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Embeddedness, Marketness, and Economic Instrumentalism in the Oklahoma Farm-to School Program

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Abstract

U.S. farm-to-school (FTS) projects and programs promote the incorporation of locally or regionally produced food, primarily fresh fruits and vegetables, in the National School Lunch Program (NSLP), a feeding program that relies on federal reimbursements and long, industrialized supply chains. FTS encourages the formation of hybrid agrifood networks that utilize shortened supply chains. This research builds upon and expands current FTS research because it examines the experiences, motivations, practices, and perceptions of farmers in a U.S. state in which FTS is facilitated by a state law. The state's promotion of FTS has reached many Oklahoma farmers through meetings with the program administrator. Some farmers have chosen to participate, while others have not. Differences in the scale of farming operations may be important in this choice. The perspectives and experiences of Oklahoma farmers vis-à-vis the state's FTS program reveals structural incompatibilities between the NSLP and FTS programs, particularly for small-scale producers. Employing the concepts of embeddedness, marketness, and economic instrumentalism, this study analyzes Oklahoma's FTS actor networks within the overarching political economy of the NSLP. It integrates literatures from alternative agrifood geographies, the sociology of agriculture, and school nutrition. Preliminary results are presented from fieldwork conducted in fall 2011 and fall 2012. Full analyses of the data will appear in future publications.

Key words: farm-to-school programs, National School Lunch Program, Oklahoma Farm-to-School Program, embeddedness, marketness, economic instrumentalism

1.0 Introduction

The farm-to-school (FTS) movement promotes economic, social, and educational connections between farms and schools. FTS strives to provide schoolchildren with locally produced and freshly prepared fruits and vegetables at meal times, as well as food-, nutrition-, and agriculture-related lessons and activities. FTS has myriad forms, and not all involve the school cafeteria. Some projects are curricular only, such as farmer-in-the-classroom programs (Kloppenburg and Hassanein, 2006) or children's field trips to local farms. As an alternative agrifood initiative (Allen et al., 2003), FTS has two main goals: to bolster rural economies by providing a new agricultural market for small- to midscale farmers (Bellows et al., 2003; Kish, 2008a, 2008b; McDermott, 2003, 2006; Oklahoma Farm to School Program Act, 2013; Vallianatos et al., 2004) and to improve the nutritional status of schoolchildren by teaching them healthful eating habits and providing locally sourced food, prepared from scratch, at lunch and snack times and, in some schools, at breakfast (Gottlieb,

2001; Joshi et al., 2008; Joshi and Beery, 2007; Morris and Zidenberg-Cherr, 2002; Story et al., 2006). The emphasis on eating local foods incorporates the ideals of the local foods movement, which embodies widespread environmental, socioeconomic, and public-health concerns over the consumption of food shipped over great distances. Inasmuch as the FTS movement seeks to educate children about the provenance of their food and to introduce locally grown produce into their diets, FTS is related to myriad efforts to construct local food economies (McDermott, 2003; Nabhan, 2002; Pollan, 2006), typically through shorter food-supply chains (Ilbery and Maye, 2005) that more closely link consumers with producers.

This article presents partial, preliminary results and insights from an in-depth qualitative study of farmers' experiences, motivations, practices, and perceptions regarding the Oklahoma FTS Program. In Oklahoma, farm products are considered local if they have been grown within the state. While FTS, as a direct-market opportunity, might contribute to farm-household income, preliminary findings suggest that FTS may not be a significant, long-term market opportunity for Oklahoma's small-scale growers, who compose the majority of the farm population. The Economic Research Service of the U.S. Department of Agriculture (USDA) defines a small-scale farm as one with annual sales of less than $250,000, while a large-scale farm has sales greater than $250,000 (Hoppe et al., 2007). Of Oklahoma's 82,500 farms in 2007, 96% were small scale, selling less than $250,000 a year in products, with 50,300 of them having sales under $10,000 (USDA, NASS, 2008).

