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dissertation entitled

FARM TO SCHOOL PROGRAMS IN PUBLIC K-12 SCHOOLS IN THE UNITED STATES: PERSPECTIVES OF FARMERS, FOOD SERVICE PROFESSIONALS, AND FOOD DISTRIBUTORS

presented by

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has been accepted towards fulfillment
of the requirements for the

Ph.D.	degree in	Community, Agriculture, Recreation and Resource Studies

Major Professor's Signature

August 5, 2008

Date

FARM TO SCHOOL PROGRAMS IN PUBLIC K-12 SCHOOLS IN THE UNITED STATES: PERSPECTIVES OF FARMERS, FOOD SERVICE PROFESSIONALS, AND FOOD DISTRIBUTORS

By

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A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Community, Agriculture, Recreation and Resource Studies

2008

ABSTRACT

FARM TO SCHOOL PROGRAMS IN PUBLIC K-12 SCHOOLS IN THE UNITED STATES: PERSPECTIVES OF FARMERS, FOOD SERVICE PROFESSIONALS, AND FOOD DISTRIBUTORS

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The research in this dissertation was undertaken to explore the potential of farm to school programs in public K-12 schools in the United States to simultaneously improve children's diets and provide farmers with viable market opportunities. This research uses a case study approach to examine why farmers, food service professionals, and food distributors — three stakeholder groups that are critical to the institutionalization of local school food procurement — participate in farm to school programs and how they characterize the opportunities and challenges of local school food procurement. The phrase "farm to school program" is broadly used as a descriptor for national and local efforts to link schools with local agriculture. The focus of this research is on efforts to integrate locally grown food into seven school food programs in the Upper Midwest and Northeast regions of the United States. Qualitative interviews were used as the primary data collection strategy. Procurement records, menus, and other relevant documents also were collected and examined in order to cross-check findings and enhance validity of the results. Data were analyzed to identify common patterns across the cases.

The results of this research suggest that farmers, food service professionals, and food distributors have complex reasons for their involvement in farm to school programs. Their engagement can be rationalized as commercially motivated but they clearly went beyond economic instrumentalism as evidenced by non-economic values such as

community, localism, and health, which influenced their decisions to buy and sell locally grown food. The theoretical concepts of marketness, instrumentalism, and embeddedness help to explain the contradictory nature of their motivations. In addition, structural constraints that limit the integration of locally grown foods into the school food program were identified. These are broadly defined as lack of material resources, oppositional school year and agriculture production cycles, and procurement regulations.

The results of this research illustrate the complexity of farm to school programs and the need to assess their development, viability, and potential from the perspectives of stakeholders who are intimately involved in the day-to-day realities of local school food procurement.

For

Caroline Tomomi

ACKNOLWEDGEMENTS

This dissertation would not have been possible without the insights of the individuals who participated in this research and the support of many faculty and staff at Michigan State University, friends, and family. My understanding of farm to school programs benefited tremendously from the farmers, food service professionals, and food distributors who shared their experiences with me. I owe many thanks for their time and patience throughout my research. My deepest appreciation also goes to Kristen Misiak, Paul Yettaw, Marla Moss, Jayme Priest, Glenda Neff, Anupama Joshi, and Marion Kalb for sharing their knowledge and for their willingness to answer my many, and sometimes tedious, questions.

Over the past four years, I have had the good fortune to have worked with committee members who were vested in my personal and professional development. Frank Fear has been an unfailing supporter. His insights strengthened the theoretical foundation of my interdisciplinary work. I am thankful for the support of Kimberly Chung, who provided expertise in qualitative methods and helpful critique of my research. Katherine Alaimo has been both a mentor and a friend. Her thoughtful comments on my research and writing improved my work immensely. I am deeply grateful for the committed and caring mentorship of Michael Hamm, my advisor and committee chair who supported all of my research ideas and helped me focus on just one. I am thankful for the countless number of hours he spent discussing the key ideas and small details of my work.

I am grateful for the assistance of the administrative and information technology staff in the Department of Community, Agriculture, Recreation and Resource Studies for providing ongoing and last-minute support throughout my doctoral program. Thank you also to Michigan State University librarian Leslie Behm for helping me to navigate and troubleshoot EndNote at all hours of the day.

The entire C.S. Mott Group for Sustainable Food Systems supported me throughout my four years at Michigan State University. I am so thankful for their friendship and encouragement. I am especially grateful to Anne Conwell whose organizational skills I relied upon and to Colleen Matts, my sounding board and friend.

Many other friends contributed to this dissertation. Wynne Wright challenged me to enter unfamiliar territory by introducing me to new ideas. Her door was always open for me. Jennifer Wilkins supported my project from the beginning and helped me in more ways than I can count. Together with her partner Graham Kerslick, she even hosted me in their home. I am indebted to Joan Gussow who has been a long time mentor and friend. She read my dissertation from beginning to end. Her humor, practical advice, and encouragement helped me to push through to the end of this project. Kate Clancy helped broaden my thinking and reminded me to keep the bigger picture in mind. Gail Feenstra, Mamta Vardhan, Allison Loconto, Toni Liquori, Amy Paxton, Daniel Jaffee, and David Conner all provided invaluable input on my work at various stages of my research and writing and challenged me to sharpen my analysis. Jeff and Mary Jo Porter and Brian and Susan Price received me into their homes with a warm welcome. Debra Eschmeyer, Joan Tobin, and Noah Ullmann helped pull together my dissertation defense presentation. Their creativity and willingness to help on short notice earns a big thank-you.

I was fortunate to have received funding to support me in my doctoral program. Thank you to The Graduate School at Michigan State University, North Central Sustainable Agriculture Research and Education Graduate Student Grant Program, Michigan State University Agricultural Experiment Station, and the C.S. Mott Professor of Sustainable Agriculture.

My parents are my role models and instilled in me a strong sense of social justice, conviction, and ethic of care for all living things. My dad taught me how to care for a garden and the value of community from the time I was very small. I am so thankful for these early life lessons. My mom passed on to me a love for food and cooking. For as long as I can remember, I worked side by side with her in the kitchen turning whatever foods were in season into a meal. I am grateful to her for teaching me the skills and nurturing my confidence to be creative in the kitchen.

Finally, this dissertation would never have been completed without the support of my husband, Geoff Koch. He read and edited as many drafts as I wrote and enthusiastically took on all of our household chores when the going was the hardest. Geoff and our daughter Caroline Tomomi together helped me juggle the work of finishing my dissertation with my role as a new mom. I am so thankful for their infinite patience, humor, and encouragement.

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CHAPTER ONE:

INTRODUCTION

> Now if every school had a lunch program that served its students only local products that had been sustainably farmed, imagine what it would mean for agriculture. Today, twenty percent of the population of the United States is in school. If all these students were eating lunch together, consuming local, organic food, agriculture would change overnight to meet the demand. Our domestic food culture would change as well, as people again grew up learning how to cook affordable, wholesome, and delicious food.
>
> --Alice Waters (2004)

> Farm to school programs ensure that local farms will find reliable buyers for their bounty. These programs help kids develop lifelong eating habits that are the best defense against chronic illness. Good for the economy, good for kids — Farm to School legislation causes people to ask, "Why haven't we been doing this all along?"
>
> --Vermont State Senator Ginny Lyons (2008)

Farm to school programs, barely heard of a decade ago, are at the vanguard of efforts to create an alternative agriculture and food system[1] in the United States (Allen & Guthman, 2006). Like farmers' markets, community supported agriculture, fair trade, and food box schemes, farm to school programs are among the various efforts underway to remake the food and agriculture system through institutions that attempt to exist outside of dominant commodity-driven networks (Hinrichs & Lyson, 2007; Wright & Middendorf, 2007). Many of these alternative agrifood networks (AAFN) — also referred to as "alternative agrifood initiatives," (Allen, 1999) "alternative strategies," (Kirwan, 2004) and "short food supply chains" (Marsden, Banks, & Bristow, 2000) — are often described and analyzed from a systemic perspective that emphasizes links and relationships between producers and consumers (Allen, FitzSimmons, Goodman, &

[1] Hereafter, the agriculture and food system is referred to as "agrifood system."

Warner, 2003:61; Clancy, 1997; Goodman, 2003; Gussow, 2006; Hinrichs & Lyson, 2007; Kloppenburg, Hendrickson, & Stevenson, 1996; Lyson, 2004). By rebuilding linkages between individuals along the supply chain, scholars have argued that AAFNs hold the potential for movement towards a more sustainable food system. If people viewed food as more than a commodity, the reasoning goes, they might make food choices that could lead to the betterment of the agrifood system (Allen, FitzSimmons, Goodman, & Warner, 2003). Gussow (2006:9) has succinctly stated that

> "Consumers who were entirely isolated from the origins of their food could not see how their demands — for fatty meats, for exotic foods, for out of season produce — were threatening the agricultural resource base. If only they could see what went into the production of their food — which might happen...if food production were made more local — eaters might help save farmers and the planet."

Similarly, by reconnecting school food service with local agriculture, many advocates hope that farm to school programs will not only improve children's diets and provide markets for farmers, but also will change the procurement practices of school food service to reflect a more sustainable agrifood system based on notions of social justice, environmental sustainability, and economic viability (Azuma & Fisher, 2001).

The phrase "farm to school" is broadly used as a descriptor for national and local efforts to link schools with local agriculture. These efforts are highly diverse and can include one-time events, such as conferences, harvest festivals, field trips to farms, and educational visits from farmers, or on-going programs, such as school gardens and nutrition education, or even fundraisers that take advantage of locally grown products like jams, apple cider, and dried cherries. However, the "cornerstone" of farm to school programs in the United States (Allen & Guthman, 2006:413), and the focus of this dissertation, are efforts to integrate locally grown produce into school food programs.

Why study farm to school programs?

Because of its potential to address increasingly poor dietary habits among children and decreasing numbers of farms and farmers, the idea of linking school cafeterias with local agriculture has garnered the support of diverse groups of people (Allen & Guthman, 2006). Among these are farmers, anti-hunger advocates, nutrition educators, food distributors, and school food service professionals. As a result, farm to school programs in the United States are proliferating. The National Farm to School Network[2], which provides resources for starting and sustaining efforts to link farms with schools, estimates that there are now more than 1,900 farm to school programs nationwide, up from 400 in 2005 (National Farm to School Network, n.d.). It is not clear how many of these programs are integrating locally grown foods into their cafeterias or if their efforts are more modest (i.e. single events, taste tests, harvest festival) because such details have not been collected and are therefore not available. However, it is clear that the economic significance of farm to school programs are growing. For example, policy makers at both the national and local levels have passed legislation encouraging schools to buy locally grown food for their food programs. In 2002, the 1946 National School Lunch Act was amended, requiring the Secretary of Agriculture to encourage institutions participating in federal meals programs to purchase locally grown food to the maximum extent practicable (U.S. Department of Agriculture Food and Nutrition Service, 2004). Since then, many states have passed their own bills to encourage school food programs to buy locally grown food, providing further support for institutionalizing local school food procurement.

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[2] The National Farm to School Network is a collaborative effort between the Center for Food and Justice and the Community Food Security Coalition that provides technical assistance and resources to farm to school programs across the country. It was launched in 2007 with the purpose of institutionalizing farm to school programs as sustainable models for "improving the economic viability of family-scale farmers and supporting child nutrition efforts" (National Farm to School Network, n.d.).

Unlike other relatively well-studied AAFNs such as farmers' markets, farm to school programs are mostly unexamined in the academic literature. How-to manuals, short case studies, and success stories — collected primarily for purposes of advocacy, pilot evaluations, feasibility analyses, or grant funding reports — are abundant. However, much of the data used to develop these resources have been informally gathered, not fully described, and tend to only highlight the potential benefits of local school food procurement. Such uncritical endorsements obscure the complexity of farm to school programs and raise questions about their potential to transform school food procurement from a process based on price to one that reflects a more sustainable agrifood system. Why do food service professionals buy locally grown food? Why do farmers sell their food to schools? How do food distributors impact the goals of farm to school programs? How does the regulatory, institutional, and political context of school food service influence efforts to integrate locally grown food into the cafeteria? If farm to school programs are to become viable opportunities for farmers and food service professionals, critical appraisal of their potential is necessary. This dissertation was undertaken to address two specific questions: What motivates farmers, food service professionals, and food distributors to participate in farm to school programs? How do these stakeholder groups characterize the opportunities and challenges to local school food procurement?

This dissertation has several aims. First, it brings the perspectives of farmers, food service professionals, and food distributors to the discourse surrounding farm to school programs. Since these three stakeholder groups are intimately involved in the details of local school food procurement, their perspectives are important considerations in any effort to institutionalize farm to school programs. Second, it introduces a theoretical framework

for understanding why farmers, food service professionals, and food distributors participate in farm to school programs. Understanding their needs and motivations is crucial for identifying the kind of support necessary to implement sustainable models of local school food procurement. Finally, this dissertation contributes to the growing literature on AAFNs by bringing forward an analysis of an alternative agrifood system initiative that is largely shaped by its publicly funded context. The institutional, regulatory, and political context of farm to school programs makes them substantially different from other AAFNs such as farmers' markets, community supported agriculture, and fair trade.

Overview of the dissertation

Drawing upon the AAFN literature, this research took an interdisciplinary approach to studying farm to school programs. The nature of local school food procurement – influenced by everything from state and federal policies to nutrition to market realities – makes such an approach necessary. Farm to school programs will best flourish through application of theories and perspectives that cross disciplines. Given the diverse groups of individuals who are involved in efforts to link school cafeterias with local agriculture, this dissertation is organized into three manuscripts for publication in peer-reviewed journals. Together, the manuscripts speak to multiple audiences including nutrition educators, rural planners, agricultural economists, demographers, geographers, sociologists, and policy makers. Before delving into the research findings, I provide context to farm to school programs. I turn first to the emergence and development of farm to school programs in the United States. This involves a discussion of their "vertical" or structural dimensions including their institutional, regulatory, and political context (Sonnino & Marsden,

2006:189). I then describe the concepts of embeddedness, marketness, and instrumentalism as they relate to AAFNs. These concepts have been used as theoretical tools for understanding the nature of stakeholder involvement in AAFNs like farm to school programs. I conclude this chapter with a discussion of my research methods and an overview of the manuscripts in the dissertation

Emergence and development of farm to school programs in the United States

Farm to school programs emerged in the United States in the mid-1990s as a response to the lack of profitable and stable market opportunities for family farmers and increasing prevalence of childhood overweight (Azuma & Fisher, 2001). The challenges to farm profitability have evolved over the past century as the structure of agriculture in the United States has changed drastically. At the turn of the 20th century, more than one out of every three Americans lived on farms (Lobao & Meyer, 2001). The typical farm family produced a wide range of commodities, some of which were sold on the market but most which were exchanged for goods and services within the local community or used for personal consumption (Lyson, 2004). "In this social and economic context, the household, the community, and the economy were tightly bound up with one another...the economy was embedded in the social relations of the farm household and the rural community" (Lyson, 2004:8). In less than 100 years, agriculture in the United States was transformed from one of small, family owned and operated farms that produced a diversity of commodities to one in which a handful of large, industrial-scale, specialized producers control the bulk of the food produced in this country (Lyson,

2004). This trend toward concentration and consolidation in food production is reflected throughout what has become a global agrifood system (Hendrickson & Heffernan, 1999).

For farmers in the United States (and elsewhere), the capitalist development of agriculture has resulted in unstable markets for their products. As a result, many farmers have had to take what Mooney (1988), a sociologist whose work significantly influenced agricultural research in the 1980s, refers to as "detours" in order to avoid being pushed out of agriculture altogether. Examples of detours include taking on more debt, entering into contract relationships, farming part-time, or tenancy. In each instance, farmers avoid being relegated to the working class, but at the same time, they sacrifice some personal autonomy by relinquishing authority to others outside the farm — finance capital, agri-business, off-farm employers, or land owners — who dictate the terms of interaction and extract profit from the producer (Mooney, 1988). Although Mooney (1988) omitted any discussion of the role of new market opportunities or value-added agriculture, school food service markets also may function as a detour.

Farm to school programs are based on the premise that family farmers can benefit from the sizeable market of federal school food programs (Allen & Guthman, 2006). In fiscal year 2006 alone, the federal government spent more than 10 billion dollars on school meals (U.S. Department of Agriculture Food and Nutrition Service, 2007a,b). According to Allen and Guthman (2006:407) the National School Lunch Program (NSLP), which encourages "the domestic consumption of nutritious agricultural commodities and other food," has disproportionately benefited large-scale growers. Advocates have argued that by forging direct relationships with schools, small- and mid-size family farmers can benefit from school food service sales and gain access to a stable

and reliable market that will return a fair price for their product (Azuma & Fisher, 2001). To date, few studies have examined the potential of school food service to provide a viable market opportunity for farmers. One study of six organic farmers supplying food to schools in California found that income generated through school food service sales had a negligible impact on farmers' economic well-being (Ohmart, 2002). In spite of this, these farmers were motivated to continue selling their product to schools. They not only saw future economic potential in farm to school programs, but also desired to reap what they considered were the intrinsic benefits of the program — serving children healthful foods and educating children about agriculture. And anecdotal reports tend to confirm that, contrary to the rosiest projections of the program's advocates, farm to school programs are not leading to a financial windfall for participating farmers (Azuma & Fisher, 2001; Joshi & Beery, 2007). Logistical challenges such as ordering and delivering produce and financial constraints of school food service pose major barriers to farm-direct sales (Azuma & Fisher, 2001; Berkenkamp, 2006; Ohmart, 2002). Still, farm to school programs are promoted as an important opportunity for farmers (National Farm to School Program, 2007).

While finding profitable markets for small- and mid-size family farmers in America continues to be a challenge, another negative trend involving food has emerged. Since the 1960s, the prevalence of overweight among U.S. children and youth has tripled, causing policymakers to rank it as a critical public health threat (Centers for Disease Control and Prevention; Koplan, Liverman, & Kraak, 2005). The increase in childhood overweight has focused attention on the need to address children's dietary habits and physical activity patterns. Critical nutrition concerns about children's health include high

intakes of dietary fat and inadequate intakes of fiber-rich foods (Nicklas & Johnson, 2004). In addition, recent research suggests that children are not eating the recommended number of servings for fruits and vegetables needed for optimal health (Guenther, Dodd, Reedy, & Krebs-Smith, 2006).

