-up locations, arranging for late payments and pickups, and being sensitive to the food preferences of CO-CSA members (as described in Andreatta et al., 2008). However, when asked about implementation challenges, farmers admitted that some accommodations, such as following up on skipped payments and arranging to make up missed pick-ups, placed an added burden on their time and resources. As previously reported, many F3HK farmers found that increased frequency of CO-CSA payment transactions led to increased recordkeeping burden, particularly when there was no clear system in place for tracking payments (Sitaker et al., 2019).

According to F3HK farmers, only a few of their new CO-CSA members seemed motivated to participate by the ideals of civic agriculture, not unlike the "quintessential" CSA members described by Pole and Kumar (2015). Farmers said noncompliance with CO-CSA requirements (i.e., on-time payments and pickups) reflected a lack of understanding on the part of F3HK participants of how the model works. Abbott (2014) similarly reported farmers attributing CSA drop-outs to a lack of familiarity with the CSA model. Like many U.S. consumers, F3HK participants may have been conditioned by the mainstream food system to expect an inexpensive selection of familiar fresh fruits and vegetables that were of uniform appearance and conveniently available year-round (White et al., 2018). Further, although F3HK provided support in the form of skill-building classes, this alone could not remove the time constraint barriers and other stressors faced by low-income participants, which may have inhibited full enjoyment of the CO-CSA, as described by Morgan et al. (2018).

Further, farmers sometimes felt F3HK participants did not understand or appreciate the effort required to grow nutritious produce using sustaina-

ble methods under the typically precarious farming conditions. As reported in Samoggia, Perazzolo, Kocsis, and Del Prete (2019), engaging CSA shareholders is critical to success. A few farmers actively countered this by educating new CO-CSA members about the specific challenges of their work in newsletters, online media, and conversation. Additionally, farmers sought to build long-term, reciprocal relationships with CO-CSA members through face-to-face interactions, just as they do with other new CSA members.

Farmers were unable to say definitively whether adding a CO-CSA made a noticeable financial impact after the first year because most had not fully calculated annual farm profits at the time of the 2016 interview (this question was not addressed during the 2018 continuation planning debriefs). However, for half the participating F3HK farms, the CO-CSA represented a sizable added contribution to sales: between 6.4 and 16.6 percent. These farmers had positive things to say about the model's potential to add to farm revenue. Even for two farmers for whom F3HK participation added less than 1 percent to their revenue, CO-CSA adoption was perceived to have been worthwhile. Both were larger farms with a social justice orientation, as evidenced by their practices of accepting EBT, providing free food to local food banks, and offering supported shares to low-income families. Thus, these farmers may have been more willing to accept the risks associated with CO-CSA adoption because of their values. In this sense, they operated like social entrepreneurs, seeking to maximize their profits while also providing social and environmental benefits. This may be true of most of the F3HK farmers, whose participation was concurrently motivated by social and financial goals.

Yet the question remains: can farmers afford to be social entrepreneurs? Currently, CSA farmers operate on small margins and face increased competition from supermarkets and online retailers selling local foods (McKee, 2018). To make informed decisions about how much value a CO-CSA adds to an existing CSA business, farmers need to have accurate estimates of the associated costs compared to potential financial benefits. They also need advice on how to structure their operation to meet the needs of low-income sub-

scribers in a cost-effective manner. Thus, to inform the development of tools and resources to support CO-CSA farmers, more research is needed on both the economics and best practices of successful CO-CSAs.

Another question is whether these farmers should be expected to carry the burden of democratizing access to fresh local produce alone. While SNAP/EBT rule changes have made it easier for recipients to use their benefits to pay for a CSA, farmers that operate subsidized share programs face challenges associated with fund-raising, conducting market research, and devoting extra effort to educating and maintaining CO-CSA customers. Farmers and low-income consumers alike would benefit from community partners willing to help farmers find funding, develop outreach materials, and provide education to new subscribers on their responsibilities as CSA members. State and federal policies and programs aimed at supporting local food systems should consider adding funding for subsidized share programs. To date, little is known about methods farmers use to democratize the food system on their own (Forbes & Harmon, 2008; Hinrichs & Kremer, 2002); this area is ripe for further research, as are efforts by local non-profits, food policy collaboratives, and advocates to find ways to support farmers in meeting the twin goals of improving equitable local food access while boosting farm economic viability.

Conclusions

This study qualitatively explores the experiences of CO-CSA farmers implementing a civic agriculture DTC approach for a low-income population across different geographic regions where these programs might have differing impacts. This research builds on previous research to provide new insights on how these types of socially minded operations influence farmer operations and economic viability.

While a CO-CSA model inherently includes components of social entrepreneurship, transactions in DTC markets are economic. F3HK farmers themselves noted both values and economics as being drivers for their participation. These two characteristics can work together, but they also can clash, as farmers noted that accommodating the needs of CO-CSA members resulted in additional

tasks and resource needs. These burdens are quantifiable in terms of lost revenues due to increases in time cost and explicit loss of revenue payments. Ultimately, regardless of the balance of values versus economics, alternative agriculture markets require a match between sellers and consumers. If the match is there, both the farmer and the consumer will find satisfaction in both the value and economic proposition. This project was a test of whether these matches are possible with customers who do not traditionally participate. The answer appears to be ‘sometimes.’ Future research on a larger scale needs to examine whether there are enough customers and farmers who can make such a match work in terms of both values and economics.

The generalizability of the findings may be limited by the fact that farms implemented the CO-CSA within the context of a randomized trial; both grant funding and the low-income customers were provided by the research team. Prior research has documented time constraints, financial strain, and poor member retention to be major challenges for

many CSA farmers (Galt, 2013; Ostrom, 2007; Woods & Tropp, 2015). Thus, funds and assistance provided by the study likely alleviated some pressures and reduced the risk entailed by implementing a subsidized program. Nevertheless, most participating farmers reported that the addition of the cost-offset mechanism positively impacted their revenue, suggesting that it is beneficial to invest in resources to start a subsidized program.

If CO-CSA programs are to be financially viable for farmers, more research is needed on the economics of CO-CSAs and successful operational features in order to develop policies and infrastructure to support them. 

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