2.0 The National School Lunch Program and Farm-to-School Programs in the U.S.

In 2011 31 million children participated in the National School Lunch Program (NSLP) (USDA, FNS, 2013), which provides partial reimbursements for school lunches as long as they conform to USDA nutritional and meal-pattern guidelines (Poppendieck, 2010; Story et al., 2006). The reimbursements do not cover the full cost of these meals. To compensate for this shortfall, many schools sell junk foods on campus (Story et al., 2006; Wootan et al., 2007). A new reimbursement rate, established by the passage of the Healthy, Hunger-Free Kids Act (HHFKA) at the end of 2010, includes an additional six cents per meal (the first increase in 30 years [White House, 2010]), but it comes with a catch: The increase applies only to school lunches that meet new science-based dietary guidelines for meal composition (Mortazavi, 2011). The new dietary standards include, among other criteria, increases in quantity and varieties of fruits and vegetables offered, increases in offerings of whole-grain foods, and reductions in the content of saturated fat, trans fats, and sodium (Huehnergarth, 2012; Nutrition Standards in the National School Lunch and School Breakfast Programs, 2012).

Since its establishment in 1946, the NSLP has provided a market for surplus agricultural commodities (Gottlieb, 2001) by stimulating demand for them (Ralston et al., 2008). Critics of the lunch program point out that meals made of surplus commodities benefit agribusiness but have a poor nutritional profile (Levine, 2008; Mortazavi, 2011; Poppendieck, 2010). Example commodity entitlement foods include sausage patties, pizza toppings, beef crumbles, fruit pops, and chicken nuggets. School-budget limitations make USDA commodity foods a necessity, since USDA entitlement foods are provided to schools at no or low cost (Mortazavi, 2011).

FTS is a voluntary effort to improve the quality of school food. As such, the FTS movement valorizes local produce, regardless of how it is grown. In FTS programs,

farm-fresh produce does not necessarily appear on the lunch menu every day; it is usually included in recipes only when the harvest season coincides with the school year. In some schools, salad bars may feature locally grown produce along with fruits and vegetables supplied through regional or broadline distributors, who source their produce from all over the U.S. and sometimes from Mexico. Cost constraints in the NSLP mean that the bulk of the menu items served to schoolchildren remains processed commodity foods (Mortazavi, 2011). Since there is no uniform way in which FTS programs are designed and run, many differences among them exist.

3.0 The Oklahoma Farm-to-School Program

In 2006 the Oklahoma legislature established the FTS program within the Oklahoma Department of Agriculture, Food, and Forestry (ODAFF). The law provides for a director to administer the program. This full-time administrator helps growers and school districts build relationships with each other. Other administrative duties include "conducting workshops, training sessions, and technical assistance" to school food personnel, farmers, distributors, and processors to help build FTS supply chains (Oklahoma Farm to School Program Act, 2013). Individual actors in the networks must work out ways to comply with regulations concerning food handling and safety, preparation, packaging, and distribution.

The Oklahoma FTS Program distinguishes between the "statewide" program and the "direct" program, in which smaller-scale growers hope to deliver produce directly to local schools. In the statewide program, one large-scale vegetable and fruit grower and one large-scale broker of seedless watermelons transport their produce to several regional or broadline distribution companies based in Oklahoma's largest cities. These distributors then truck the fruits and vegetables to approximately 60 of Oklahoma's 540 school districts. The direct model of the state's FTS efforts has lagged in its establishment. At this writing only one small-scale grower was actively involved in selling produce on a regular basis to a local school district, while two or three other farmers had expressed interest in doing so. Some schools purchase items, such as seedlings, to be included in classroom science lessons.

4.0 Analytical Framework

Three concepts from economic sociology are useful in this examination of farmers' experiences, motivations, practices, and perceptions. The concepts of embeddedness, marketness, and economic instrumentalism have been productively applied by Hinrichs (2000) and Izumi, Wright, and Hamm (2010b) in their research on alternative agrifood networks (AAFNs). These terms are used in this article as analytical entry points for examining farmers' interactions with the Oklahoma FTS Program.