Health professionals agree that schools can and should play a key role in improving children's health (Koplan, Liverman, & Kraak, 2005; Story, Kaphingst, & French, 2006). In 2001, 47.7 million students were enrolled in public elementary and secondary schools in the United States (National Center for Education Statistics, 2007). In addition to being a convenient focal point for reaching large numbers of the nation's youth, schools are uniquely positioned to promote healthful eating habits because children eat a large share of their daily food while they are at school (O'Toole, Anderson, Miller, & Guthrie, 2007; Story, Kaphingst, & French, 2006). And for more than 26 million students receiving free- or reduced-price lunch, school meals may be their best and sometimes only meal (Franco, 2001). Food offered at school is primarily available through reimbursable meals programs (i.e. National School Lunch and Breakfast Programs) but competitive foods are sold as à la carte items in the cafeteria, in vending machines, and in snack bars.

Farm to school programs have emerged at a time when there is growing concern about the quality of school food and increasingly tight budgets in school food service (Allen & Guthman, 2006; Story, Kaphingst, & French, 2006). Although federal meals program regulations have always included nutrition guidelines, the first School Nutrition Dietary Assessment Study (SNDA-I) revealed that in academic year (AY) 1991-92, reimbursable school lunches were not consistent with the Dietary Guidelines for

Americans (Fox, Crepinsek, Conner, & Battaglia, 2001; U.S. Department of Health and Human Services & U.S. Department of Agriculture, 2005). Several years later, the U.S. Department of Agriculture (USDA) launched the School Meals Initiative for Healthy Children to improve the nutritional quality of these meals by bringing them into compliance with the Dietary Guidelines. Since then, the quality of reimbursable meals has improved substantially, though researchers say the nutritional profile of these meals is "not yet what it should be" (Story, Kaphingst, & French, 2006:113). Of greater concern, however, is the availability of foods sold at school beyond the reimbursable school meals. These competitive foods can create an unhealthy school food environment that encourages poor eating habits (French, Story, Fulkerson, & Gerlach, 2003). Competitive foods that are available for sale alongside reimbursable meals sometimes include fruits and vegetables, but also high-sugar and high-fat items like soft drinks, chips, cookies, doughnuts, and increasingly, heavily advertised fast-food (e.g. Taco Bell, Domino's, Pizza Hut).

Budget pressures have complicated schools' efforts to improve the quality of their food programs. School food service, once included in the local school district budget, must often now be self-supporting and in addition to expenses associated with food, labor, and equipment, many school food programs also cover the cost for utilities, trash removal, rent, and building maintenance (Snyder, Lytle, Pellegrino, Anderson, & Selk, 1995; Story, Kaphingst, & French, 2006; Wagner, Senauer, & Runge, 2007). The cost of operating a school food program is covered primarily by federal subsidies and cafeteria sales. Federal subsidies include both meal reimbursements and commodities. In AY 2007-2008, schools in which less than 60 percent of lunches served in the preceding year

were served free or at a reduced price had the following reimbursement rates: $2.47 for free meals or meals served to children in families at or below 130 percent of the poverty line[3], $2.07 for reduced-price meals or meals served to children in families between 130 and 185 percent of the poverty line, and $0.23 for full-price or paid meals served to children above 185 percent of the poverty line. Schools in which more than 60 percent of lunches served in the preceding year were served free or at a reduced price had reimbursement rates of $2.49, $2.09, and $0.25 for free, reduced-price, and paid meals, respectively (Food and Nutrition Service USDA, 2007b). In addition to cash reimbursements for breakfasts and lunches served, schools participating in the National School Lunch Program also are eligible to receive $0.1875 in commodities for each lunch served (Food and Nutrition Service USDA, 2007a). About 40 percent of this combined revenue (including the value of commodities) is spent on food (Pannell-Martin Dorothy, 2007). Since participation in the school food program is not mandatory, schools need to actively market and sell as many meals as possible in order to generate the revenue needed for financial solvency. The severe budget constraints of school food service have forced many schools to serve popular but sometimes nutritionally inadequate foods that are appealing to children (Snyder, Lytle, Pellegrino, Anderson, & Selk, 1995; Story, Kaphingst, & French, 2006).

Farm to school program advocates assert that connecting children with locally grown food through the cafeteria and other program activities can "play a central role in fostering better health among students" without posing a burden on school food service budgets (Azuma & Fisher, 2001:6). According to one report, some food service

[3] The 2008 federal poverty line for a family of four residing in the 48 contiguous states and the District of Columbia is $21,200 (U.S. Department of Health and Human Services, 2008).

professionals have claimed that buying fruits and vegetables directly from local farmers allows schools to buy "fresher — and possibly more nutritious — food" than they can purchase through their broadline distributor while eliminating some of the transportation and handling costs associated with shipping food across long distances (Tropp & Olowolayemo, 2000:6). In addition, schools may have greater access to unique or highly perishable items such as Asian pears and raspberries which are typically available through broadline distributors but at a prohibitive cost (Tropp & Olowolayemo, 2000).

Few farm to school programs have assessed the impact on children's diets of integrating locally grown foods into school food programs. One report on farm to school programs in California suggest that farm-fresh salad bars are associated with higher consumption of fruits and vegetables among children (Joshi & Beery, 2007). However, it is not clear why children eat more fruits and vegetables when a salad bar is offered as an option to the hot lunch. Does product localness play a role in food choices? Other anecdotal reports also suggest that children eat more fruits and vegetables when they come from local sources and that salad bar programs stocked with farm-fresh produce have "lured students back into the school lunch program" (Tropp & Olowolayemo, 2000:7). Quantitative studies surveying school food professionals' attitudes about local school food procurement only hint at the perceived benefits of the program. For example, results from a recent survey of food service professionals in Michigan suggest that the ability to support the local economy and community through local food purchases is a key motivator for getting involved in farm to school program efforts (Izumi, Rostant, Moss, & Hamm, 2006). Increased access to higher quality and fresher foods and good public relations opportunities also were cited as important motivators.

The rhetoric of "cutting out the middleman" has been central to the economic and other benefits (e.g. agriculture literacy, nutrition, community involvement) attributed to farm to school programs. By bypassing intermediaries such as wholesalers, brokers, and food distributors, advocates have hoped that the program would simultaneously create viable markets for farmers and improve the quality of school food service. However, even the seemingly simple act of getting food from farm to school has proven problematic, emerging as a key barrier to making the program work (Allen & Guthman, 2006; Berkenkamp, 2006; Gregoire & Strohbehn, 2002; Izumi, Rostant, Moss, & Hamm, 2006). As a result, the farm-direct-to-school model has evolved to include a variety of intermediaries. These include alternative distributors that buy and sell produce grown by family farmers, such as Red Tomato(Red Tomato, n.d.), as well as dominant school food service distributors, such as Gordon Food Service and Systems and Services Company (SYSCO). Such market intermediaries play an important role in institutionalizing local school food procurement. However, advocates have questioned how the involvement of distributors influences the programs' potential to change school food procurement practices to reflect a more sustainable agrifood system (Ohmart & Markley, 2007). In the following section, I provide a theoretical framework for analyzing the nature of stakeholder involvement in AAFNs like farm to school.

Embeddedness, marketness, and instrumentalism: A theoretical framework for studying farm to school programs

The notion of embeddedness has been widely used to understand the nature of AAFNs like farmers' markets (Hinrichs, 2000; Kirwan, 2004; Winter, 2003) and

community supported agriculture (Hinrichs, 2000), as well as certification schemes associated with fair trade (Jaffee, 2007), label of origin systems (Barham, 2003), and food production processes (Higgins, Dibden, & Cocklin, 2008). "Embeddedness expresses the idea that the economy is not autonomous as assumed in self-regulating markets, but subordinated to politics, religion, and social relations" (Block, 2001:xxiii). The origin of this idea can be traced back to Polanyi's ([1944] 2001) critique of the market economy. He argued that throughout history, economies have always been embedded within the social fabric of our societies. However, as our societies became increasingly subordinated to the demands of capital, the market became increasingly disembedded from society. Polanyi ([1944] 2001) argued that if left unchecked, this would lead to the annihilation of society.

> "For the alleged commodity 'labor power' cannot be shoved about...In disposing of a man's labor power the system would, incidentally, dispose of the physical, psychological, moral entity 'man' attached to that tag...Nature would be reduced to its elements, neighborhoods and landscapes defiled, rivers polluted, military safety jeopardized, the power to produce food and raw materials destroyed..." (Polanyi, [1944] 2001:76).

The logic underlying this argument is based on Polanyi's distinction between real and fictitious commodities. From his perspective, commodities are those things that have been produced for sale. Land (i.e. nature), labor (i.e. human activity), and money are therefore, by definition, fictitious commodities. The market economy expects these fictitious commodities to behave in the same way as real commodities. However, as Polanyi ([1944] 2001) and others have argued, efforts to disembed the economy from society inevitably encounter resistance. In other words, as the destructive consequences of an unencumbered market become apparent, people will fight back, the state will

intervene and the economy will swing back towards a more embedded position (Polanyi, [1944] 2001).

Various scholars have drawn on Polanyi's ([1944] 2001) critique of the market economy, particularly the centrality of price, to understand the nature of economic transactions in AAFNs. The proliferation of these networks in both the United States and abroad has captured the attention of scholars from diverse disciplines who see the transformative potential of these organizational forms as well as their potential to serve as engines of rural development (Goodman, 2003; Holloway & Kneafsey, 2000; Jaffee, 2007; Kirwan, 2004; Kloppenburg, Hendrickson, & Stevenson, 1996; Lyson, 2004; Marsden, Banks, & Bristow, 2000; Wright & Middendorf, 2007).

AAFNs are based on the purposeful incorporation (or re-embedding) of social, environmental, equity, and health issues into the production and consumption of food (Kirwan, 2004). In this context, embeddedness refers to the values (e.g. community, environment, health) and non-price variables (e.g. equity, localness, quality) that influence economic transactions. Scholars have argued that if communicated to the consumer, these issues have the potential to create a comparative advantage in the marketplace (Kirwan, 2004; Marsden, Banks, & Bristow, 2000). "The successful translation of this information allows products to be differentiated from more anonymous commodities and potentially to command a premium price if the encoded or embedded information is considered valuable" (Marsden, Banks, & Bristow, 2000:425). It also allows consumers to evaluate the claims made (e.g. organic, fair trade, rBGH-free) and act based on the information provided (Dupuis, 2000). For example, some consumers shopping at the farmers' market may be willing to pay more for vegetables grown by

people they know and trust. Others may be willing to pay a premium price for fair trade coffee so that coffee producers can be fairly compensated for their labor.

AAFNs emphasize the role of the producer-consumer relationship in constructing value and meaning of a product. These relationships are mediated through face-to-face interactions (e.g. farmers' markets), proximate networks that involve intermediaries who buy and sell food within a specific region (e.g. dedicated retail stores), and extended AAFNs that rely on standards and certification schemes (e.g. Parmigiano Reggiano cheese) (Marsden, Banks, & Bristow, 2000; Renting, Marsden, & Banks, 2003).With AAFNs

> "...it is not the number of times a product is handled or the distance over which it is ultimately transported which is necessarily critical, but the fact that the product reaches the consumer embedded with information...It is this, which enables the consumer to make connections and associations with the place/space of production, and, potentially, the values of the people involve and the production methods employed" (Marsden, Banks, & Bristow, 2000:425).

While embeddedness has proven to be a useful analytical tool, various scholars have warned against its often one-sided application, which has led to the tendency to romanticize AAFNs (Born & Purcell, 2006; Goodman, 2004; Hinrichs, 2000; Winter, 2003). In her analysis of farmers' markets and community supported agriculture, Hinrichs (2000) offers a corrective to the sometimes overly simplistic or optimistic readings of direct agricultural markets by qualifying embeddedness. She does so using the concepts of marketness and instrumentalism to more accurately capture the nature of economic transactions in these networks.

> "High marketness means that there is nothing to interfere with the dominance of price considerations, but as one moves down the continuum to lower levels of marketness, non-price considerations take on greater importance. It is not as though prices are irrelevant under conditions of low

> marketness, it is just that they compete with other variables, so that one would expect price differences to be much larger before they lead actors to respond" (Block, 1990:51).

Instrumentalism supplements marketness and is useful for evaluating the motives of economic actors (Block, 1990). While marketness measures the strength of price signals, instrumentalism analyzes the extent to which individual economic gain plays into economic transactions. At one end of the continuum, behavior is motivated purely by economic self-interest. However, as one moves down the spectrum to lower levels of instrumentalism, behavior is influenced by variables such as community, family, and morality. It is important to note that although the concepts of marketness and instrumentalism are closely related, high levels of marketness do not always correspond to high levels of instrumentalism or vice versa. As Block (1990:54) notes, "individuals can pursue their economic self-interest in ways that have nothing to do with price." For example, a farmer may give schools a price-break for his product (low marketness) with the hope that he will be awarded future sales (high instrumentalism) or that the diet of children will improve (low instrumentalism). The latter provides an example of the power of non-price variables in economic transactions. Such non-opportunistic behavior is considered evidence of embeddedness (Block, 1990).

The concepts of embeddedness, marketness, and instrumentalism apply to farm to school programs, which are loaded with examples of non-price considerations — supporting the community, providing equitable payments to farmers, promoting health, and so on. However, the few studies that have probed farmers' and food service professionals' motivations to buy and sell locally grown food make clear that the short- and long-term economic potential of these programs also are important considerations.

Integrating the tensions between embeddedness, marketness, and instrumentalism into the farm to school program discourse is critical for analyzing these efforts.

Equally important as farm to school programs proliferate is considering how stakeholders negotiate these tensions within the context of the wider regulatory, institutional, and political school food environment. Scholars have argued that

> "if we want to understand how alternative food networks are built, shaped, and reproduced over time and space and whether or not this process is realistically contributing to a new rural development paradigm, the development of these networks must be analyzed at two different, but strongly interrelated, levels" (Sonnino & Marsden, 2006:189).

Thus, the embeddedness of AAFNs should be assessed at the "horizontal" level, which considers local conditions and agency, and at the "vertical" level, which involves larger society, economy, and polity (Sonnino & Marsden, 2006:189).

Although they do not preempt federal law, which prohibits the use of geographic preferences when evaluating bids for the school food program, these new state laws are evidence of the groundswell of political support around farm to school. At this level, state lines have been used as boundaries for what is considered "local." For example, in Kentucky, state agencies must purchase Kentucky-grown agricultural product if price and quality are equal (Kentucky Legislature, 2006). And in Massachusetts, school districts are allowed to use a 10 percent price preference above the lowest bid to buy Massachusetts-grown product (Commonwealth of Massachusetts, 2006).

Farm to school programs are at a critical juncture in their development. As political support has grown, the focus of the effort to institutionalize farm to school programs has shifted from "local" as a means to an end (e.g. to provide stable, reliable, fair markets for independent farmers) to an end in itself. As various scholars have

asserted, there is nothing inherently virtuous about the local scale (Allen, FitzSimmons, Goodman, & Warner, 2003; Bellows & Hamm, 2001; Born & Purcell, 2006). The outcomes of alternative agrifood efforts that are focused on relocalizing the food system can have both good and bad outcomes that depend on the agendas of actors who take advantage of such scalar strategies (Born & Purcell, 2006). For example, national corporations like SYSCO have already begun tapping into the niche farm to school program market through its Buy Local, Sell Fresh campaign. However, a recent study of the potential role of SYSCO in relocalizing the food system suggests that notions of embeddedness are largely absent from this campaign (Kennedy, 2007). Jaffee (2007) has similarly questioned the degree to which products that travel relatively long distances through complex commodity chains can remain embedded. Without qualifying "local" with non-economic values such as community and equitable payments to farmers, farm to school programs become vulnerable to cooptation by individuals and corporations that want to appropriate the symbolic meanings associated with locally grown food. Yet the involvement of intermediaries in farm to school is not automatically undesirable, and in fact, distributors are critical to the program's long-term success. The central question is, what types of intermediaries can help to facilitate the integration of locally grown foods into the cafeteria without compromising the values that undergird these efforts?

Methods

This study used a case study approach and qualitative methods. Research participants were recruited from seven farm to school programs in the Upper Midwest and Northeast regions of the United States between January and April 2006. Farm to

school programs were selected through maximum variation sampling, a purposeful sampling technique aimed at capturing the central themes that emerge from diverse cases (Patton, 2002). This was the most appropriate sampling technique because I was interested in common patterns across farm to school programs. Given the site specificity of farm to school programs, common themes are of particular interest in describing their core experiences. This nonrandom sampling technique also was appropriate because the purpose of this research was to understand the complexity of individual farm to school programs and not to generalize findings. The Upper Midwest and Northeast regions of the United States were selected as the geographic boundaries of our study to capture a variety of distribution strategies for local school food procurement, within an area that is climatologically similar. States in which the programs are located are not revealed to protect the identities of the research participants. To maximize the variation of farm to school programs in this study, I identified diverse characteristics or criteria for constructing my sample of farm to school programs — region (Upper Midwest or Northeast), site (i.e. rural, suburban, urban), student populations, free- and reduced lunch participation rate, number of schools, central receiving, and distribution strategy (i.e. farm-direct-to-school, wholesaler-to-school, distributor-to-school). In addition, I was interested in the perspectives of those school districts that had been integrating locally grown foods into their school food programs as a regular part of their food procurement routine for at least two years, a length of time I felt would allow stakeholders to articulate the opportunities and challenges to local school food procurement. I shared my criteria with two key informants — both state-level farm to school program advocates — who identified eight programs. I contacted the food service professional responsible for local

food procurement at all eight programs to request their participation in my study. One food service professional did not return my phone calls. Food service professionals at seven school districts were invited to participate in my study as were the farmers and food distributors they identified as sources for locally grown food. Seven food service professionals, seven farmers, and four food distributors participated in the study. A sampling frame (Table 6-1) that captures the diversity of my sample is included in Appendix A.

This study was approved through the Human Research Protection Program at Michigan State University (#X05-886). For confidentiality, pseudonyms are used to identify the research participants and all distinguishing characteristics are veiled to protect their identities.

Data collection

In-depth interviews were used as the primary data collection strategy in order to adequately capture the nature of participants' experiences. Procurement documents and menus also were collected and examined in order to cross-check findings and enhance validity of the results. In addition, newsletters, handbooks, government reports, and other such documents were used to provide additional context for the individual cases and to situate each program within the broader national farm to school program effort.

Each research participant was interviewed twice. The first interview was conducted between January and April 2006 and a follow-up interview was conducted between March and April 2007. The purpose of the first interview was two-fold. First, I wanted to gain insight into the day-to-day reality of participants that is unavailable in the

existing literature. Second, I wanted to explore the nature of participants' involvement in their respective farm to school program. The purpose of the second interview was to follow-up on themes, concepts, and processes that emerged during the first interview. Before beginning the first interview, each research participant was given an informed consent document that they read and signed to indicate their voluntary participation in the study (Appendix B). The document described the purpose of the research, explained how the individual's privacy would be protected, and the risks associated with participating in the study. In addition, my contact information and the contact information for the board chair of the University Committee on Research Involving Human Subjects was provided. At the beginning of the second interview, each research participant was given a photo release form that they signed authorizing me to take digital photographs of their business.

All interviews were tape recorded and transcribed verbatim. Semi-structured interview guides were used to ensure that all questions that were important to the research were covered and to accommodate the limited amount of time with each of the participants (Appendix C). The interview guide was an evolving document and was revised regularly to reflect new themes that emerged from the interviews. Although an interview guide was used to maintain control of the interview, the order in which questions were asked and the flow of the interview was flexible. Probes and follow-up question were asked to elicit depth of information and to follow-up on leads initiated by the participants. The interviews lasted between 30 and 90 minutes and took place in research participants' offices, although some questions were asked on tours of their workplaces. These tours were invaluable for providing context to the participants' interview responses.

Data analysis

The data were analyzed in two stages. In the early stages of the study, while data were still being collected, memos were written after each data collection. The purpose of the memos was to systematically summarize the interview immediately after a contact and to capture early interpretations (Miles & Huberman, 1994). In addition, emerging themes and concepts were identified and codes were created. The codes were defined operationally and organized into a code dictionary that included the code name, definition, rule, and example for when each code should be applied. After interview transcripts were coded, they were cross-checked by another researcher. Coding was an iterative process. New codes progressively emerged during the analysis and those that were no longer appropriate were discarded while others were broken down into sub-codes or refined. When major code changes were made, data that had already been coded were recoded with a revised dictionary. The final code dictionary (Table 6-2) is included in Appendix D.

After all of the interviews were coded a series of displays for drawing and verifying conclusions about the data were developed (Appendix E). Displays allow researchers to reduce their data and systematically organize answers to their research questions (Miles & Huberman, 1994). Displays increase the chance of drawing and verifying valid conclusions because they are arranged coherently to allow for careful comparisons within and across cases (Miles & Huberman, 1994). The data were analyzed by stakeholder group. For food service professionals, seven codes related to their motivations for buying locally grown food for their cafeterias were identified: Food Quality, School Staff Support for Farm to School Program, Relationships (children/food service staff and farmer), Competitive Price, Flexible Specifications, Support Local Economy or Community, Food Education. The

passages associated with these codes were extracted from each interview transcript. The codes and passages were categorized into the following three themes: (1) The students like it, (2) The price is right, and (3) We're helping our local farmer. The codes, passages, and themes were compared across the seven food service professionals and organized into a conceptually clustered matrix that included themes (columns) and school food service professionals (rows) (Table 6-3). For each cell, a quotation or summary phrase was first entered to indicate the relevance of the theme for each food service professional. The data in the display were further reduced by using acronyms to indicate codes. Conclusions were drawn about each case and across cases by reading down the columns and across rows. This process of extracting and comparing codes, passages, and themes to draw conclusions about the data was repeated for food distributors and farmers.

For food distributors, a conceptually clustered matrix of their perspectives about farm to school programs was created (Table 6-4). The matrix is a birds-eye view of the four distributors and captures key themes including their motivations for buying and selling locally grown food, their characterization of the challenges associated with local school food procurement, and the nature of their relationships with farmers. In addition, the matrix allows for comparison between the four food distributors. Six codes related to the food distributors' motivations for buying and selling locally grown food were identified: Convenient Location, Defensive Localism, Support Local Economy or Community, Future Customer, Food Quality, Freight Savings. Five codes related to their characterization of the challenges associated with local school food procurement were identified: Low Volumes, USDA Commodity Programs, Distribution, School Year, Budget Constraints.

The conceptually clustered matrix for farmers draws out three key themes: (1) Market Potential, (2) Ancillary Motives, and (3) Challenges (Table 6-5). Four codes that illustrate farmers' perspective of the market potential of school food service sales were identified: Convenient Location, Fair Price, Future Customer, Market Diversification. Ancillary motivations that emerged during interviews with farmers were Child Nutrition, Support Local Economy or Community, and Defensive Localism. Finally, five codes that described farmers' perspectives of the challenges associated with local school food procurement were identified: Bidding Process, USDA Community Programs, School Year, Low Volumes, and School Food Budget Constraints.

Transcribed interviews, memos, and feedback from research participants and colleagues were used to verify my conclusions. Atlas.ti 5.2 (Atlas.ti 5.2, Scientific Software Development GmbH, Berlin), a qualitative data analysis software package, was used to code the data, organize memos, and note patterns and themes. Data displays were created by hand.

Overview of the chapters

Each of the following chapters focuses on the perspectives of farmers, food service professionals, or food distributors. The findings are organized by stakeholder group to capture the influence of social location on the opportunities and challenges of local school food procurement. The chapters are written for publication in journals and follow specific style requirements.

Chapter two focuses on the perspectives of farmers and the potential of school food service to provide them with a viable market opportunity. This chapter begins with a

review of the theoretical and empirical complexity of AAFNs by highlighting the blurred boundaries between their more or less conventional and alternative characteristics and how they interact with their wider environment. Since the audience for this manuscript includes rural planners, agricultural economists, and sociologists who may not be familiar with the structural complexity of school food service, I provide an overview of the political, regulatory, and institutional forces that have shaped the emergence and development of farm to school programs in the United States. The interactions between the horizontal and vertical dimensions of farm to school programs help to explain the potential of school food service to provide farmers with a fair market for their products.

Chapter three describes food service professionals' motivations to buy locally grown food for their cafeterias. Food service professionals across the country have shown a high degree of interest in farm to school programs (Izumi, Rostant, Moss, & Hamm, 2006; National Farm to School Program, 2007). However, they work under intense time and budget constraints that can make local school food procurement a daunting task (Berkenkamp, 2006). The perspectives of the food service professionals profiled in this dissertation provide insight into why they buy locally grown food for their cafeterias as well as some of the trade-offs of different local food procurement strategies. As gatekeepers of school food service, their perspectives are critical to the long-term success of farm to school programs. The audience for this manuscript is readers of the *Journal of Nutrition Education and Behavior*. The term "embeddedness" is not used in chapter three due to page limitations of the journal that prevent its full explication. However, the non-price considerations that the food service professionals discussed are illustrated in detail. This chapter does not address the challenges of local school food procurement because

those identified by the food service professionals who participated in this research did not provide additional depth to food service professionals' concerns that have already been identified in the literature (Berkenkamp, 2006; Gregoire & Strohbehn, 2002; Izumi, Rostant, Moss, & Hamm, 2006).

Chapter four focuses on the perspectives of regionally-based mid-tier food distributors. As schools have sought to increase the scale and scope of their farm to school program efforts, such intermediaries have become necessary and important stakeholders. Although advocates have recognized the need for food distributors, serious questions about the involvement of more conventional intermediaries have been raised. This manuscript is intended for audiences that span the humanities, social sciences, food and nutrition studies, and agriculture. Although regionally-based mid-tier food distributors have received little attention from farm to school program academics and activists, these food distributors-in-the-middle may play an important role in enabling advocates to achieve their goals due to the relationships they already have with farmers.

Each chapter in this dissertation focuses on one stakeholder group and can be read as a stand alone manuscript. As a whole, this dissertation provides new insights into the opportunities and challenges of farm to school programs. In chapter five, I summarize the findings of each chapter but focus on broad implications of the stakeholders' perspectives. Specifically, I return to the structural constraints that limit the integration of locally grown foods into school food programs and offer recommendations for strengthening the potential of local school food procurement to improve farmers' livelihoods and children's health. Finally, I suggest areas for future research and practice.

CHAPTER TWO:

PERSPECTIVES OF FARMERS

> I think education is the best way we can sustain ourselves. We need to make them aware that food doesn't come from a grocery store. It comes from a farm and a grower that works tirelessly to get that food out there.
> --J.D. Rinehart (2008)

Introduction

Activists and academics across Europe and the United States increasingly are advocating for public procurement of locally grown food as a key market opportunity for small- and mid-size family farmers (Allen & Guthman, 2006; Kloppenburg & Hassanein, 2006; Morgan & Morley, 2002; Morgan & Sonnino, 2007; Watts, Ilbery, & Maye, 2005). Watts, Ilbery and Maye (2005:35) for example, have noted that the "beneficial impacts of this could be pronounced in lagging regions, where public sector buying power can have a significant impact on economic activity." Public K-12 schools are prominent among the institutions that have the potential to provide a significant boost to rural economies (Morgan & Morley, 2002; Morgan & Sonnino, 2007; Tropp & Olowolayemo, 2000; Vallianatos, Gottlieb, & Haase, 2004). In fiscal year 2006, the U.S. Department of Agriculture (USDA) spent $8.2 billion on the National School Lunch Program (NSLP), a federally assisted meal program operating in public and non-profit private schools as well as childcare institutions (U.S. Department of Agriculture Food and Nutrition Service, 2007a). This represents a "potentially huge" and relatively untapped market for farmers who could sell their product directly to schools (Vallianatos, Gottlieb, & Haase, 2004:415). Advocates assert that in addition to providing new market opportunities for

farmers, these "farm to school" programs can help curb the epidemic of childhood overweight by increasing children's access to fresh fruits and vegetables (Azuma & Fisher, 2001).

"Farm to school program" is a broad term that has been used to describe efforts that link schools with local agriculture. These efforts are diverse and include a range of activities such as harvest festivals, field trips to farms, school gardens, and educational visits from farmers. Integrating locally grown food into the school food program (also known as "farm to cafeteria") has been described as the "cornerstone" of farm to school programs (Allen & Guthman, 2006:413) and appears to hold the greatest short- and long-term potential to contribute to farmers' incomes.

Farm to school programs have widely been framed as a market opportunity for farmers, yet few studies have examined the impact of school food service sales on farmers' incomes. One study of six organic farmers supplying produce to schools in California (Ohmart, 2002) found that revenue generated through school food service sales had a negligible impact on farmers' incomes. However, the economic potential of these programs was of secondary importance to these farmers; they were primarily motivated to participate for philosophical reasons. Serving children healthful foods and educating them about agriculture were intrinsic benefits they derived from selling their product to school food service.

Farm to school program rhetoric reflects the antinomy between the local and global observed in the AAFN literature. In one of the earliest reports that focus on these efforts, Azuma and Fisher (2001) wrote that:

> "Local and regional farmers require profitable and stable markets for their products. Prices that farmers receive for many commodities have dropped

> appreciably in recent years. Globalization and concentration in agri-business have also reduced access to markets, and resulted in unfair prices offered to family farmers" (Azuma & Fisher, 2001:Executive Summary).

In the last decade, scholarly interest in the potential role of AAFNs in rural development has grown. At their heart, AAFNs are considered new modes of food provisioning that reconnect producers with consumers and short-circuits characteristics (e.g. standardized, intensive, disembedded) associated with more industrial and conventional food systems (Ilbery & Maye, 2005; Marsden, Banks, & Bristow, 2000; Renting, Marsden, & Banks, 2003). These networks are considered one of the "key dimensions of new rural development patterns now emerging" (Renting, Marsden, & Banks, 2003:393; van der Ploeg et al., 2000). According to Marsden et al. (2000) they can engender new relationships between producers and consumers that "allow products to be differentiated from more anonymous commodities and potentially to command a premium price" (Marsden, Banks, & Bristow, 2000:425).

Like other AAFNs, farm to school programs emphasize factors other than price, such as product localness, environmental benefits (e.g. decreased food miles, sustainable production practices), long-term relationships, agriculture literacy, and equitable payments to farmers (Azuma & Fisher, 2001). According to advocates, sales to school food service can provide family farmers — who face stern competition from what has become a globalized food and agriculture system — with new and stable markets and an important source of income generation (Azuma & Fisher, 2001; Tropp & Olowolayemo, 2000). In this way, school markets can function as a "detour" to the capitalist development of agriculture. Mooney (1988) has shown that there are a number of detours that can be taken by farmers in an effort to avoid being pushed out of agriculture by

larger structural forces. Examples include taking on more debt, entering into contract relations, part-time farming, or tenancy. In each relation, farmers avoid proletarianization but at the same time, they sacrifice some personal autonomy by relinquishing authority to others outside the farm (e.g. finance capital, agri-business, off-farm employers, land owners) who dictate the terms of interaction and extract profit (Mooney, 1988). Mooney's (1988) work significantly influenced agricultural sociological research in the 1980s, yet he omitted any discussion of the role of new market opportunities or value-added agriculture as ways to further avoid capitalist penetration of agriculture. By forming direct, embedded relationships with schools, advocates have argued that farmers can capture higher returns for their products and thus serve as a means to preserve family farming (Azuma & Fisher, 2001).

Given growing support for and rapid proliferation of farm to school programs over the past decade, an in-depth analysis of farmers' perspectives of these programs is both timely and critical. As Allen (2004) has pointed out, this type of analysis is important for enabling alternative agrifood efforts like farm to school programs to accomplish their goals and minimize unintended or potentially contradictory outcomes. The AAFN literature has a number of conceptual parallels with farm to school programs and therefore provides a lens through which to understand farmers' involvement in these efforts.

This paper is divided into four sections. First, we begin by providing an overview of the recent literature on the hybridity of AAFNs. We then discuss the complex political, regulatory, and institutional forces that have shaped the development of farm to school programs in the United States. Third, using interview data from farmers participating in

one of seven farm to school programs in the Upper Midwest and Northeast regions of the United States, we examine the nature of farmers' motivation to sell their product to schools as well as the potential of school food service sales to provide a stable market for farmers. Our findings reveal a tension between farmers' desire for autonomy and economic profitability. In addition, the potential of farm to school programs to contribute to farmers' incomes is limited by the structural context of school food service. We conclude with a discussion of the hybridity of farm to school programs and its theoretical and practical implications.

The hybrid nature of alternative agrifood networks

The notion of embeddedness has been used as a tool to understand the nature of AAFNs and their potential to contribute to rural development. Its origins trace back to Polanyi ([1944] 2001) who argued that markets have always been embedded in the social and cultural fabric of our societies. However, as our societies became increasingly subordinated to the demands of capital, the market became increasingly disembedded from society. Polanyi ([1944] 2001) argued that the goal of disembedded, fully self-regulating market economies is a utopian project that has never existed and never will exist; as its destructive consequences become apparent, people will resist and economies will swing back towards a more embedded position. "The term 'embeddedness' expresses the idea that the economy is not autonomous, as it must be in economic theory, but subordinated to politics, religion, and social relations" (Block, 2001:xxiii).

Various scholars have used embeddedness to distinguish AAFNs from their more conventional counterparts. AAFNs are based on the purposive incorporation (or re-

embedding) of social, environmental, equity, and health issues into the production and consumption of food (Kirwan, 2004). In this context, embeddedness refers to the values (e.g. community, environment, health) and non-price variables (e.g. equity, localness, quality) that influence economic transactions. Scholars have argued that the value of the social and local embeddedness of production, if successfully communicated to the consumer, allows products to be differentiated from more anonymous commodities which gives them a comparative advantage in the marketplace (Kirwan, 2004; Marsden, Banks, & Bristow, 2000). AAFNs emphasize the role of the producer-consumer relationship in constructing value and meaning of the product. Through face-to-face interactions as well as more extended relations, scholars have argued that AAFNs can engender relationships between producers and consumers that are based on notions of trust, community, and regard (Holloway & Kneafsey, 2000; Kirwan, 2004; Sage, 2003; Winter, 2003).

Although embeddedness has been a useful tool to conceptualize the nature of AAFNs, its emphasis in the literature often has resulted in overly sanguine interpretations of local economic relations (Goodman, 2004; Hinrichs, 2000; Sonnino & Marsden, 2006). Hinrichs (2000) offers a counter-perspective by revealing tensions between embeddedness and economic self-interest in her analysis of farmers' markets and community supported agriculture, two AAFNs that are assumed to be built upon notions of trust and social connection between producers and consumers. Building on Block (1990), she draws on the continuums of marketness and instrumentalism to more accurately describe the nature of these economic transactions (Hinrichs, 2000).

> "High marketness means that there is nothing to interfere with the dominance of price considerations, but as one moves down the continuum

> to lower levels of marketness, non-price considerations take on greater importance. It is not as though prices are irrelevant under conditions of low marketness, it is just that they compete with other variables, so that one would expect price differences to be much larger before they lead actors to respond" (Block, 1990:51).

At the lower end of the spectrum then, price may compete with other variables such as social relations, quality, product localness, and attributes such as organic or fair trade.

The notion of instrumentalism supplements marketness and is useful for evaluating the motives of economic actors (Block, 1990). At one end of the continuum, behavior is motivated purely by economic self-interest. However, as one moves down the spectrum to lower levels of instrumentalism, behavior is influenced by variables such as friendship, family, and morality. Together, these two concepts — marketness and instrumentalism — form a "conceptual shadow" to embeddedness (Hinrichs, 2000:297). As the importance of price decreases (low marketness), economic behavior tends to become more embedded in non-price considerations (low instrumentalism). High marketness, however, is not always associated with high instrumentalism and vice versa. As noted by Block (1990), individuals can pursue their economic self-interest in ways that have nothing to do with price. For example, a farmer may donate his product to a school (low marketness) with the hope that he will be awarded a future contract (high instrumentalism) or that the diets of children will be improved (low instrumentalism).

Recent analysis and theorization of AAFNs has added complexity to the role of such networks in rural development by highlighting tensions between embeddedness, marketness, and instrumentalism, and the blurred boundaries between their more or less conventional and alternative characteristics (Goodman, 2004; Higgins, Dibden, & Cocklin, 2008; Ilbery & Maye, 2005; Sonnino & Marsden, 2006). It has become

increasingly clear that the distinctions between alternative and conventional agrifood systems are blurred and that farmers are likely to incorporate both into their production and marketing strategies (Goodman, 2004; Higgins, Dibden, & Cocklin, 2008; Ilbery & Maye, 2005; Maye & Ilbery, 2006; Murdoch, Marsden, & Banks, 2000; Sonnino & Marsden, 2006; Watts, Ilbery, & Maye, 2005). Instead of representing a shift in values and attitudes, AAFNs may be a pragmatic reflection of farmers' need to spread their risk across many different types of markets (Goodman, 2004) or to take "detours" to avoid being pushed out of agriculture (Mooney, 1988).