Embeddedness is a concept developed by Karl Polanyi which asserts that the economy is "subordinated to politics, religion, and social relations" (Block, 2001, xxiv). Proponents of self-regulating markets, however, strive to disembed the market from society so that it operates free of political and social pressures (Block, 2001, xxvii). Society responds to these efforts with a "protective countermovement…to resist the disembedding of the economy" (Block, 2001, xxviii). Popular discourse characterizes AAFNs as exemplifying such countermovements through efforts to nurture closer relationships between producers and consumers. Winter (2003), however, cautions that "embeddedness" should not be used in a "deterministic manner" that presumes AAFNs embody "close social and inter-personal interactions

and relations of loyalty" (p. 25). AAFNs may give rise to processes of defensive localism, in which some actors are included while others are excluded from participation (Hinrichs, 2003).

Hinrichs (2000) applies Block's concepts of marketness and economic instrumentalism as they relate to notions of embeddedness; she demonstrates "how dynamics of power and privilege continue to characterize—sometimes subtly—many direct agricultural markets" (p. 296). Block conceptualizes two types of continua to describe market relations. The continuum of marketness evaluates transactions, whereas the continuum of instrumentalism evaluates the "motives of economic actors" (Block, 1990, p. 53). In a continuum of marketness, actors decide to buy or sell a good based on price signals (Block, 1990). In the realm of agriculture, for example, high marketness implies that consideration of price dominates a farmer's decision-making process regarding whether or not to participate in a given market. Lower degrees of marketness mean that other factors related to food-provisioning activities, such as a desire to provide fresh food to schoolchildren, influence farmers' decision making.

While the continuum of marketness helps explain "the degree to which behavior is price-driven," the continuum of instrumentalism helps explain "the degree to which self-interest places economic goals ahead of friendship, family ties, spiritual considerations, or morality" (Block, 1990, p. 52). Both of these market dimensions "color and complicate social embeddedness" (Hinrichs, 2000, p. 297). As farmers participate in AAFNs, for example, they express through their behaviors, perceptions, and discourse a dynamic interplay of considerations for their community and their own economic well-being. Building a retail business for locally grown vegetables and fruit, for example, may depend on the farmer's capacity to build rapport with his or her customers. Offering fair prices to local residents while also running a viable farm business, such as a roadside stand, Community-Supported Agriculture (CSA), or a stall at a farmers' market, entails a complex regard for one's position in the community and one's need to be a savvy businessperson. To make purely instrumental business decisions might weaken social ties through the alienation of customers. Social embeddedness, then, ultimately contributes to the economic viability of the farm operation.

This research extends Hinrichs' call to "activate" (Hinrichs, 2000, p. 297) the complexity of these three social and economic dimensions in the analysis of local food systems. As will be illustrated by the selected preliminary data herein, farmers, while understanding the roles they may play in helping to alleviate childhood nutritional problems, seek to develop viable markets for their produce, which more often than not do not include the school cafeteria.

5.0 Research Problem, Research Questions, and Case-Study Selection

A growing body of literature evaluates FTS programs. Bloom and Hinrichs (2010) have studied the implications of moving locally sourced foods through existing, conventional distribution channels, while Izumi, Alaimo, and Hamm (2010) have researched the roles played by school food service professionals and Izumi, Wright, and Hamm (2010a) have reported on the role of regional food distributors. Allen and Guthman (2006), Kloppenburg and Hassanein (2006), and Morgan and Sonnino (2008) have considered the politics underpinning efforts to change procurement practices in public lunch programs. Gaps in the literature exist, particularly

comparative studies on the long-term viability of FTS participation for small-scale farmers within a variety of political-economic contexts. Whether or not FTS is economically feasible for small- to midscale farmers year over year is not known. FTS typically contributes a modest 5% to 10% of participating farmers' income (Joshi and Azuma, 2009). This modest share of income may not justify continued participation for some farmers.

This study extends and complements existing research on farmers' experiences, motivations, practices, and perceptions regarding FTS participation by expanding analysis to include not only farmers who participate in FTS but also those who do not or who have done so and then quit. Reasons given for nonparticipation reveal the ways in which FTS efforts can fail to attract farmers, particularly smaller-scale growers. Perspectives on nonparticipation point to the need to devise pathways to include all scales of farmers.

5.1 Research Questions

This study asks: (1) What experiences have Oklahoma farmers had in their FTS participation? (2) What reasons do some farmers give for not participating in FTS? (3) What patterns emerge in the size and type of farms that participate in FTS? Given Oklahoma's mixed history of both large-scale commercial agriculture and small-scale family farms, I hypothesized that large-scale growers would more likely benefit from FTS.

5.2 Case-Study Selection

The Oklahoma FTS Program is a case of a state-coordinated "top-down" approach in which a government administrator facilitates connections between individual farmers and one or more schools or school districts. This approach differs from "bottom-up" types of FTS programs in two primary ways: (1) many FTS efforts arising from the grassroots involve a wider array of actors, such as nonprofit groups, teachers, parents, and farmers, and (2) in some FTS programs, produce is aggregated from several farmers to be sold to schools. As a study of farmers' experiences in a top-down FTS program, this research serves as a paradigmatic case study that "highlight[s] more general characteristics of the societ[y] in question" (Flyvbjerg, 2001, p. 80). Such characteristics include the possibly unintended reproduction of inequality of opportunity at the local level within the political economy of a state-administered program.

6.0 Data and Methods

This study uses mail surveys, semistructured and open-ended interviews, participant observation, and archival research. Study participants include farmers and ranchers, food-services-company officials, urban and rural school food service directors, produce distributors, government officials, a nutrition educator, a local-foods buyer for a national supermarket chain, and food-system-change activists. Field trips in Oklahoma in October 2011 and 2012 yielded 52 interviews, 30 of which were with farmers or ranchers. Study participants were selected through convenience and snowball sampling.

Of the 30 farmers and ranchers, five categories of action and practice emerged: (1) they currently regularly participate in the FTS program through the sale of produce or other products to schools; (2) they have had sporadic contact with schools,

supplying inconsistent and small amounts of produce or providing educational experiences and materials to schools, and desire to continue this irregular contact; (3) they have not participated in FTS and do not desire to do so; (4) they participated and no longer do so; and (5) they are preparing to participate in FTS in the future. This article provides examples of the first, second, and fourth categories. The size of farms included in this study ranges from 0.5 acres to 1,500 acres, and annual sales range from about $5,000 to more than $250,000.

A survey mailed with a $1 inducement to farmers identified by the Poteau, Oklahoma, Kerr Center for Sustainable Agriculture as being interested in selling farm products to the public yielded a response rate of 48.7% (of 82 viable addresses, 40 farmers completed and returned the survey). Although results from the survey are not explicitly included in this article, salient themes that emerged from survey responses are reflected in the profiles of the four farmers highlighted below.

7.0 Preliminary Results

This section presents brief profiles of four study participants, to whom I have given pseudonyms. I chose to highlight these four because one is the only grower selling vegetables to the statewide program, while the remaining three reveal perspectives consonant with the perspectives of many of the other farmers and ranchers interviewed or surveyed for this research. (Further analyses of these data will appear in future publications.) The first farmer featured is the only grower of vegetables and fruit on the statewide program. The second is a suburban grower of vegetables on 1.5 acres who runs a CSA scheme and sells directly to a local school district. The third is a rural grower of fruits and vegetables on 4 acres located one to 10 miles from three villages; she sells produce seasonally to three school districts. The fourth is a farmer and rancher in a rural area who grows a variety of vegetables and fruit on 20 acres, while also pasturing 150 cows on 1,500 acres. The average age, as of late 2011, for the four growers is 54.5 years.

7.1 A Large-Scale Grower

“Jo” owns 330 acres, for which she has hired a full-time farmer with expertise in organic production methods. Jo and her farm manager produce an array of fruits, vegetables, and herbs about an hour’s drive from an urban area. In 2010 her gross farm sales were greater than $250,000. After spending years rearing her children, she took over one of her husband’s “agricultural enterprises” 12 years ago. Her farming operation has grown from 110 acres to 330 acres. Her produce is distributed, using seven regional or broadline distributors, to 60 school districts in the state. Linkages to these distributors were made by the secretary of the ODAFF during the time that FTS was launched. The FTS administrator works closely with Jo to connect her with schools.