Ilbery and Maye (2005:826) suggest that many, perhaps most, small-scale, alternative operators will not be able to rely solely upon AAFNs and that "economic imperatives will lead to a mixing of alternative (short) and conventional (long) chains" or in other words, a hybridized strategy. For example, in their analysis of specialty livestock products in the Scottish-English borders, Ilbery and Maye (2005) found that in order to survive economically, alternative livestock producers often have to "dip into" more conventional markets by selling to processors and wholesalers. In another study, Higgins et al. (2008) emphasize that some beef farmers pursue Environmental Management Systems, a process-based environmental certification, as one of their many strategies for marketing their product and increasing farm income. Furthermore, they indicate that while certification has allowed some early adopters to extract a premium for their product through niche markets, this financial benefit may disappear in the future if such practices become widely adopted. This finding suggests that the value added by AAFNs may be temporal in nature and therefore unsustainable, supporting the need for a broad "repertoire of rural survival strategies" (Goodman, 2004:12).

Scholars also have called for a more holistic approach to embeddedness that integrates the "wider institutional and governance system in which alternative food systems carve and maintain their space" (Sonnino & Marsden, 2006:190-191). For example, government funding and encouragement, future environmental regulations, and community expectations prompted the development of the Environmental Management Systems certification described above (Higgins, Dibden, & Cocklin, 2008).

Similarly, in a study of the evolution of three efforts to pursue certification for regional food products, Tregear, Arfini, Belleti and Marescotti (2007) found that socioeconomic context and institutional involvement played key roles in shaping the development of food qualification schemes. Factors such as the agricultural history of the region, diversity of producers, and cultural significance of the product had complex impacts on the type of qualification strategies that were pursued. Local institutions influenced the rural development potential of qualification schemes through their involvement in defining and promoting the qualification (Tregear, Arfini, Belletti, & Marescotti, 2007).

In order to understand the potential impact of farm to school programs on farmers' individual incomes, it is first necessary to establish the political, regulatory, and institutional context within which this AAFN has developed and currently operates. From this starting point, we will then probe farmers' perspectives of farm to school programs.

A short history of farm to school program development in the United States

Most farm to school programs in the United States operate within the context of public schools. It is this publicly funded context that makes farm to school programs

significantly different from other AAFNs such as farmers' markets or community supported agriculture (Allen & Guthman, 2006). Since nearly all public schools participate in the federally funded NSLP, most farm to school programs also must comply with NSLP guidelines.

Farm to school programs have emerged at a time when there is increasing concern about the quality of school food and increasingly tight budgets in school food service (Allen & Guthman, 2006; Story, Kaphingst, & French, 2006). Although the NSLP regulations have always included nutrition guidelines, the first School Nutrition Dietary Assessment Study (SNDA-I) revealed that in the 1991-1992 academic year, reimbursable school lunches were not consistent with the Dietary Guidelines for Americans (Fox, Crepinsek, Conner, & Battaglia, 2001; U.S. Department of Health and Human Services & U.S. Department of Agriculture, 2005). Several years later, the USDA launched the School Meals Initiative for Healthy Children to improve the nutritional quality of these meals by bringing them into compliance with the Dietary Guidelines (U.S. Department of Health and Human Services & U.S. Department of Agriculture, 2005). Since then, the nutritional quality of reimbursable school lunches has improved. However, the overall school food environment, including the high-fat and high-sugar competitive foods[4] that are sold alongside reimbursable school meals, continues to need improvement (O'Toole, Anderson, Miller, & Guthrie, 2007; Story, Kaphingst, & French, 2006).

Budget pressures complicate schools' efforts to improve the quality of school meals. School food service, once included in the local school budget, must often now be self-supporting and in addition to food, labor, and equipment, many schools cover the cost for such expenses as utilities, trash removal, rent, and building maintenance (Story,

[4] Competitive foods are all foods offered for sale at school except reimbursable meals.

Kaphingst, & French, 2006; Wagner, Senauer, & Runge, 2007). The cost of operating a school food program is covered primarily by federal subsidies[5] and cafeteria sales. Since participation in the school food program is not mandatory, schools need to serve as many meals as possible in order to generate the revenue needed for financial solvency. According to some scholars, such budget pressures have forced many schools to serve popular, but sometimes nutritionally inadequate foods that are appealing to children (Story, Kaphingst, & French, 2006).

In 2002, the 1946 National School Lunch Act[6] was amended to require the Secretary of Agriculture to encourage institutions participating in the federal meals program to purchase locally grown food to the *maximum extent practicable* (U.S. Department of Agriculture Food and Nutrition Service, 2004). Although the modifying clause weakens the directive, a number of advocates have used the amendment to help catalyze farm to school programs. Since 2002, many states have passed their own bills to give in-state preference to agricultural products (National Farm to School Program, 2007).

Despite this activity, much confusion exists about the rules that apply to local school food procurement. Geographic preferences it turns out are in conflict with a federal rule that prohibits schools participating in the NSLP to use such preferences when evaluating their bids. As publicly funded institutions, schools participating in the NSLP

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[5] In the 2007-2008 school year, the federal reimbursement rates for schools in which more than 60 percent of lunches served in the preceding year were served free or at a reduced price were $2.49 for every free meal served, $2.09 for reduced-priced meals and $0.25 for full-priced meals. (Food and Nutrition Service USDA, 2007b).

[6] The purpose of the National School Lunch Act is to "safeguard the health and well-being of the Nation's children and to encourage the domestic consumption of nutritious agricultural commodities and other food, by assisting the States, through grants-in aid and other means, in providing an adequate supply of food and other facilities for the establishment, maintenance, operation and expansion of nonprofit school lunch programs" (Gunderson, n.d.).

must follow federal procurement regulations and bid their products in a way that ensures open and free competition. In addition, schools must also follow their own state and local procurement rules. Small purchases have provided a means for circumventing some of the onerous federal guidelines. For small purchases, schools can use a relatively simple bidding procedure that short-circuits the formalities associated with large purchases. Under the small purchase guidelines, schools can make purchasing decisions based on verbal price quotes from at least two and preferably three vendors. Thus, the small purchase method gives schools the ability to contact three farmers instead of opening the bid process to food distributors or other school food service vendors. This method, in effect, supports geographic preferences. What is considered "small" and "large" varies from state to state, but must not exceed the federal threshold of $100,000. In Michigan for example, schools can use the small purchase method for purchases under $19,650 (Michigan Legislature, 2007). In Idaho, the threshold is $25,000 (Idaho State Department of Education, 2008). Purchases that exceed these thresholds must be bid through a cumbersome process that involves large amounts of paperwork, sealed bids, and formal advertisements. In either case, prior to receiving price quotes, schools must develop criteria on which to evaluate bids. If more than one vendor meets all of the criteria, most schools in today's tight fiscal climate use the lowest price to justify their final selection. In other words, vendors selling products that are otherwise identical are selected based on who is able to offer the lowest price. Thus, the federal procurement regulations erect a structural obstacle for some producers who may not be able to compete with larger and more efficient distributors.

According to the Community Food Security Coalition, a non-profit organization that is leading farm to school policy efforts at the federal level, the USDA's position has "dissuaded many school districts from implementing legally permissible contracting processes that would facilitate local food purchasing" (Community Food Security Coalition, 2007). Although the 2002 amendment to the National School Lunch Act created space for more "creative public procurement" (Morgan & Morley, 2002), it did not preempt the federal rule against geographic preferences. The contradictory nature of state policy has produced both political opportunities and challenges for advancing farm to school program efforts.

In addition to cash reimbursements from the federal government, schools participating in the NSLP are eligible to receive donated commodity foods valued at $0.1875 per lunch served (Food and Nutrition Service USDA, 2007a). For every lunch served, schools receive $0.1875 in entitlement dollars that they can spend on commodity foods such as raw meat, cheese, and processed foods. In 1995, the USDA entered an agreement with the Department of Defense (DoD) to supply fresh fruits and vegetables to schools along with the DoD's deliveries to military installations (U.S. Department of Agriculture Food Distribution Programs, n.d.). Through this inter-agency program, schools have been able to purchase a wider variety of fresh produce than they would normally be able to procure through the USDA commodity program. In some states, these products are purchased directly from local farmers and then distributed to schools. In North Carolina, for example, more than $475,000 of locally grown produce was distributed to schools in 2006 (North Carolina Department of Agriculture and Consumer Services, 2008). Participation in the DoD Fresh Fruit and Vegetable Program (DoD-

Fresh) is not mandatory; schools can use 100 percent of their entitlement dollars to purchase non-produce commodity foods.

Early farm to school initiatives targeted small- and mid-size family farmers with the overall goal of supporting "agriculture that is more localized and sustainable than large-scale, chemical intensive, industrial-style agriculture" (Azuma & Fisher, 2001:5). Farmers sold their product directly to schools with the hope that eliminating the middleman would lead to increased profits for farmers and decreased costs for schools. However, studies and anecdotal reports have repeatedly shown that logistical challenges (e.g. ordering, delivering, receiving) pose major barriers to integrating locally grown produce into the school food program (Allen & Guthman, 2006; Azuma & Fisher, 2001; Berkenkamp, 2006; Gregoire & Strohbehn, 2002; Izumi, Rostant, Moss, & Hamm, 2006). Furthermore, as stated earlier, school food service sales appear to contribute negligibly to farmers' incomes (Joshi & Beery, 2007; Ohmart, 2002). In the remainder of this chapter, we explore why farmers participate in farm to school programs and the potential of school food service as a viable market for farmers. We do this through in-depth interviews with seven farmers participating in farm to school programs located in the Upper Midwest and Northeast regions of the United States.

Methods

The data presented in this paper are part of a larger study exploring the opportunities and barriers of seven farm to school programs located in the Upper Midwest and Northeast regions of the United States from the perspectives of farmers, school food service professionals, and food distributors. Our investigation was limited to

these three stakeholder groups because they are intimately involved with the procurement and integration of locally grown food into the school food program. The data were collected through in-depth interviews with each of the research participants as well as through analysis of related written materials.

Interview participants were identified through maximum variation sampling to capture the heterogeneity of farm to school programs (Patton, 2002). We were interested in learning from the experiences of stakeholders whose efforts reflected both the dominant model for distributing locally grown food to school — farm-direct-to-school — as well as models that use distributors such as produce wholesalers and shippers. To be selected, a farm to school program needed to have been in operation for at least two years and have stakeholders who would be able to articulate the challenges and opportunities to integrating locally grown produce into the school food program. Given the recent emergence of farm to school programs, we felt that two years was the minimum length of time required for stakeholders to be able to articulate the opportunities and challenges they had encountered while still allowing us to include enough cases to capture the diversity of programs in our sample. In addition, the programs had to be located in the Upper Midwest or Northeast regions of the United States, two areas of the country that are climatologically similar. Given the diversity of school districts, we also selected programs that were different on characteristics that might influence their development such as school district location (rural, suburban, urban), free- and reduced-price meals status, and school district size.

We began by asking two well-situated key informants for leads to which school districts had been integrating locally grown foods into their school food program for at

least two years. Eight farm to school programs were identified. One food service professional did not return our phone calls requesting participation in this study. The school food service professionals, farmers, and distributors involved in each of the seven programs were recruited for and agreed to participate in this study.

Interview data were collected with the intention that they would provide a glimpse into the day-to-day reality of stakeholders involved in farm to school programs that are unavailable in the existing scholarly or advocacy literature. The one-on-one interviews were conducted by the first author in the spring of 2006 with a follow-up interview in the spring of 2007. All interviews were recorded and then transcribed verbatim. The interviews with farmers lasted between 30 and 90 minutes and most took place in their homes or offices, although some questions were asked on tours of their workplaces (e.g. farms and food packing facilities). These tours were invaluable for providing context to the farmers' interview responses.

Menus, request for bid applications, price lists, and other documents were used to cross-check the interview findings and to enhance the validity of the results. In addition, newspaper articles and other non-peer reviewed literature such as grant reports, handbooks, government documents and newsletters relevant to farm to school programs were collected and examined. These documents provided additional context for the individual cases and helped to situate their programs within the broader national farm to school program effort. The conclusions formed in this paper emerged from our analysis of semi-structured interviews with seven farmers. From time to time, we supplemented the data with interviews with school food service professionals and distributors. Before presenting our findings, we describe salient characteristics of the farmers. For

confidentiality, pseudonyms are used to identify the farmers and all distinguishing characteristics are veiled to protect their identities.

Results and discussion

A summary of farmers' participation in farm to school programs is shown in Table 2-1. Three farmers we interviewed supplied food to school food service programs in the Upper Midwest region of the United States while four were located in the Northeast. The majority of these farm to school program relationships were initiated by food service professionals who contacted the farmer to request product and pricing information. One farmer, David Parker, contacted a nearby school district after learning about their local food purchasing efforts through a community newspaper. At the time of the interviews, all except one farmer was supplying school districts with a range of products including apples, winter squash, tomatoes, and asparagus. George Watts, a full-time farmer who relies on direct market outlets in the Upper Midwest region, won a bid to supply a local school district with potatoes but ran out before the school district was ready to purchase them. Farmers reported that school food service made up a miniscule percentage—ranging from less than one percent to about four percent — of their total farm sales by volume and income.

Extending market diversification strategies

"Sometimes you win, sometimes you lose but I believe it's incredibly important for farmers to have diversified marketing outlets and not depend solely on one venue. It's the aggregate we're looking at" (Doug Jensen).

Table 2-1: Summary of farmers' participation in farm to school programs			
Farmer[7]	**Region**[8]	**Initial farmer involvement and evolution of participation**	**Percentage of total farm sales by volume and income**
Doug Jensen	UM	Contacted by one school to participate in local food education event Won future bids to sell apples to school district Currently delivering apples to individual school buildings	2 %
George Watts	UM	Contacted by school to participate in local food education event Won future bids to sell potatoes to school district but ran out of potatoes Did not win future bid to deliver apples	<1 %
Jeff Smith	UM	Contacted by school to supply apples to district No competitive bidding process was followed Currently delivering apples to central location	<1 %

[7] Pseudonyms are used to protect the identity of the farmers.
[8] UM = Upper Midwest, NE = Northeast

Table 2-1 (cont'd).			
Shawn Burns	NE	Contacted by school to supply asparagus to district Currently delivering asparagus and other vegetables in back of personal station wagon to central location	<1 %
David Parker	NE	Initiated relationship Won future bids to sell broccoli to school district Currently delivering broccoli to central location	<1%
Ron Williams	NE	Contacted by school to supply apples to district Currently delivering apples to central location	<4 %
Alan Moore	NE	Contacted by school to supply produce to district Currently delivering produce to central location	1%

All farmers who participated in this study emphasized the importance of diversifying their market strategies. Although school sales made up a tiny percentage of their total sales by both volume and income, schools were compatible with the farmers' overall strategy to spread their risk across many different markets including other AAFNs

(e.g. farmers' markets) and more conventional (e.g. processors, wholesalers, supermarkets) outlets. For example:

> "I like to have backup plans, you know. I mean it's always nice to have more markets than just one or two. I've always had five or six different markets. I don't like to get stuck in one place. That could be devastating if something happens, you know? If they go bankrupt or whatever" (Ron Williams).

For four farmers who supplied schools with locally grown apples, the school market represented a chance to supplement their marketing strategies; the school market provided an outlet that would allow them to generate a modest income during the relatively slower-paced winter months when revenue from their other markets was small or negligible. This was seen as especially important for one farmer who sold most of his apples to shippers or processors and often had to wait six months to a year for his payments from these intermediaries.

The quote above also demonstrates that new markets are cultivated in recognition of the tenuousness of agricultural profitability and the volatile climate that is common place in farm markets. While all of the farmers had their preferred outlets, they emphasized that diversification was necessary to protect themselves from the vagaries of the market and nature. For example, if market demand for Gala apples is low, farmers who have a surplus of Gala apples can sell them fresh to schools for $0.50 per pound instead of selling them to processors for $0.10 per pound. Similarly, although small fruit size can mean low returns in the wholesale market, schools typically prefer smaller size fruit and can potentially return higher prices to farmers. Thus, school food service sales helped to mitigate some of the economic risks of farming. Other research also suggests that alternative markets can return higher prices for products that would be classified as

"second class" in more conventional outlets that are governed by the logic and standards of the global market (Verhaegen & Van Huylenbroeck, 2001:447).

All seven farmers we interviewed felt that schools paid them a fair price for their product. However, this price did not come without some cost to personal autonomy. Six farmers went through a small purchase competitive bidding process and set their prices through a written or verbal price quote. The competitive bidding process typically took place well before harvest which meant that farmers had to forecast their yield and their costs months in advance. Farmers who were awarded a bid were expected to honor their price quotes throughout the year or risk losing the bid. This had both positive and negative implications. On the one hand, schools offered farmers insurance on the prices they would receive for their product. Price security allows farmers to better estimate their revenues for a given market and therefore makes new ventures less risky (Verhaegen & Van Huylenbroeck, 2001). On the other, because the prices did not fluctuate with the market, farmers were not able to capture any gains beyond the agreed upon price if the market price rose. As one farmer stated:

> "The schools want us to bid on these deliveries in August. But we hadn't picked apple one at that point. So how many apples are out there? What's the value? We didn't know that. There could've been a huge windstorm and we'd not have any apples to deliver. Or the value of those apples could have gone up tremendously" (Doug Parker)

Estimating revenue and expenses was further complicated by the competitive nature of the process; farmers had to price low enough that they would be able to win the bid. Since schools are working within tight budget constraints, all other things being equal, they will choose the lowest-priced vendor. In this way, federal procurement

regulations became a way in which schools exerted authority over farmers' ability to capture profits and to exercise personal autonomy.

By selling their product direct to schools, farmers were able to eliminate the middleman and capture a greater share of the final retail price. In all cases, the prices the farmers received were comparable to or higher than prices they received for the same product through their other market channels (e.g. supermarkets, processors, wholesalers, farmers' market). In addition, schools frequently recycled boxes for the farmers to reuse which, at $1.50 per box, helped to increase their profitability. Other research on the impact of school food service sales on farmers' incomes also suggests that schools can influence farmers' profitability through informal ways. For example, Ohmart (2002) found that although farmers were sometimes asked to give schools price-breaks on their produce, schools reciprocated by picking up the produce themselves and, as we also found in this study, by returning the farmers' packaging to them (Ohmart, 2002).

This ability to appropriate increased value from commodities through alternative modes of food provisioning is one of the reasons why AAFNs have been adopted by producers and considered by scholars as a viable alternative to more conventional markets (Higgins, Dibden, & Cocklin, 2008; Kirwan, 2004; Marsden, Banks, & Bristow, 2000; Watts, Ilbery, & Maye, 2005). However, it is important to note that in AAFNs, it is

> "the fact that the product reaches the consumer embedded with information...which enables the consumer to confidently make connections and associations with the place/space of production...The successful translation of this information allows products to be differentiated from more anonymous commodities and potentially to command a premium price if the encoded or embedded information provided to consumers is considered valuable" (Marsden, Banks, & Bristow, 2000:425).