One of her farm’s selling points is her pledge to “custom grow specific crops” for school districts. She planted a tree fruit, for example, desired by a large urban school district. Jo expressed a deep enthusiasm for being part of a program that helps improve children’s diets and teaches them about the provenance of their food. She told me, “I want to be of use to God and my fellow man.” Jo employs 21 full-time workers, of whom 14 are seasonal workers from Mexico. She also sells produce to Whole Foods supermarket and has a roadside produce stand. About 60% of her produce, including food for the FTS program, is sold to distributors. In the month prior to our interview in fall 2011 her sales to the FTS program totaled $60,000.

As a large-scale grower with a passion for the FTS program, Jo values the social aspects of participation, particularly connecting with children and school food service professionals. These social dimensions prevail over considerations of price, leading to low marketness while reflecting a strong level of embeddedness. The scale of her operations, however, reveals a high degree of economic instrumentalism, since hers is the only farm that captures payments from 60 school districts for *vegetables* sold to the statewide FTS program. Jo's capacity to capture the market for Oklahoma-grown vegetables on the statewide FTS program demonstrates the complexity of FTS dynamics. Hinrichs described this complexity when she wrote (2000, p. 296), "Social ties and personal connections in no way preclude instrumental behaviors or the relevance of price. In practice, all jostle side by side." Benefitting from economies of scale, Jo was able to overcome the high marketness faced by smaller-scale farmers who prioritize other direct agricultural markets with better prices than those offered by the NSLP.

7.2 Perspectives of Three Small-Scale Growers

A former cattle rancher from Texas, as of fall 2012 "Greg" had been farming for three and a half years. His wife's income from full-time employment contributed to the establishment of the farm. With initial farm sales under $10,000 annually in the first two and a half years, by the end of 2012 growth from FTS participation seemed likely to augment his income. From fall 2011 to fall 2012 Greg had expanded production from two to four hoop houses, while maintaining approximately 1.5 acres planted in rows of vegetables near his suburban home. For this full-time, small-scale grower, a CSA scheme was his first priority before FTS sales began to grow. His summer CSA shares cost $600 for 20 weeks' worth of fresh produce. A recipient of a cost-sharing ODAFF grant for the hoop houses and another ODAFF grant for plasticulture on the field crops, Greg will soon transition his ground to organic production. In addition to the CSA, Greg sells produce at a farmers' market and to a caterer and a restaurant.

In fall 2011 Greg said it was "premature" to think about selling produce to schools and worried that schools could not match farmers'-market prices. Predictable delivery and the mismatch between the school calendar and the growing season were additional barriers to FTS participation. Greg made other connections with local schools, however. For example, he hosted field trips for a high school environmental club. Students were tasked with hoeing crop rows. Within a year, however, conditions had become more favorable for marketing produce directly to the local school district. During that time a new school nutrition director began working with the Oklahoma FTS administrator to help Greg sell cherry tomatoes and carrots directly to the district of 25 schools. Unable to provide the district's total daily need for this produce, Greg worked out an arrangement whereby he sells enough produce for two schools at a time on a weekly, rotating basis. Greg delivers the produce to the district's warehouse. By the end of the harvest season, every school cafeteria in the district has served his produce.

Greg's case illustrates the distinction between statewide and direct types of FTS participation. Without the capacity to produce volumes adequate for the statewide program, he connected with a local school district, through the relationship-building work of the FTS administrator. The new school market has grown his farm income, and in fall 2012, school sales accounted for about 50% of his farm receipts. The price paid by the school district, however, is not as high as the price he receives in

other direct agricultural markets. Nevertheless, because Greg has scaled up his production of cherry tomatoes and carrots, his FTS participation has become economically feasible.

In a remote, hilly part of northcentral Oklahoma, "Cheryl" and her husband live on a 50-acre farm, four acres of which are in conventional production. She grows apples, melons, and vegetables and has a small vineyard. She also raises egg-laying chickens. Her husband works full time in another occupation and also works on the farm. Farming since 1992, Cheryl's annual sales are typically under $10,000. For many years her primary market for produce consisted of several regional grocery stores, but this opportunity ended when the stores went out of business. Over the last few years she has helped develop small farmers' markets in three nearby villages. "Those are going to be our main bread and butter," she said. She also sells directly to customers who stop at her farm. In 2011 she began marketing products through the Oklahoma Food Cooperative (an online marketing scheme) and wanted to expand that outlet.