Unlike other AAFNs such as certification schemes, farmers who sell their product to schools are not able to capture the full economic potential of AAFNs. Since schools must go through a competitive bidding process that precludes consideration of geographic proximity, the embeddedness of production cannot be valorized. In other words, schools cannot place a monetary value on the localness of the product. Instead, the farmers we interviewed were able to appropriate increased value from their commodities by selling their product direct to schools that were willing to help them keep their costs down.

Structural constraints of farm to school programs

Although the farmers we spoke with felt that they received fair prices from schools, the volumes were so tiny that in general, they felt that overall, schools had an insignificant impact on their incomes. In addition, they felt that the school market was limited by the oppositional school year and agriculture production cycle, tight budgets, and DoD-Fresh, three interrelated variables that contributed to schools' inability to purchase larger volumes of locally grown food from farmers. Four of the farmers we spoke with felt that the potential of farm to school in the Upper Midwest and Northeast regions of the United States was limited by the mismatch between the school year and growing season of popular school food service items. For example:

> "I think we're doing about all we can with the schools already. From the time school starts, we sell them whatever we have. We start with a few peaches and pears but you know, we go through an awful lot of summer fruits when they don't have school. So we're doing all we can for the entire school year, just about" (Jeff Smith).

> "Schools rotate their menu. So, if I've only got two products that they're interested in, they're only gonna buy it when that comes up on the menu

> and when the kids are in schools, you've already missed half the season. They don't start until the third or fourth of September. So you only have September and October, and by November, you're back to nothing but storable products" (Shawn Burns).

Schools do have the option of buying storable products such as winter squash from local farmers. However, foods with little perceived or real demand are unlikely to be offered in school cafeterias, because schools cannot afford to take the financial risk of turning children off of cafeteria food. Since the growing season of foods that students prefer and the academic year are oppositional — an intentional and historical artifact — seasonality is often perceived as a barrier that caps the growth of farm to school programs (Berkenkamp, 2006; Gregoire & Strohbehn, 2002; Izumi, Rostant, Moss, & Hamm, 2006). Furthermore, while one farmer we interviewed was supplying schools with butternut squash, many schools do not have the skilled labor or the equipment needed to prepare such labor intensive foods (Berkenkamp, 2006; Joshi & Beery, 2007).

Several farmers we interviewed felt that DoD-Fresh interfered with their ability to sell apples to schools. DoD-Fresh was created to provide more fresh fruits and vegetables to schools. While it has accomplished this goal — schools can purchase up to 874 different types and pack sizes of fruits and vegetables through DoD-Fresh (U.S. Department of Agriculture Food Distribution Programs, n.d.) —it also has in some ways, undermined USDA's other effort, the Small Farms/School Meals Initiative[9]. With increasingly tight budgets, schools buy popular items such as apples through this DoD/USDA interagency program whenever they become available. Schools use their entitlement dollars to pay the market price for DoD-Fresh products, and draw from their

[9] The purpose of the USDA Small Farms/School Meals Initiative is to encourage small farmers to sell fresh fruits and vegetables to schools and schools to buy this product from small farmers (U.S. Department of Agriculture Food and Nutrition Service, 2000).

budget only to pay for storage and transportation costs. At approximately $2 per case for storage and transportation, the impact of these purchases on the budget is relatively small.

Schools that wish to use their entitlement dollars to purchase fresh fruits and vegetables must make this decision in the spring prior to the school year in which they will be purchased by allocating a specified amount of their dollars towards DoD-Fresh. Since entitlement dollars are awarded annually and are lost if they are not used within the year, schools have an economic incentive to buy DoD products as they become available. Information about which products are available through DoD-Fresh is provided to schools on a weekly basis throughout the year. According to several farmers we spoke with, DoD-Fresh has negatively impacted farmers' school sales. For example:

> "Well it's, like I say, the school buys for 3 or 4 or 5 weeks in a row and then you wouldn't hear anything for another 3 weeks, you know because she's getting these apples from the USDA. It's like she'll go in spurts, she'll buy for like a month and then I'd say about every month and a half the USDA comes out with these apples. Like they come out with them in November, they'll have them in November, and they just had them here in February. See, she bought apples from me the beginning of January and then she didn't buy apples again 'til the first of March. Middle of January and the first of March, so that's 6 weeks, but you know she's getting her apples from the USDA in between that period.... It isn't worth it, you know I told her that when she did it the last time. You know, I had all these apples and I had to go and sell them. I wasn't going to put up with that. She said she wouldn't do it again then turns around and does it again in February" (Alan Moore).

DoD-Fresh adds an element of risk to farm to school programs because if farmers are not able to sell their product to schools, it may have to be sold to processors for less value. While it is frustrating for farmers to have their school sales interrupted by DoD-Fresh, without the help of such assistance programs to help school food service professionals balance their budgets, it is questionable whether the schools would have had the money to pay farmers fairly for their products. Furthermore, in some states DoD-

Fresh facilitates the distribution of locally grown food to schools. At the same time, schools could choose to spend 100 percent of their commodity entitlement dollars on non-produce items thereby preserving their relationship with farmers and eliminating this source of uncertainty altogether.

Beyond short-term economic gains

From a purely economic perspective, school food service sales appear to be a relatively insignificant market opportunity for farmers. Although the farmers we spoke with felt that they received good prices from schools, the volumes were so tiny that they felt that overall, school purchases had an insignificant impact on their income. Similar to other AAFNs recently reported in the literature (Sonnino, 2007), the school market is a relatively easy diversification option that does not require significant commercialization (e.g. cleaning, packaging, storage) or production investment. Thus, for the most part, farmers were able to "*recombine* and *reconfigure*" the resources at their disposal (van der Ploeg & Renting, 2000:531).

In addition, for four of the seven farmers we spoke with, their school markets were conveniently located nearby or en route to their other markets or daily errands. Although the volumes were small, several farmers received wholesale or retail prices from schools without incurring the costs associated with delivering large volumes to their wholesale and retail markets. Given the small volumes, the convenience of the school's location was seen as critical to making farm to school programs work from an economic perspective. For example:

> "It's small orders so you're not going to go to five, even three different places. But it was somewhere close to where I was already going for other

> reasons, so it was easy to deliver...but in terms of doing more of that type of thing, it's not something I'm looking to do because it isn't something that's going to fit into what I'm already doing. I'm not into being on the road delivering a few boxes here and there...If it was five miles that way, I probably wouldn't do it. You wouldn't be able to " (Shawn Burns).
>
> "The biggest problem with the school is there isn't any volume...Say we did 20 cases to the Petunia City School District this week and I'm doing 100 everyday someplace else. So the volume isn't there whatsoever. But it just allows you to extend your market and I have to drive to Petunia to deliver anyway. It's not like it's any process, there's no extra delivery cost to me because I'm there with the [supermarket] broccoli anyway" (David Parker).

Farmers who sold their products to schools that were not conveniently located built their higher distribution costs into the price of their products. One farmer who grows more than 15 varieties of apples and who delivers these and other fruit to a school located 30 miles from his farm said that he received a "premium price" from the school, which was higher than his retail or wholesale prices. In describing how he justified the price, he said:

> "They're not tray-packed so we're saving on packaging. But we select what they want for size and so I think it's very justifiable to charge them those kinds of prices...You really do have to get a pretty decent price — really, a premium price to be honest with you, to make it worthwhile. Otherwise you might as well, frankly for those few apples — that translates to about five or six bins of apples when we had five thousand bins — you might as well just send 'em on a [processing] truck even if you only got half that much for that volume. It wouldn't be worth it. So you really do have to get a premium price" (Jeff Smith).

A second farmer also felt that selling his product to schools was economically feasible even though he had to make multiple small volume deliveries — one or two cases per school — in order to meet the school district's needs. In developing the price for his product, he included direct costs such as labor and fuel as well as transaction costs linked to selling product to schools and therefore capitalized on the opportunity to

generate additional revenue by delivering his product to individual schools within the district.

The majority of the farmers we interviewed had a long-term view of farm to school programs and expressed hope that their persistence in pursuing school food service sales would result in future economic benefits. For example:

> "Sometimes, in order to develop a new market...you might have to take a break even or even a slight loss to get your foot in the door, to show them what quality you've got and what services you can provide. And then next year, hopefully it'll grow. And so I guess that's where we are with it at this point, where we're willing to do most anything to try to make the thing work" (Shawn Burns).

> "It's hardly anything percentage wise. It's just a way to open doors. In my transition from big to little, I need to open every door that I can open. And if that means I can sell them grape tomatoes or cucumber or something in addition to broccoli, going forward, then that's wonderful...I wouldn't worry about volume at this point...just because you never know. How do you know that all of a sudden they don't decide that they want the goofy looking green pepper that you grow? You never know" (David Parker).

Thus, farmers were hopeful that by spending time now to develop a customer there would be future opportunities to sell more products to the schools.

In addition, the farmers felt that farm to school programs were an opportunity to grow future customers for their product. For some farmers the customers were the parents of the children, while for others the children themselves were seen as the future eaters of their product. Since food habits are established in early childhood, several farmers felt that introducing children to new foods such as asparagus and butternut squash at school would cultivate their taste for these foods.

> "It's a program I believe in. I think we're helping cultivate our next generation of consumers, and that's why we do it" (Doug Jensen).

> "We really want to reach these young children to make them future consumers of apples and future customers of [our farm]...That would probably be the biggest and best reason to do it right there" (Jeff Smith).

Thus, although schools represented only a small percentage of their current income, as these quotes illustrate, farmers felt that school food service sales were an opportunity that would yield future benefits not only to their own business but also to the agriculture industry in general. Ohmart (2002) also notes that indirect sales resulting from farm to school programs are a potential benefit and source of future income for farmers.

Ancillary motivations and latent benefits

Although one of the objectives of farm to school programs is to create stable market opportunities for farmers, at the time of the interviews, schools represented a largely insignificant part of the farmers' total sales by volume and income. Despite this, the farmers we interviewed had no plans to discontinue their work with schools. The market *potential* of schools was overwhelmingly the strongest motivator across all seven farmers. However, the majority of farmers also expressed ancillary motivators that described latent social benefits, expressed in terms of children's dietary habits and their desire to support the local community, which they hoped would accrue from their current efforts. Compared to the number of times farmers' motivation to participate in farm to school programs was framed around the market potential of school food service, these ancillary motivators seem insignificant. Still, it would be inappropriate to minimize their importance given that they illustrate the full picture of farm to school programs and provide insight into the complex interplay between the embedding and disembedding

forces of AAFNs that others have observed in different contexts (Higgins, Dibden, & Cocklin, 2008; Hinrichs, 2000; Sonnino, 2007).

Several farmers recognized the significance of the steadily increasing numbers of children who are overweight and associated their participation in farm to school programs with improving children's eating habits by introducing children to a wider range of fruits and vegetables. For example:

> "I'm very concerned about the dietary habits that our young kids are establishing, and I think it's very critical, particularly in the elementary grades, that they have exposure to a wide variety of fruits and vegetables...I just don't accept the fact that kids don't like fruits and vegetables. I'm not willing to accept that. I think that with the right exposure and that sort of thing, they're willing to try and eat different things. I mean, all you need to do is have pizza on the menu and that's all the kids want to eat. And I don't buy into that. I think they're really more interested and I think if it's presented to them properly, they'll eat a lot of different things" (Doug Jensen).

> "I really believe in the mission — I believe in what the schools are doing. I believe in this obesity challenge that the country has. I believe that supporting local is good. I believe that the varieties that we can provide by growing local are tasty and maybe in some cases more nutritious because they don't have to be designed to be trucked and to have a thicker skin and all this type of thing. So I believe in all this. So, if we didn't lose our shirt, I'd probably still do it for awhile just in support of the concept, you know, to be a player" (Alan Moore).

These farmers' sentiments align with one of the objectives of farm to school programs — to bring healthier, fresher foods into the school cafeteria. Their perspectives converges with those of their school food service counterparts who were motivated to buy locally grown food because they felt that children liked and ate the fresh fruits and vegetables grown by these farmers (Izumi, Alaimo, & Hamm, 2008).

Five farmers talked about their desire to support the local community by selling their product to schools. This was expressed in terms of social responsibility as well as

localism based on a "strong sense of symbolic community" (Winter, 2003:31). One farmer who sells a variety of vegetables to a nearby school district said this about farm to school programs:

> "You will eliminate all the transportation costs so there's an economic reason for doing it. But it's also sort of a community responsibility. Socially, it makes the most sense because you're keeping your dollars where they are instead of exporting your dollars. And so your dollar stays where it originated and continues to multiply rather than just leaving to China or wherever Wal-Mart buys from...Responsibility might be a strong word. But just that you're an integral part of the community that you are in. That you're participating in its nurture" (Shawn Burns).

The following quotes illustrate the complexity of localism and how economic instrumentalism colors and complicates the notion of embeddedness.

> "I guess from a philosophical standpoint, it's always bothered me that we have all these people within a given area and we raise x amount of stuff within a given area, but yet most of the stuff they eat in this given area is brought in" (Alan Moore).

> "...part of it is just a kind of support or a dedication to the concept because I felt that there was real merit in trying to get local foods into a local market. And to helping our agriculture and to see if that couldn't help provide more sustainability to our agriculture here in the county 'cause I feel like the agriculture in the county is a large part of its economic base. And you know, I feel they needed somebody to help pursue that..." (George Watts).

> "...if we look at the bigger picture and sustainability particular to the [state] apple industry, we want to see more [state] apples sold in [state]. I mean, roughly right now, 25 percent of the apples consumed in [state] are grown in [state] and 75 percent are imported from outside the area. So here's a market right here in our backyard...and food service is a big component of that" (Doug Jensen).

These quotes illustrate the difficulty of dissociating economic instrumentalism from farmers' desire to support their local community or economy. While they can all be explained in terms of the "pursuit of self-interest," according to Block (1990), the important point is the degree to which "individual behavior is oriented to economic

goals" (Block, 1990:54). Thus, in order to accurately portray farmers' motivations to participate in farm to school, embeddedness, marketness, and instrumentalism must be analyzed together.

Conclusion

This paper explored the potential of public procurement of locally grown foods to provide a stable market for farmers by examining their motivation to participate in farm to school programs. In addition, our analysis considered the larger institutional, political, and regulatory context in which these programs are embedded. The findings contribute to recent literature on the hybridity of AAFNs, which highlights the tensions between the embedding and disembedding forces that shape the development of these networks (Goodman, 2004; Higgins, Dibden, & Cocklin, 2008; Hinrichs, 2000; Sonnino & Marsden, 2006) as well as the interaction between their "horizontal" (i.e. local context) and "vertical" dimensions (i.e. political, institutional, and regulatory context) (Higgins, Dibden, & Cocklin, 2008; Sonnino & Marsden, 2006:189; Tregear, Arfini, Belletti, & Marescotti, 2007). The case study method employed means that conclusions drawn are based on the specific experiences of the farm to school programs analyzed and may not be generalizable to other contexts. Through our analysis of in-depth interviews with seven farmers participating in farm to school programs in the Upper Midwest and Northeast regions of the United States, we argue that these farmers sell their products to schools primarily as a way to extend their economic livelihood strategies. However, the potential of schools to provide viable market opportunities for farmers is far from clear.

Several key issues emerged from this research, which highlight the complexity of farm to school programs.

In contrast to previous research on farmers' participation in farm to school programs which suggests that philosophical rather than practical reasons drive farmers' participation (Ohmart, 2002), our analysis suggests that the farmers we interviewed were motivated to sell their product to schools primarily for their market *potential*. The economic imperative driving farmers' participation in farm to school programs is illustrated by their persistence in pursuing schools as customers despite consistently low volume sales. Their turn to farm to school programs for personal financial gain, even in the face of such small returns, can be seen in the following comments: "I need to open every door that I can open," or "We really want to reach these young children to make them future customers," or "I like to have back-up plans...I don't like to get stuck in one place. That could be devastating if something happens, you know." For the majority of the farmers we interviewed, school food service sales made up a miniscule percentage of their total sales by income. Yet, they had no plans to discontinue their participation in farm to school programs.

Our findings support other studies that suggest that the school market has not been an economic windfall (Ohmart, 2002). The farmers we spoke with did not rely on their school food service sales to make ends meet. Rather, they only dipped into these markets as a means to diversify their sales with minimal resource investment. Schools were considered an easy diversification option in part because the adaptation and opportunity costs were relatively small. Convenience therefore, was a critical factor in farmers' decision to pursue food service sales. This finding raises questions about which

farmers will most likely benefit from farm to school programs. Given small volumes, it seems unlikely that those farmers who do not have "already paid for" or "multi-purpose" resources to grow, package, and deliver their product to school food service specifications would pursue or financially benefit from school food service market opportunities.

The contradiction between farmers' motivations and their actions can in part be explained by the tension between farmers' desire for autonomy and economic profitability. Like other detours identified by Mooney (1988), farm to school programs allow farmers to avoid proletarianization and remain in agriculture; by entering into relations with schools, farmers give up some of their autonomy when they are forced to work within the structural constraints of school food service (e.g. school year calendar, lack of material resources, procurement regulations). However, as our analysis shows, unlike tenancy, part-time farming, entering into contract relations, or taking on more debt, participating in farm to school programs offered farmers latent social benefits that factored into their decision to sell their product to schools even given the miniscule market size. Research on the differential role of embeddedness in delaying or preventing proletarianization is needed.

Our findings also highlight the complexity of farm to school programs and the need to better understand the interaction between the horizontal and vertical dimensions of AAFNs (Sonnino & Marsden, 2006:189). As the analysis shows, relationships between farmers and food service professionals were structured by rules, regulations, and routines which were largely shaped by the tight fiscal climate of school food service.

Farm to school program advocates have been engaged in various efforts to address some of the structural barriers that limit the program's market potential. For example, policy efforts to increase procurement of locally grown foods in K-12 public schools have focused on increasing flexibility for schools to use geographic preferences, often interpreted in terms of state boundaries, when buying food. In Kentucky, legislation states that when price and quality are equal, Kentucky-grown products must be purchased (Kentucky Legislature, 2006). And in Massachusetts, the state legislature passed a bill that allows for a ten percent price preference above the lowest bid for Massachusetts-grown products (Commonwealth of Massachusetts, 2006). These state legislative actions however do not preempt the federal rule against geographic preferences and are, for the time being, more symbolic than significant. The policy focus on allowing schools to use geographic preferences when buying food also diverts attention away from the lack of material resources that limits the potential of farm to school programs. For example, if policy changes enable farmers to use their local assets as a comparative advantage, which schools will open their doors to farmers? Will schools be able to pay the additional cost? If so, what will be the trade-off? As gate keepers of food service procurement, school food service professionals decide which farmers will be invited to participate in the competitive bidding process and how limited resources will be allocated.