Five years ago Cheryl first sold produce to three school districts within a 10-mile radius of her farm. The annual revenue from FTS sales accounts for, at most, 5% of her total income. Although FTS is "a secondary priority," Cheryl said she found it gratifying to think that schoolchildren may try new foods for the first time because of her efforts. FTS, however, has its challenges. Through trial and error, Cheryl learned which foods the schools prefer. FTS also requires her to devise new ways to communicate, since doing "PR [public relations] work" takes her out of her comfort zone. "I'm having to really work on it, organizing and getting things set up in a manner that will work for them [the schools' cooks]," she said. Although she plans to focus most of her production and marketing efforts on farmers' markets, she will continue to supply produce to these three school districts on an irregular basis. Plans to construct a high tunnel will allow her to extend her growing season for all of her market outlets.

A lifelong farmer and retired wheat breeder, "Frank" grows produce conventionally on 20 acres in a rural area near a small town; he keeps 150 head of cattle on 1,500 acres elsewhere. His gross sales in 2010 were between $50,000 and $100,000, with produce alone accounting for under $10,000. While he works full time on the farm, his wife and son work part time there. He hires four to six high school and college students for full-time summer employment. Several years ago, before the FTS statewide program was launched, Frank sold produce to a local school for about two years; those sales accounted for less than 1% of his farm income, but he valued this activity. Supportive of experiential learning in schools, Frank said that children were more likely to eat an unfamiliar vegetable if they had had a hand in planting its seed, watching it grow, and harvesting it: "[Y]ou can't expect a kid to eat something he's never seen at home." He stopped selling to this school when the school dietitian who had championed his involvement left her job. Frank no longer sells produce to schools and prefers to do business with outlets where he can command retail prices, although he sells some produce to wholesale distributors. Principal outlets for his products are farmers' markets, restaurants, and stores. At farmers' markets he sells produce and beef products. His cattle business generates most of his income.

8.0 Discussion and Preliminary Conclusions

After nine years in operation (including the two years of pilot projects), the statewide FTS program in Oklahoma involves one large-scale commercial grower of

vegetables and fruit and one large-scale farmer and broker (not featured in this article) of seedless watermelons. Both of these commercial-scale farm businesses can afford to do what smaller-scale farms cannot: They hire distributors to pick up their produce from on-farm packing sheds to deliver it to the warehouses of urban-based distributors who then bring it to participating schools and school districts. This distribution arrangement is an example of moving locally sourced food through existing, conventional distribution channels (Bloom and Hinrichs, 2010). This practice marks the Oklahoma FTS Program as a hybrid, not wholly alternative, network, since the conventional supply chains of the NSLP are still employed. Oklahoma's statewide FTS distribution network occupies a "hybrid space" (Ilbery and Maye, 2005), in which large-scale commercial growers piggyback their produce onto existing regional supply chains.

For smaller-scale growers, price considerations dominate. A high degree of marketness, then, characterizes the motivations of small- to midscale growers who primarily participate in direct agricultural markets. Pursuing their economic self-interest by selling produce to markets with better prices than those of the NSLP does not preclude, however, the importance of non-price aspects of their lives as farmers, such as relationships with customers, neighbors, fellow farmers, and family. Their economic self-interest remains tied to their capacity to sustain positive relationships with their communities and AAFNs. These farmers are already embedded in the local economies through other direct agricultural markets and voluntary interactions with schools. An FTS program is not a necessary condition for connecting farmers with schools. When faced with the signal of low prices in the NSLP, many smaller-scale growers choose to avoid regular participation in FTS.

Price and volume are major considerations for growers who cannot match their scale of production to the scale of institutional feeding programs. Without the economies of scale enjoyed by large-scale growers, smaller-scale growers do not have the luxury of prioritizing social connections, such as motivations to teach children about the provenance of their food, at the expense of making a livelihood. Although such social connections may motivate the farmer to have intermittent contact with schools, they are less important than economic goals that promote farm viability. In other words, farmers who enjoy the curricular aspects of FTS programs will participate in those *nonmarket* aspects of FTS that allow them to strengthen and nurture community ties while declining to take part in the *market* aspects of FTS, namely, selling produce to schools at prices lower than those they can command elsewhere. Smaller-scale growers are too busy striving to keep their farms afloat to choose to participate in a market—the NSLP—that offers comparatively the lowest prices available for their produce. These farmers may sell small quantities on an intermittent basis to schools not because they seek to develop this low-price market for themselves but because they care about the well-being of schoolchildren.

8.1 Structural Incompatibilities Between the NSLP and FTS

This research points to several incompatibilities between FTS efforts and the NSLP, when viewed from the perspective of small-scale production: scale, season, price, and infrastructure. These incompatibilities complicate efforts to re-embed school-food procurement into the socioeconomic fabric of communities because they give rise to high marketness and varying degrees of economic instrumentalism. Such incompatibilities create an uneven terrain of opportunity, depending on farmers'

scale of operations and their motivations and financial capacity to scale up to meet the demand of institutional food service.

1) Scale. Small-scale farmers struggle to produce enough volume to supply schools, unless the school has a small enough population to match the farmer's production output. Greg and Cheryl cited difficulty matching their volume with school needs or understanding what crops to plant for the schools. In practice, small-scale producers strive to match school size (a proxy for the number of meals needed daily) with production capacity. In contrast, Jo produces enough for 60 school districts and has the capital to expand production in the future.
2) Season. The height of vegetable and fruit production hits in the summer when most children are not in school. Greg and Cheryl hope to extend their seasons using hoop houses. Jo produces most of her volume in seasonal field crops but has several hoop houses for some produce and grows several winter crops, such as various leafy greens, for the schools.
3) Price. Schools, operating within the constraints of NSLP reimbursement rates, usually cannot offer the higher prices of farmers' markets, restaurants, the Oklahoma Food Cooperative, and CSAs. Income generated by FTS was significant for the large-scale produce grower and had become more important to Greg over time, as he strove to scale up his operations. Both of these cases appear to be exceptional, however. It is costly to have one's produce trucked to the warehouses of regional distributors. In Greg's case, he was fortunate to farm in close proximity of a school district with a newly hired nutrition director who championed FTS and offered a flexible purchasing arrangement. Although the school pays Greg less per case than he earns elsewhere, FTS becomes a viable option for him when he scales up his production. For many other small-scale producers in Oklahoma, price considerations dominate, leading to high marketness and decisions not to participate in FTS projects.
4) Infrastructure. The NSLP is characterized by a well-established, massive administrative and material infrastructure. Linkages among various actors in FTS networks, however, often are tenuous because FTS efforts largely depend on voluntary labor and/or a champion who pushes for the adoption of local-procurement practices. If key food-service individuals leave a school or an FTS network, as happened in Frank's case, the structure of the NSLP remains, while the linkages in the FTS network may break. Personnel changes at schools can erase gains that an FTS administrator and/or farmer made in building direct-purchasing relationships. Conversely, a school district's addition of a champion of local-foods procurement, as in Greg's case, can open up opportunities for local farmers.

8.2 The Value of a School Meal

The pricing structure of the NSLP makes school meals an insignificant market for many small-scale farmers, who often do not enjoy the economies of scale of large-scale production. And yet, some small-scale growers participate for social reasons. They support the re-embedding of school-food procurement in local networks, as reflected in Frank's and Greg's support of educational field experiences and Jo's and Cheryl's concerns for better childhood diets. Low prices, however, translate into a weak market opportunity for farmers. All of the small-scale farmers in this study participate in other, more lucrative, direct agricultural markets. These observations

point to the need to scrutinize the value that the government places on feeding children well, as evidenced by the low reimbursement rates offered by the NSLP and the continued tight linkages between commodity subsidies and the composition of school meals. It took 30 years, through the HHFKA, to increase the reimbursement rate for school lunch, and yet it still does not cover the full cost of meal preparation. A reorientation away from commodity supports and toward healthier school lunches would do well to devise a pricing structure that reflects the importance of fruits and vegetables in the human diet and that provides more competitive prices for fresh produce. If the inequities of the conventional agrifood system are perpetuated in FTS, as some have suggested is possible (Allen and Guthman, 2006), then new policy approaches, organizational arrangements, support structures, and mechanisms may be needed to benefit not only the schoolchildren who eat local food but also the farmers who grow it, regardless of scale.

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