Policy changes that focus on geographic preferences also may inadvertently undermine farmers' opportunity to benefit from farm to school programs. The tendency for local institutions to loosely define attributes such as "local" has been shown by others to be motivated by a desire to create opportunities for as many actors as possible (Tregear, Arfini, Belletti, & Marescotti, 2007). As various scholars have warned, as

AAFNs like farm to school programs become economically significant, there is "potential for the appropriation of the economic benefits associated with the embeddedness of production...by dominant actors within the 'conventional' agr[i]food system, typified by the 'conventionalisation' of organic food production" (Kirwan, 2004:398). Modifying the meaning of "local" to include non-economic values such as equitable payments to farmers, can discourage the participation of food service actors whose agendas conflict with farm to school program advocates' efforts to create viable markets for small- and mid-size family farmers. More research is needed to understand what role the state could and does play in disembedding local production from consumption.

The issue of procurement of locally grown foods in K-12 public schools in the United States provides a unique case for increasing our understanding of the potential impact of AAFNs on farmers' incomes. The perspectives of the farmers in this study highlight the tensions between marketness, instrumentalism, and embeddedness that motivate their participation in farm to school programs. By situating their experiences within the larger political, institutional, and regulatory context of farm to school programs, this study provides insight into their potential to create stable market opportunities for farmers. Although school food service is promoted as an important market opportunity for farmers, the benefits have mostly been assumed. A nuanced understanding of the motives and needs of farmers and school foods service professionals will be critical to the long-term success of farm to school programs.

CHAPTER THREE:

PERSPECTIVES OF SCHOOL FOOD SERVICE PROFESSIONALS

> To rehumanize consumption, reintegrate food into the culture, and turn producers and eaters into allies, people will have to acknowledge and act on their responsibility to the common good and the need to balance it with self-interest.
>
> --Kate Clancy (1997)

Introduction

Farm to school programs are among the many efforts across the country aimed at improving the quality of school meals. These programs include a range of activities designed to connect children with local agriculture such as harvest festivals, field trips to farms, and educational visits from farmers. Integrating locally grown foods into the cafeteria has been described as the "cornerstone" of farm to school programs (Allen & Guthman, 2006:9). While the practice of buying farm-fresh foods for the school food program is not new — fresh produce was purchased at local terminal markets before refrigerated boxcars were routinely used to ship perishable food across the country (Smedley, 1920) — the nationwide effort to systematically connect schools with local agriculture did not begin until the mid-1990s. According to advocates, these programs are a strategy to address the increasing prevalence of childhood overweight and lack of profitable and stable market opportunities for farmers (Azuma & Fisher, 2001).

Farm to school programs have the potential to improve children's health through increased access to fresh fruits and vegetables. Health professionals agree that schools can and should play a key role in improving children's dietary habits (Koplan, Liverman,

& Kraak, 2005; Story, Kaphingst, & French, 2006). In addition to their ability to reach the majority of the nation's youth, schools are uniquely positioned to promote healthful eating because children eat a large share of their daily food while they are at school (O'Toole, Anderson, Miller, & Guthrie, 2007; Story, Kaphingst, & French, 2006). Although the nutritional quality of school meals has improved substantially over the past decade, researchers say the overall school food environment continues to need improvement (O'Toole, Anderson, Miller, & Guthrie, 2007; Story, Kaphingst, & French, 2006). However, budget pressures have complicated schools' efforts to improve the quality of their food programs. School food service is funded primarily by federal subsidies based on the number of meals served. Since participation in the school food program is not mandatory, schools need to serve as many meals as possible in order to generate the revenue needed for financial solvency. According to some researchers, the severe budget constraints of school food service generally have forced many schools to serve popular, but sometimes nutritionally inadequate foods that are appealing to children (Story, Kaphingst, & French, 2006).

Farm to school program advocates assert that connecting children with local agriculture can play an important role in fostering better health among students without posing a burden on school food service budgets (Azuma & Fisher, 2001). According to one report, buying produce directly from farmers allows schools to buy "fresher — and possible more nutritious — food" than they can purchase through their broadline distributor[10] (also referred to as full distributor, prime vendor, or long-distance supplier) while eliminating some of the transportation and handling costs associated with shipping

[10] Broadline distributors are distributors that carry almost all of the food, supply, and equipment items necessary to operate a food service kitchen.

food across long distances (Tropp & Olowolayemo, 2000:6). To the extent that farm-fresh produce supplements school meals or displaces high-fat, high sugar competitive foods they have the potential to improve children's diets.

As the percentage of children who are overweight reaches epidemic levels, another trend — one that has dramatically changed our agriculture and food system[11] — is taking place. In less than one hundred years, agriculture in the United States has been transformed from one of small, family owned and operated farms that produced a diversity of commodities to one in which a handful of large, industrial-scale, specialized producers control the bulk of the food produced in this country (Lyson, 2004). This trend toward concentration and consolidation in food production is reflected throughout what has become a global agrifood system (Hendrickson & Heffernan, 1999). These structural changes have destabilized markets for farmers, especially those who are too big to take advantage of direct market opportunities such as farmers' markets but too small to compete in the global market (Kirschenmann, Stevenson, Buttel, Lyson, & Duffy, 2004). Scholars across diverse disciplines have argued that these agrifood system trends threaten the public's health as well as our environment and rural communities (Clancy, 1997; Gussow, 2006; Kirschenmann, Stevenson, Buttel, Lyson, & Duffy, 2004). Farm to school program advocates argue that school food service represents a substantial and stable market for small- and mid-size family farmers who could sell their product directly to schools (Azuma & Fisher, 2001).

Farm to school programs have garnered the support of diverse groups of individuals including nutrition educators, some of whom have long promoted diets that reflect a more sustainable food system (Clancy, 1997; Feenstra, 1997; Gussow, 1999;

[11] Hereafter, we abbreviate the food and agriculture system "agrifood system."

Gussow, 2006; Gussow & Clancy, 1986; Hamm & Bellows, 2003; Wilkins, 2005). For example, in 1981, concern for farmland loss and increasing dependence on food shipped from across the country or around the globe led members of the Society for Nutrition Education to adopt a series of resolutions that focused on stemming farmland loss and increasing the production and consumption of foods grown closer to home (Gussow, 1999). Five years later, some of these ideas were linked to the Dietary Guidelines and published in the *Journal of Nutrition Education* (Gussow & Clancy, 1986). Various scholars have argued strongly that closer proximity between producers and consumers may lead to more sustainable food systems (Gussow, 2006; Kloppenburg, Hendrickson, & Stevenson, 1996). According to Gussow (2006:19)

> "Consumers who were entirely isolated from the origins of their food could not see how their demands — for fatty meats, for exotic foods, for out of season produce — were threatening the agricultural resource base. If only they could see what went into the production of their food — which might happen...if food production were made more local — eaters might help save farmers and the planet."

Farm to school programs have emerged as one effort that holds the potential to improve children's health while simultaneously moving us in the direction of a more sustainable food system that would equitably nourish people today and well into the future.

Food service professionals across the country have shown a high degree of interest in farm to school programs (Izumi, Rostant, Moss, & Hamm, 2006; National Farm to School Program, 2007). However, distributing food from farm to school has been identified as one of the key barriers to integrating farm-fresh fruits and vegetables into the cafeteria (Berkenkamp, 2006; Gregoire & Strohbehn, 2002; Izumi, Rostant, Moss, & Hamm, 2006). Buying food directly from multiple farmers departs substantially from traditional school food procurement, which typically involves buying food from one or

two broadline distributors while patronizing a limited number of specialty wholesalers for products such as milk, bread, and produce (Lewi & Coppess, 2007). Studies have shown that food service professionals would be more likely to buy locally grown foods if they were available through their current food distributors (Berkenkamp, 2006; Izumi, Rostant, Moss, & Hamm, 2006). Food service professionals work under intense time and budget constraints and prefer buying food from distributors that can offer standardized delivery, streamlined ordering and billing, and mitigation of various quality control and liability issues (Berkenkamp, 2006). As a result, the farm-direct-to-school model has evolved to include various intermediaries including alternative distributors operated by non-profit organizations and conventional distributors that already supply school food service operations.

Nationwide support for farm to school programs is increasing. The National Farm to School Network, a portal for information about farm to school programs across the nation and technical assistance resource for local- and state-level efforts, estimates that more than 1,900 farm to school programs — up from 400 in 2005 — across the country are connecting their students with local agriculture either through the cafeteria or the classroom (National Farm to School Network, n.d.). Data remain scarce on how many food service professionals have integrated locally grown foods into their cafeterias. However, recent state legislative actions suggest strong support for farm to school programs. For example, when purchasing agricultural products in Kentucky, state agencies are encouraged to purchase Kentucky-grown product when price and quality are equal (Kentucky Legislature, 2006). And in Massachusetts, the state legislature recently passed a bill that allows for a ten percent price preference above the lowest bid for

Massachusetts-grown products (Commonwealth of Massachusetts, 2006). While these pieces of legislation do not preempt federal procurement regulations that prohibit geographic preferences when purchasing food, they are symbolic representations of the broad support that advocates have garnered for farm to school programs. Given the high level of interest in and rapid adoption of such programs across the country, an in-depth understanding of their opportunities and challenges is critical for enabling advocates to achieve their goals — providing viable market opportunities for farmers and improving children's health — and to minimize unintended or potentially contradictory outcomes.

The purpose of this study was to explore why food service professionals, farmers, and food distributors participate in farm to school programs and how they characterize the opportunities and challenges to local school food procurement. Our research focused on institutional sales because this dimension of farm to school programs appears to hold the greatest short- and long-term potential to improve children's diets and farmers' incomes. Although several surveys of food service professionals' perceptions of farm to school programs have been conducted, they do not necessarily capture the perspectives of those individuals who have experience integrating locally grown food into their cafeterias. For example, only 10 percent of the food service professionals who responded to a Michigan farm to school survey reported having purchased food directly from a farmer within the prior year (Izumi, Rostant, Moss, & Hamm, 2006). Similarly, anecdotal reports, success stories, and how-to manuals that focus on integrating locally-grown foods into the cafeteria have largely been generated by academics and advocates of farm to school programs versus those who are directly involved in school food procurement. By using qualitative methods, this study sought to add depth to our understanding of farm

to school programs by capturing and communicating the perspectives of food service professionals, farmers, and food distributors, three stakeholder groups who are directly involved in efforts to integrate locally grown food into the cafeteria. This paper focuses on the motivations of food service professionals; reports on the perspectives of farmers and distributors will be presented elsewhere.

Methods

Research participants were recruited from seven farm to school programs in the Upper Midwest and Northeast regions of the United States between January and April 2006. Seven food service professionals, seven farmers, and four food distributors participated in the study. Farm to school programs were selected through maximum variation sampling, a purposeful sampling technique aimed at capturing the central themes that emerge from diverse cases (Patton, 2002). This was the most appropriate technique because we were interested in common patterns across farm to school programs. Given the site specificity of farm to school programs, common themes are of particular interest in describing their core experiences. This nonrandom sampling technique also was appropriate because the purpose of our study was to understand the complexity of individual farm to school programs and not to generalize our findings. The Upper Midwest and Northeast regions of the United States were selected as the geographic boundaries of our study to capture a variety of distribution strategies for local food procurement, within an area that is climatologically similar. States in which the programs are located are not revealed to protect the identities of the research participants. To maximize the variation of farm to school programs in our study, we constructed a

matrix of programs that varied on school district and farm to school program characteristics. Eight programs were identified by key informants who were intimately familiar with farm to school programs in their respective regions. One food service professional did not return our phone calls requesting participation in this study. Only those school districts that had been integrating locally grown foods into their school food programs as a regular part of their food procurement routine for at least two years were included in our sample, a length of time we felt would allow stakeholders to articulate the opportunities and challenges to local school food procurement. Food service professionals at seven school districts were invited to participate in our study as were the farmers and food distributors they identified as sources for locally grown food.

In-depth interviews were used as the primary data collection strategy in order to adequately capture the nature of participants' experiences. Procurement documents and menus also were collected and examined in order to cross-check findings and enhance validity of the results. In addition, newsletters, handbooks, government reports, and other such documents were used to provide additional context for the individual cases and to situate each program within the broader national farm to school program effort.

Each research participant was interviewed twice by the first author. The first interview was conducted between January and April 2006 and a follow-up interview was conducted between March and April 2007. The purpose of the first interview was two-fold. First, we wanted to gain insight into the day-to-day reality of participants that is unavailable in the existing literature. Second, we wanted to explore the nature of participants' involvement in their respective farm to school program. For food service professionals, we were interested in why they began buying locally grown foods and how

their efforts have evolved over time. In addition, we were interested in how they characterized the opportunities and challenges to local school food procurement. The purpose of the second interview was to follow-up on themes, concepts, and processes that emerged during the first interview and to investigate the fit of farm to school programs within the participants' overall school food service program.

Table 3-1 provides examples of questions related to this manuscript. All interviews were tape recorded and transcribed verbatim. A semi-structured interview guide was used to ensure that all questions that were important to the research were covered and to accommodate the limited amount of time with each of the participants. The interview guide was an evolving document and was revised regularly to reflect new themes that emerged from the interviews. Although an interview guide was used to maintain control of the interview, the order in which questions were asked and the flow of the interview were flexible. Probes and follow-up question were asked to elicit depth of information and to follow-up on leads initiated by the participants. The interviews with

Table 3-1: Selected sample of questions for food service professional interviews
Can you tell me about your farm to school program? How did it get started? How has it changed over the years?
What are the goals of your food service program? How does farm to school fit into your goals?
What motivates you to buy locally grown foods?
What are the challenges, if any, to buying locally grown foods?

food service professionals lasted between 60 and 90 minutes and took place in their offices although some questions were asked on tours of their food service operation. These tours were invaluable for providing context to the participants' interview responses.

This study was approved through the Human Research Protection Program at Michigan State University (#X05-886). For confidentiality, pseudonyms are used to identify the food service professionals and all distinguishing characteristics are veiled to protect their identities. The data were analyzed in two stages. In the early stages of the study, while data were still being collected, memos were written after each data collection. The purpose of the memos was to systematically summarize the interview immediately after a contact and to capture early interpretations (Miles & Huberman, 1994). In addition, emerging themes and concepts were identified and codes were created. The codes were defined operationally and organized into a code dictionary that included the code name, definition, rule, and example for when each code should be applied. Interview transcripts were coded by the first author and coding was cross-checked by another researcher. Coding was an iterative process. New codes progressively emerged during the analysis and those that were no longer appropriate were discarded while others were broken down into sub-codes or refined. When major code changes were made, data that had already been coded were recoded with a revised dictionary.

After all of the interviews were coded a series of displays for drawing and verifying conclusions about the data were developed. Displays allow researchers to reduce their data and systematically organize answers to their research questions (Miles & Huberman, 1994). Displays increase the chance of drawing and verifying valid conclusions because they are

arranged coherently to allow for careful comparisons within and across cases (Miles & Huberman, 1994). Codes related to food service professionals' motivations for buying locally grown food were identified and passages associated with these codes were extracted from each interview transcript. Codes and passages were compared across the seven food service professionals and organized into a conceptually clustered matrix that included motivations (columns) and school food service professionals (rows). For each cell, a quotation or summary phrase was first entered to indicate the relevance of the motivation for each food service professional. The data in the display was further reduced by using acronyms to indicate themes. Conclusions were drawn about each case and across cases by reading down the columns and across rows. Transcribed interviews and memos were used to verify our conclusions. Atlas.ti 5.2 (Atlas.ti 5.2, Scientific Software Development GmbH, Berlin), a qualitative data analysis software package, was used to code the data, organize memos, and note patterns and themes. Data displays were created by hand.

Results

Sample site and program characteristics are shown in Table 3-2. The farm to school programs were located in rural, urban, and suburban districts and student population ranged from about 2,300 to more than 40,000 students. The free- and reduced-price lunch eligibility rates of the school districts ranged from about 30 to more than 85 percent. Six of the school districts had a warehouse or central kitchen where food could be received. One food service professional did not have central receiving and required farmers to deliver food to more than 15 individual school buildings.

Table 3-2: Selected Farm to School Program Characteristics

School District	**Region**[12]	**Site**[13]	**Student population**	**Free and reduced lunch participation rate**	**Central receiving**	**Distribution strategy**
Tulip Public Schools	UM	R	11,136	30	No	Farm → School
Goosefoot Central School District	UM	U	23,295	81	Yes	Wholesaler → School
Gilliflower Central School District	UM	R	3,451	38	Yes	Farm → School

[12] UM = Upper Midwest, NE = Northeast
[13] R = rural, S = suburban, U = urban

Table 3-2 (cont'd).						
Petunia Public School District	NE	S	2,534	62	Yes	Farm → School
Osmunda Community Schools	NE	S	2,375	36	Yes	Farm → School Distributor → School
Jonquil Public Schools	NE	S	2,597	52	Yes	Farm → School Distributor → School
Bellflower City School District	NE	U	41,089	87	Yes	Wholesaler → School Distributor → School

Three food service professionals indicated that they purchased locally grown food directly from farmers. Four food service professionals purchased locally grown food

through regionally-based mid-tier distributors that buy and sell food on a more regional level as opposed to broadline distributors that operate at a more national level. Two categories of regionally-based mid-tier distributors were identified: (1) produce wholesalers, referred to here as "wholesaler" and (2) distributors that sell produce plus other perishables, referred to here as "distributor." The two school districts with enrollment over 20,000 purchased apples through wholesalers. Three school districts purchased locally grown food through distributors. Two food service professionals used a combination of strategies to purchase locally grown food that included both farmers and wholesalers or distributors.

Three major themes related to why food service professionals participate in farm to school programs emerged from our analysis. In the participants' own words: (1) "the students like it," (2) "the price is right," and (3) "we're helping our local farmer".

The students like it

The importance of offering children nutritious foods that they will eat was emphasized by all of the food service professionals we spoke with. In addition to their need to comply with federal and local nutrition guidelines, the food service professionals talked about their goals to "encourage healthier choices at schools," to provide children with the "freshest possible foods," and to "provide the best quality and nutritious foods we can get to the kids we serve." Six of the seven food service professionals emphasized that children liked the locally grown foods that were added to the menu and the majority (n = 4) said that their students ate more fruits and vegetables when these were sourced from farmers and wholesalers. One food service professional who began buying apples

and potatoes from local farmers in 2004 under pressure from parents extended her local food purchases to include butternut squash, asparagus, and a variety of fresh fruits after she witnessed the positive response from the children. She explained:

> "It used to be that I would stand around the cafeteria and when we would serve like a Red Delicious apple, kids would put them on their plates because they were so shiny and pretty but then they would take one bite and the rest would go in the garbage. And that is not happening anymore. The kids are actually eating their apples, and if the kids aren't eating their apples at lunchtime they're taking them with them, which, honestly, I'd never seen before. That kind of thing really prompts you, encourages you, to want to sell [local] stuff" (Tulip Public Schools, Enrollment: 11,136).

Through analysis of themes and interrelationship of codes, it was found that within this broad category of "students like it," there were three interconnected subcategories that related to this motivation: (1) quality, (2) influence of food service staff, and (2) relationships with farmers. These subcategories mediated the connection between students' food preferences and locally grown food.

Quality. The high quality of product food service professionals were able to source from farmers and wholesalers was a common theme in the interviews. Six out of the seven food service professionals we interviewed compared the products they purchased from a farmer or wholesaler to those purchased through their broadline distributor and indicated that the former were often higher in quality. Freshness of product and flavor were used as indicators of quality.

Food that traveled long distances was seen as less fresh and of inferior quality than food that was locally grown. Whereas their broadline distributor purchased food from across the country, the food service professionals characterized locally grown food as being "picked yesterday" (Gilliflower Central School District, Enrollment: 3,451). One food service professional in the Northeast who had been buying a variety of fruits and

vegetables from a farmer located less than ten miles from her centralized kitchen for more than ten years, described her experience:

> "Imagine, the pinkish hard tomato you can buy today, against [farmer's] luscious, juicy, warm from the earth, picked yesterday tomatoes. It's the quality of the food that really is the greatest benefit" (Osmunda Community Schools, Enrollment 2,337).

Another food service professional also compared the quality of food purchased from a nearby farmer with what she would be able to buy from her broadline distributor.

> "The cauliflower coming off of [broadline distributor] is very consistent sized, kind of small, there's no purple lines going through it or anything. It doesn't quite have the same color or size or yield as [farmer] and obvious to the palate, it's not as fresh. I mean, you could taste a difference between something that's traveled and something that hasn't" (Jonquil Public Schools, Enrollment: 2,597).

Other food service professionals also used flavor as an indicator of quality that differentiated the food they bought from farmers and wholesalers from their broadline distributors. Flavor was tightly tied to the larger variety of product that was available through farmers and wholesalers. For example:

> "Kids eat more of these apples. Instead of getting a red Washington apple all the time they were getting different colors, different flavors, textures...a variety. And I think that makes a difference."
>
> (Goosefoot Central School District, Enrollment: 23, 295)

The Washington Red Delicious apple, a uniformly red apple that has become the quintessential school food service variety, was frequently evoked by the food service professionals to illustrate the quality difference between buying food from a farmer or wholesaler versus a broadline distributor. Larger distributors typically carry limited varieties of a product such as apples due to their need to quickly turnover their products. Therefore, only those apple varieties with high enough demand, such as the Red

Delicious, are regularly stocked. Although Red Delicious apples are attractive, shiny (due to a vegetable wax coating), small in size (which students tend to prefer), and tend to be the most affordable apple variety that most broadline distributors carry, they are not the most flavorful apple. Broadline distributors do carry other popular and more flavorful varieties but they are often too expensive or too big for food service professionals who are buying apples for children. The food service professionals we interviewed purchased a wide variety of apples from farmers and wholesalers including Gala and Empire apples, both which are varieties valued for their sweet flavor, small size, and crunchy texture.

Influence of school staff. The majority of the food service professionals (n = 5) felt that staff played an important role in motivating students to try the locally grown foods on the menu. At Goosefoot Central School District, the addition of locally grown apples in the cafeteria generated excitement among teachers who took their students on field trips to local apple orchards and allowed them to use school food to reinforce their classroom lessons. These teachers encouraged their students to eat the locally grown apples. For example:

> "It actually instilled some excitement with the staff. Some of our teachers were proud to be serving [state] apples. A lot of our teachers go to apple orchards so it was neat to have them served for lunch [...] so we had that link, cafeteria, classroom, field trip. I think they might have said something to the kids and then the kids get a little more attention so they're like huh, maybe I should eat this apple instead of just letting it sit on the tray" (Goosefoot Central School District, Enrollment: 23,295).

One food service professional, a director of an urban school district with more than 60 schools, introduced blue potatoes to her menu and felt that staff encouragement made the difference in terms of which students were willing to try them. Those who tried them generally liked them.

> "In the [school], they really pushed [blue potatoes] from the instructional end of it. And the teachers were bringing in blue potato chips to show that this is the potato and then it becomes this and... try them. And truly, you really can't tell the difference [in taste]. But just getting the kids to the point where they would try them, we needed the help of the instructional staff. So when we did, it worked. I didn't put them in all of the buildings and another manager said 'It did not go here at all. They wouldn't even touch them.' But we didn't have the instructional staff on board...So, that plays a role" (Bellflower City School District, Enrollment: 41,089).

Five food service professionals felt that food service staff support for their farm to school program effort influenced students' consumption of locally grown foods. The staff at four of the school districts began supporting the farmers who delivered product to their school districts with orders for their own personal consumption. At Osmunda Community Schools (Enrollment, 2,337), the food service professional described her staff as being proud to be able to serve high quality food and that this pride had a "trickle down effect" onto the students.

Relationships with farmers. Five of the farm to school programs we studied had formed direct relationships between the farmer and the school and four talked about the importance of this connection. This relationship gave food "the local feel" (Tulip Public Schools, Enrollment: 11, 136) that these food service professionals felt influenced students' consumption of these foods and their staff's support for the program. The connection between students and farmers was made informally when farmers dropped off their product and formally through farmer visits to the cafeteria, point of sale signs and placards in the cafeteria, announcements in school newsletters, and menu symbols denoting which products came from local sources. At Tulip Public Schools, the farmer made weekly visits to individual school buildings to deliver the product. During his visits, he "walked the halls" to help students understand that the apples served in the

cafeteria were grown and delivered by a farmer. According to the food service professional, this connection was critical to students' preference for these foods.

> "I think the fact that [children] know that it's local and they know where it came from, and they know it's from [farmer], the apple guy, or whoever it is – I think that does play a big role in the participation [in school lunch]. Because if you don't market it as local, I don't think the kids — I think they would take it or not take it just like they did any other food item and not even think twice about it [...] it's hard to say that participation rates go up just because of local foods, but it's for sure a fact that if you are promoting something local and kids know where the food came from, and they know that it tastes good, they will take more of it" (Tulip Public Schools, Enrollment: 11, 136).

Similarly, one food service professional who has been buying food from a nearby farmer for ten years, tied locally grown food to "cool food" (Jonquil Public Schools, Enrollment: 2,597). The relationship between the farmer and students turned the farmers' fruits and vegetables into cool foods. She explained:

> "The kids just love [farmer]. He's one of the coolest guys in the world. And if we're able to do that, it becomes a cool food and kids like cool foods, you know. They don't want things that aren't cool" (Jonquil Public Schools, Enrollment: 2,597).

Thus, the symbolic meaning of the food was seen as an important factor in students' food choices.

The price is right

All seven of the food service professionals were motivated to continue buying food from their farmers and wholesalers because these products were priced competitively with, and were often lower than, comparable products carried by their broadline distributor. This price differential, even when small, was seen as a benefit of buying locally grown food. All seven food service professionals talked explicitly about

the advantages of shortened supply chains. When food is purchased through a broadline distributor, the transportation and handling costs for each of the middlemen (e.g. brokers, wholesalers, shippers) is included in the price. Shortening the supply chain through farm direct purchases helped food service professionals save money on typical school food items such as apples and made expensive items such as asparagus, more affordable. For example:

> "I wouldn't order asparagus from [broadline distributor] because that would be too expensive. And I think what I paid for [farmer's] asparagus last year was $1.48 a pound. The cheapest I've ever seen it at [supermarket] is $1.99 a pound. So, it was still an expensive vegetable to have, but we made sure every child had one piece. I mean, just to try it because most of them have never [tried it]" (Petunia Public School District, Enrollment: 2,534).

In addition to savings associated with shortened supply chains, lower prices were influenced by product specifications. Whereas broadline distributors must use standardized product specifications to serve their broad customer base, the farmers and wholesalers interviewed had more flexibility. Due to the nature of their operation, broadline distributors only carry products that meet U.S. Department of Agriculture (USDA) standards for Extra Fancy and Fancy grades and their own internal standards of quality. In addition, the product must be packaged in boxes with cardboard trays and foam liners, all of which adds to the final price. The food service professional at Osmunda Community Schools explained that schools do not necessarily need the extra services provided by broadline distributors. For example, since the apples are not traveling far and handling is minimal, they can be packed loose in a box, saving $2.00 per case. These boxes were often returned to the farmer, which helped to keep prices low and

contributed to farmers' profits. In addition, depending on how the food will be used, a "perfect" product is not always needed. She said:

> "I think schools are great markets for food that shouldn't be in retail. I will take the outsize apples. [Farmer] will bring me bushels of apples, the tiny ones, and that's great for our kindergarteners, our first grades. We sort them out and the big ones children here [middle school] love so I think we're a great market for off-size. We don't need the perfect size apple. That's great for retail, that's what sells. But in schools, we can take the carrots that have "s" in them because we'll clean them, we'll take the skin off and then we'll chop them up and it doesn't matter to us. They'll end up in the homemade soup that day, or on top of salad. So for us, we're a good market and I don't think farmers realize that" (Osmunda Community Schools, Enrollment: 2,337).

A second food service professional further illustrated the price advantage of flexible specifications with her experience of buying broccoli directly from a farmer. She explained:

> "With the farmer, I could specify what I wanted. I said I didn't want a whole lot of stalk because I wasn't buying it by the pound I was buying it by the crate, so he cut that down for me [...] And then I didn't want a twist tie on it. You know how broccoli comes like that? And I didn't want that because that would have been an extra labor step for me. So I could specify that, which was a pretty good thing. But he asked me about that. I wouldn't have thought of that. That wasn't my idea, it was his idea. So that was pretty good because you could specify pretty much what you wanted" (Petunia Public School District, Enrollment: 2,534).

Direct relationships with farmers and wholesalers also allowed food service professionals to take advantage of products that farmers needed to sell quickly. Produce is perishable and when farmers were not able to sell it through their other market outlets they sold it to schools, directly or indirectly through a wholesaler, for a low price. This strategy, also known as opportunity buying, allowed food service professionals to buy foods that are not typically offered in the cafeteria such as butternut squash, Asian pears, and blue potatoes, at below market value, and gave farmers a market for their product.

Two food service professionals found that at times, prices for products such as tomatoes were higher when purchased directly from a farmer than through their broadline distributor. However, because they were able to get a higher yield with their farmer's product, the price per serving was lower than a comparable product purchased through their broadline distributor. The higher yield was attributed to the high quality of the product which resulted in less waste. This tactic, which one food service professional called "yield testing" or "creative purchasing" (Jonquil Public Schools, Enrollment: 2,597) was used to justify purchasing directly from a farmer. "Creative purchasing" provided a way for these food service professionals to follow procurement regulations, which placed priority on price, while still supporting their local communities.

We're helping our local farmers

The final theme that emerged from our analysis suggests that the food service professionals interviewed were motivated to participate in farm to school programs because they hoped they were "helping our local farmers" (Bellflower City School District, Enrollment: 41,089). All but one food service professional talked explicitly about their farm to school program as a way to connect students to the source of their food — where it was grown and the farmer who grew it — and the importance of supporting the local community. However, food service professionals' desire to support local farmers went beyond using their procurement decisions as an educational tool. They expressed genuine concern about farmers' livelihood, which at times, was based on sympathy or empathy. For example:

> "I just get a really good feeling. When I see [farmer] and just knowing that we're helping a local guy out. I mean, he's just trying to make it just like

> anyone else. And it's nice to know we're helping him. And I guess I just get a good feeling about that" (Gilliflower Central School District, Enrollment: 3,451).

The food service professionals' regard for farmers is evident in this comment as well as others expressed throughout the interviews. For example, when asked what she would do if two of her farmers both had tomatoes to sell, she indicated her support for both farmers by saying, "I would probably buy a little from each" (Petunia Public School District, Enrollment: 2,534). Another food service professional said that even though she was supposed to select vendors through a competitive bidding process, she would find a way to continue supporting her current farmers.

The majority of the food service professionals did not tie their procurement decisions to larger food system trends and instead expressed a strong desire to support "their farmers" — those that were already supplying them with fresh produce. Two food service professionals articulated a more long-term view. For example:

> "I think we've got two percent of our population on farms and that's real close to zero, you know? That's frightening. That frightens the hell out of me. I want my grandkids to go to a farm and buy food, not have it manufactured and I don't think people really understand the risks and the things that are going on with our food system right now. There's an awful lot to our quality of life that depends on those farms, especially the small farms" (Jonquil Public Schools, Enrollment: 2,597).

The concerns expressed by the food service professionals were an important motivator for their local food procurement efforts. Buying locally grown food, especially directly from a farmer, required extra effort that the food service professionals did not feel their peers would be willing to exert unless they had some level of concern for farmers or the food system. As one food service professional at (Jonquil Public Schools

Enrollment, 2,597) summed up, buying locally grown food is "not just a business decision."

Discussion

This study suggests that food service professionals' motivations to buy locally grown food are diverse and complex. The broad themes — "the students like it," "the price is right," and "we're helping our local farmers" — create the illusion of independent categories. However, these themes are very much interrelated and together illustrate food service professionals' efforts to balance their child nutrition and financial goals with their desire to support their local community.

Recent quantitative studies have highlighted the fact that food service professionals perceive that one strong benefit of farm to school programs is the support it provides the local community (Gregoire & Strohbehn, 2002; Izumi, Rostant, Moss, & Hamm, 2006). These studies were designed to gather data on food service professionals' perceptions of local school food procurement and to collect operational information such as purchasing practices and preferences (Gregoire & Strohbehn, 2002; Izumi, Rostant, Moss, & Hamm, 2006). Both studies asked respondents to select or rate potential benefits from a list generated by the researchers. A study of food service professionals in Iowa, Kansas, Nebraska, and Minnesota reported that another perceived benefit of buying locally grown foods was enhanced public relations (Gregoire & Strohbehn, 2002). In addition, schools in communities of less than 1,000 people rated ability to purchase smaller quantities of food, availability of fresher food, and availability of safer food as important benefits, suggesting a stronger link with agriculture in more rural communities

in the Midwest (Gregoire & Strohbehn, 2002). Izumi et al. (2006) reported that in addition to supporting the local community and economy, food service professionals in Michigan would be motivated to buy locally grown foods for their school food program because doing so would allow them to access fresher and higher quality foods, generate good public relations, and purchase smaller quantities. The clear connections between buying locally grown food and supporting the local community, fresher food, and higher quality food were observed in our study of seven food service professionals. However, good public relations, ability to purchase smaller quantities and safer food were not strong themes in our study.

To our knowledge, no other qualitative studies have examined food service professionals' perceptions of farm to school programs. Clearly the perspectives of the food service professionals we interviewed tend to confirm anecdotal reports suggesting that such programs benefit both food service professionals and children (Azuma & Fisher, 2001; Tropp & Olowolayemo, 2000). According to Tropp and Olowolayemo (2000:6) direct relationships with local farmers have allowed some food service professionals to obtain fresher food than they would normally be able to buy through their "long-distance suppliers." Other benefits included decreased transportation and handling costs, and a greater variety of produce — especially highly perishable or specialty items which are typically only available through broadline distributors at a high cost. One food service professional in their report said she noticed an increase in fresh fruit and vegetable consumption among her students after she began buying these foods from local sources (Tropp & Olowolayemo, 2000). She attributed the change to the increase in variety of fruits and vegetables she was able to offer after she began working

with local farmers through the Department of Defense Fresh Fruit and Vegetable Program (DoD-Fresh), part of the USDA commodity entitlement program.

Our findings add depth and complexity to the link between locally grown food and children's food preferences that has been observed by others (Azuma & Fisher, 2001; Tropp & Olowolayemo, 2000). The food service professionals we spoke with associated children's preference for locally grown food with the superior quality of the products they were able to buy from farmers and wholesalers. They explicitly stated that this same level of product quality was not available or affordable through their broadline distributor due to the inflexible specifications of large food distribution companies. Variety, flavor, and freshness were used as key indicators of quality. In addition to and related to quality, relationships with farmers appeared to have an important direct and indirect influence on children's food preferences. Relationships between children and farmers changed the symbolic meaning of locally grown food to "cool food." Relationships between food service staff and farmers generated support for farm to school which some food service professionals speculated had a "trickle down effect" onto students.

The finding that the price of locally grown foods sourced through a farmer or wholesaler was competitive with, and often cheaper than, food carried by broadline distributors runs counter to the common perception among food service professionals that locally grown foods are costly (Izumi, Rostant, Moss, & Hamm, 2006; Joshi & Beery, 2007; Oklahoma Food Policy Council and Kerr Center for Sustainable Agriculture, 2003). Shortened supply chains and relationships with farmers and wholesalers were important variables that made these foods affordable. It is important to note that none of the locally grown foods purchased by the food service professionals were certified

organic, which is typically cost prohibitive for schools. In addition, lightly processed items such as washed and chopped lettuce, or peeled and cubed butternut squash, is generally more expensive than whole, unprocessed fruits and vegetables. The food service professionals we interviewed already had, if needed, the equipment and labor necessary to prepare whole fruits and vegetables and therefore did not have to pay the extra costs associated with lightly processed items. The additional labor and equipment needed to prepare whole fruits and vegetables has been shown by others as a barrier to local school food procurement (Joshi & Beery, 2007).

Our study provides additional insight into why food service professionals buy locally grown food for their school food program and begins to show the relationships between the perceived benefits reported in quantitative surveys and anecdotal reports. The food service professionals' emphasis on the positive impact of farm to school programs on their students' fruit and vegetable consumption and their financial bottom-line suggests that fit with school food program goals is an important motivator for and benefit of buying locally grown food from farmers and wholesalers. These goals can be broadly defined as promoting child nutrition and achieving financial solvency. The latter is seen as urgent in today's fiscal climate especially as the cost of food continues to escalate (March & Gould, 2001; Snyder, Lytle, Pellegrino, Anderson, & Selk, 1995; Story, Kaphingst, & French, 2006). The food service professionals also were motivated by a strong desire to support their local community. This finding resembles the symbolic sense of community and ethic of care that has been identified among consumers as a motivator for buying locally grown food (Holloway & Kneafsey, 2000; Kirwan, 2004;

Sage, 2003; Winter, 2003). Farm to school programs were thus a tangible way for the food service professionals we interviewed to help farmers and support local agriculture.

As described in previous studies and reports, food distributors can play an important role in farm to school program efforts (Berkenkamp, 2006; Gregoire & Strohbehn, 2002; Izumi, Rostant, Moss, & Hamm, 2006). They allow schools that are already buying food directly from farmers to expand their local food purchases and make these foods available to schools that do not have the capacity for or interest in farm direct procurement. However, the perspectives of food service professionals in our study emphasizes that all food distributors are not equal in terms of the products they are able to offer. Critically, our analysis shows that there are ancillary benefits such as lower prices, flexible specifications, and the "local feel," that came with the personal relationships with farmers and wholesalers involved in these farm to school programs. As dominant school food service distributors seek to take advantage of the growing niche market of local school food procurement, food service professionals should be aware of the advantages and disadvantages of buying locally grown food through different types of intermediaries.

Although four of the seven food service professionals we interviewed identified regionally-based mid-tier food distributors as one of their sources for locally grown food, the benefits or motivators they mentioned were primarily associated with produce wholesalers but not the distributors who carried produce plus other perishables. The latter are family-owned and operated and buy food from local farmers whenever possible in large part to capture the benefits — decreased costs and higher quality — that come with reduced transportation time. During the Upper Midwest and Northeast region growing

season (approximately May through October), 25 to 80 percent of the produce these distributors carry are grown locally (Izumi, Wright, & Hamm, 2008a). Thus, food service professionals who purchased food from these distributors were *de facto* buying locally grown food. It is not clear why the food service professionals did not talk specifically about the local food that they purchased through these distributors. However, since these distributors did not always market their locally grown products as "locally grown," it is not surprising that the food service professionals did not associate those products with their farm to school program efforts.

Limitations

This study has several limitations that need to be addressed. First, the small sample and maximum variation sampling technique used means that our findings cannot be generalized beyond the seven farm to school programs we studied. The participants were identified through key informants and thus, the motivations discussed may not be relevant to other food service professionals. The rich descriptions of the food service professionals' experiences allow readers to assess the relevance of this research to other farm to school programs. Second, the results may be biased by the set of questions asked, as well as by the analysis. To minimize the effect of such bias, open-ended questions were asked and coding and analysis was cross-checked by a researcher who was not involved with the study. Third, the interviews were conducted in the spring when the food service professionals were not buying a whole lot, if any, locally grown foods. It is possible that had they been interviewed in the fall when they were at their peak in terms of local food procurement, their responses might have been different. Finally, the terms

"farm to school program" and "local school food procurement" were used interchangeably throughout data collection and analysis. However, all of the research participants in this study may not have equated the two terms. When we were uncertain about how participants' used the terms "farm to school program or "local school food procurement," we made follow-up phone calls for clarification.

Implications for research and practice

This study demonstrates that food service professionals buy locally grown foods because doing so helps them to balance their need to meet their food service program goals with their desire to support their local community. Relationships with farmers and vendor characteristics emerged as important variables that may have contributed to the benefits that these food service professionals expressed. This study suggests a relationship between locally grown food and potential benefits such as increased consumption of fruits and vegetables among children. However, much more research is needed to better understand how these and other variables influence children's short- and long-term dietary habits so that supportive programs and policies can be developed.

The results of this study also emphasize the need for food service professionals to understand the advantages and disadvantages of buying locally grown food from different intermediaries as well as their own motivations (e.g. improving children's fruit and vegetable intake) and interest in local food procurement. More research is needed on how different types of intermediaries influence the benefits attributed to farm to school. For example, what is the impact of intermediaries on the potential of farm to school to provide a viable market opportunity for farmers? How do different types of

intermediaries, through their selection and prices of fruits and vegetables, influence children's consumption of these foods? Do intermediaries pass freight savings, associated with decreased transportation, on to schools? Research addressing these and other questions are needed now as school districts across the country seek to institutionalize local food procurement into school food programs.

Whether buying locally grown food directly from a farmer or from a distributor, connecting children and food service staff to the source of their food — where and how it was grown and who grew it — appears to be a key mediator between locally grown fruits and vegetables and children's consumption of these foods. Therefore, as schools increasingly look to distributors for their local food needs, educational materials that retain or create a link from farms to schools will be important.

CHAPTER FOUR:

PERSPECTIVES OF FOOD DISTRIBUTORS

Introduction

Farm to school programs in the United States were established in the mid-1990s as a way to connect schools with local agriculture. While all programs are site-specific, they are "generally intended to bring healthier, fresher food to school meals programs while at the same time supporting local farmers by providing an additional source of income and a relatively secure market" (Vallianatos, Gottlieb, & Haase, 2004:415). By cutting out the "nefarious middleman," advocates have argued that farm to school has the potential to simultaneously address decreasing market opportunities for small- and mid-size family farmers and improve children's health (Allen & Guthman, 2006:408; Azuma & Fisher, 2001). According to Vallianatos et al. (2004:415), school food service represents a "potentially huge" market for farmers who could sell their products directly to schools. In fiscal year 2006, the federal government put more than ten billion dollars into the National School Lunch and Breakfast Programs, federally assisted meal programs operating in public and non-profit private schools and childcare centers in the United States (U.S. Department of Agriculture Food and Nutrition Service, 2007a, 2007b) To the extent that farm-fresh produce improves the school food environment by supplementing school meals or supplanting the high-fat, high sugar competitive foods that are available for sale at school, they have the potential to improve children's health.

However, actually getting the food from farms to schools has emerged as one of the key challenge of developing and maintaining farm to school programs (Allen &

Guthman, 2006; Berkenkamp, 2006; Gregoire & Strohbehn, 2002; Izumi, Rostant, Moss, & Hamm, 2006). As a result, the program model has in part evolved to include various distributors including more alternative produce purveyors such as those operated by non-profit organizations, as well as more conventional distributors like Systems and Services Company (SYSCO), a publicly traded company that is the largest food service distributor in the United States. Most school food programs in the United States already rely on "broadline" distributors like SYSCO for their food and non-food (e.g. paper products, cleaning supplies, plastic cutlery) supplies. Broadline distributors, also referred to as "long-distance suppliers" or "prime vendors," are in essence, one-stop-shops which carry nearly all of the food, supplies, and equipment needed to operate a food service kitchen. The involvement of SYSCO and other dominant food service actors in farm to school program efforts have raised questions among some advocates who, while recognizing the need for intermediaries, question whether these large corporations share their broader commitment of moving towards an agrifood system based on social justice, environmental sustainability, and economic viability (Azuma & Fisher, 2001; Ohmart & Markley, 2007). While all advocates of farm to school programs may not share these values, the national effort to systematically integrate locally grown food into school cafeterias emerged from these basic principles (Azuma & Fisher, 2001).

In recent years, the number of farm to school programs in the United States has proliferated. The National Farm to School Network[14], a portal for activities and resources

[14] The National Farm to School Network is a collaborative effort between the Center for Food and Justice and the Community Food Security Coalition that provides technical assistance and resources to farm to school programs across the country. The Network provides technical assistance, policy advocacy, media and marketing services, networking opportunities and informational resources to farm to school programs across the country. It was launched in 2007 with the purpose of institutionalizing farm to school programs as sustainable models for "improving the economic viability of family-scale farmers and supporting child nutrition efforts" (National Farm to School Network, n.d.).

for starting and sustaining efforts to link farms with schools, estimates that there are now more than 1,900 programs, up from 400 in 2005, that are connecting their students with local agriculture either through the cafeteria or the classroom (National Farm to School Program, 2007). Data remain scarce on how many of these programs have integrated locally grown foods into their cafeterias. However recent state legislative actions that encourage schools to buy locally grown food — defined most often as food grown within state boundaries — for their school food programs are evidence of the growing interest in local school food procurement (Commonwealth of Massachusetts, 2006; Kentucky Legislature, 2006; U.S. Dept of Agriculture Food and Nutrition Service, 2002). This interest comes from diverse groups of people in different social locations, from policy makers to farmers to corporations.

The speed with which advocates have garnered broad based support for farm to school programs has placed national and local efforts at a critical crossroads. As support for these programs has increased, the focus has shifted from emphasizing "local" as a means to create market opportunities for small- and mid-size family farmers to a means to boosting states' agricultural economies. These two end goals are not necessarily contradictory. However, this shift in focus potentially undermines the transformative potential of farm to school programs by making them vulnerable to cooptation by dominant school food procurement actors who want access to the local food market but whose practices do not, currently, align with the values articulated by early farm to school program advocates. But participation of intermediaries in farm to school programs is not undesirable — food distributors are critical to the programs' long-term success.

Although rarely discussed, regionally-based mid-tier food distributors may play an important role in enabling farm to school program advocates to achieve their goals. They can be conceptualized as food distributors that buy and sell food on a more regional, as opposed to more national or international scale. According to various scholars, such mid-tier enterprises are part of an agriculture-of-the-middle that has been disadvantaged by increasing concentration and consolidation in the agrifood system (Kirschenmann, Stevenson, Buttel, Lyson, & Duffy, 2004; Stevenson & Pirog, forthcoming). We suggest that the food distributors profiled here, all of which are currently involved in efforts to link farmers with schools, have the potential to help institutionalize farm to school programs. Notably, their relationships with farmers, which allow them to differentiate themselves from their broadline competitors, may be a critical element in expanding the scale and scope of these programs without compromising the basic principles from which they emerged.

This paper is divided into three sections. First, we draw upon recent literature on the embeddedness of alternative agrifood networks (AAFN) to provide a theoretical basis for farm to school programs. Second, we describe the oppositional character of these programs, how they potentially differ from traditional school food procurement, and how these differences create challenges to integrating locally grown food into the cafeteria. Then, we draw from research conducted in the Upper Midwest and Northeast regions of the United States and present four cases which illustrate regionally-based food distributors' perspectives on farm to school programs. The paper concludes with a discussion of the cases and of the potential of these food distributors to act as program conduits.

Embeddedness: A theoretical basis for farm to school programs

Various scholars have used the notion of embeddedness to distinguish more alternative systems of food production, consumption, and distribution that are not based exclusively on commodity relationships. "Embeddedness expresses the idea that the economy is not autonomous as must be assumed in self-regulating markets, but subordinated to politics, religion, and social relations" (Block, 2001:xxiii). The origin of this idea can be traced back to Polanyi's ([1944] 2001) critique of the market economy. He argued that until the 1800s, markets had always been embedded in the social and cultural fabric of our societies (Polanyi, [1944] 2001). Economic systems were organized around the principles of reciprocity, redistribution, and householding or a combination of the three. However, beginning with the Industrial Revolution in nineteenth-century England, societies became increasingly subordinated to the demands of capital. As long-standing relations of reciprocity and redistribution were displaced by the market economy — an economic system directed exclusively by price signals — the market became increasingly disembedded from society. Polanyi ([1944] 2001) argued that a disembedded, fully self-regulating market economy requires that humans and the environment be turned into commodities, produced for sale in the form of labor and land. However, they are not commodities and don't behave as such. As the destructive consequences of treating humans and the environment as commodities become apparent, Polanyi ([1944] 2001) argued that people will resist, the state will intervene and the economy will swing back towards a more embedded position.

Polanyi's ([1944] 2001) insights, particularly the centrality of price and the notion of embeddedness, are especially relevant in "today's new-old reality [where] we are

witnessing a systematic project to eliminate all impediments to the freedom of capital...regardless of the social and environmental consequences" (Jaffee, 2007:21). At the same time, we are witnessing the rise of a more alternative agriculture and food system comprised of various networks such as farmers' markets, community supported agriculture, fair trade, and food box schemes (Wright & Middendorf, 2007). AAFNs are based on the purposive incorporation (or re-embedding) of values such as morality, environment, and health into the production and consumption of food (Kirwan, 2004). Scholars have argued that if such values are communicated to the consumer, they have the potential to create a comparative advantage in the marketplace and thus contribute to rural development (Kirwan, 2004; Marsden, Banks, & Bristow, 2000). In other words, consumers will select certain foods based on the qualities (e.g. fair trade, localness, organic) that they embody. Producer-consumer relationships are critical in constructing value and meaning for such products. These relationships are mediated through face-to-face interactions between producers and consumers, proximate relationships such as those between consumers and their locally focused food cooperative, and through more spatially extended means such as certification schemes (Marsden, Banks, & Bristow, 2000; Renting, Marsden, & Banks, 2003).

More recent analysis of the producer-consumer linkages in AAFNs such as farmers' markets has added complexity to our understanding of the relationships that undergird these networks (Hinrichs, 2000; Kirwan, 2004; Winter, 2003). Hinrichs (2000) for example, reveals tensions between embeddedness and economic self-interest in her analysis of farmers' markets and community supported agriculture. She builds on Block's (1990) understanding of market behavior and applies the continuums of marketness and

instrumentalism to direct market transactions (Hinrichs, 2000). She concludes that these concepts offer important correctives to "overly sanguine" interpretations of direct agricultural markets (Hinrichs, 2000:301). The continuum of marketness describes the importance of price in economic transactions.

> "High marketness means that there is nothing to interfere with the dominance of price considerations, but as one moves down the continuum to lower levels of marketness, non-price considerations take on greater importance. It is not as though prices are irrelevant under conditions of low marketness, it is just that they compete with other variables, so that one would expect price differences to be much larger before they lead actors to respond" (Block, 1990:51).

Commodity markets represent transactions at the high end of the continuum while transactions between family and friends, where price competes with other variables such as social relationships, may occupy the lower end.

The notion of instrumentalism supplements marketness and is useful for taking a closer look at the motives of economic actors (Block, 1990). At the one end of the continuum, behavior is motivated only by economic self-interest. As one moves down the spectrum to lower levels of instrumentalism, non-economic variables such as friendship, family, and morality are placed ahead of economic self-interest. Thus, as the importance of price decreases (low marketness), economic behavior tends to become more embedded in non-price considerations (low instrumentalism). According to Block (1990:55), "the existence of nonopportunistic behavior is evidence of embeddedness." However, he also points out that high marketness is not always associated with high instrumentalism and vice versa because people can pursue their economic self-interest in ways that have nothing to do with price. Evaluating AAFNs through the lens of marketness and instrumentalism in addition to embeddedness, is critical to assessing their long term

potential because they reflect the reality that all economic activities, including farming, must return reasonable profits in order to survive (Watts, Ilbery, & Maye, 2005).

Recently, scholars have called for a more "holistic" approach to using embeddedness that considers the "horizontal" and "vertical" dimensions of AAFNs (Sonnino & Marsden, 2006:189). The horizontal facet provides insight into the local context in which AAFNs take shape while the vertical considers the larger political, institutional, and regulatory context in which they operate (Sonnino & Marsden, 2006). This approach is particularly useful for analyzing the transformative potential of farm to school programs because it places them within their publicly funded context.

Farm to school programs: A new mode of school food provisioning?

Farm to school programs differ substantially from traditional school food procurement both in purpose and practice. Although both are designed to promote health among children and provide markets for domestic agricultural products, the goals of farm to school programs with respect to the latter, are more specific. As stated in one of the earliest program documents by Azuma and Fisher (2001:5),

> "Farm to school projects across the country universally seek to involve independent farmers of various types: cooperatives, small farmers, family farmers, organic farmers, and local/state/regional farmers. While one could debate about strict definitions for each of these terms, the overall thrust of these programs is supporting agriculture that is more localized and sustainable than large-scale, chemical intensive, industrial-style agriculture."

In traditional school food procurement, price tops the list of criteria food service professionals use when selecting a vendor (Daft, Arcos, Hallawell, Root, & Westfall, 1998). In Block's (1990) terms, traditional school food procurement represents

transactions that take place at the high end of the marketness scale. In contrast, farm to school programs emphasize non-price factors such as localness and non-economic values such as community and equitable payments to farmers. Like other AAFNs, farm to school programs reflect the non-opportunism of embeddedness. For example, surveys of food service professionals in the Midwest suggest that the ability to support the local economy and community through local food purchases is a key motivator for connecting their cafeterias with local farms (Gregoire & Strohbehn, 2002; Izumi, Rostant, Moss, & Hamm, 2006). A tight fiscal climate and school food procurement regulations however, make it difficult for schools to divert from their typical practice of using the lowest price as their primary criteria in selecting food vendors. In other words, the value of the local embeddedness of production does not give vendors of locally grown food a comparative advantage in the school food marketplace.

School food programs, once a regular line item in school district budgets, must now be self-supporting and in addition to food and labor, also must pay for expenses such as equipment and utilities (Story, Kaphingst, & French, 2006). Revenue is generated primarily through federal reimbursements and food sales. Schools participating in federal food programs receive reimbursements based on the number of meals served and the eligibility status of the student and the school (Food and Nutrition Service USDA, 2007b). Children in families at or below 130 percent of the poverty line ($26,845 for a family of four) are eligible to receive free meals and those in families between 130 and 185 percent of the poverty line are eligible to receive reduced-price meals. Schools that serve a high percentage of children who qualify for free- or reduced-price meals ($\geq$ 60 percent) receive slightly higher meal reimbursements than those with fewer children who

are eligible for free- or reduced-price meals. For example, in the 2007-2008 school year the USDA reimbursed schools that served a high percentage of children from families with low incomes, $2.49 for every free meal served, $2.09 for every reduced-price meal served, and $0.25 for every paid meal sold. In addition to the money spent on lunch by students who are not eligible for a free- or reduced-price meals, most schools also generate revenue through competitive food sales (i.e. all foods for sale at school except reimbursable meals), catering, and grants (Lewi & Coppess, 2007). Moreover, schools participating in the National School Lunch Program (NSLP) also are eligible to receive, in addition to cash reimbursements, $0.1875 in commodities for each lunch served (Food and Nutrition Service USDA, 2007a). About 35 to 40 percent of revenue, including the value of commodities, is spent on food (Berkenkamp, 2006; Pannell-Martin Dorothy, 2007). This means that schools have on average, $0.63 to $0.72 to buy all of the food needed for a reimbursable lunch: one serving bread/grain, two servings fruit/vegetable, one serving milk, one serving meat/meat alternative (Lewi & Coppess, 2007).

As publicly funded institutions, schools participating in the NSLP must follow federal procurement regulations and bid their products in a way that ensures open and free competition. This means that schools are prohibited from using geographic preferences[15] when selecting a vendor. Since food service professionals operate under intense time pressures they prefer vendors that can assure adequate volume, quality, adherence to food service specification, and timely, accurate deliveries (Berkenkamp, 2006). If these (and other) criteria are equal, schools typically use low price criteria to justify their selection. This system favors broadline distributors who can provide schools

[15] In reality, many farm to school programs use geographic preferences when they request produce bids only from local farmers or identify local produce varieties on their produce bids.

with access to a large variety of fruits and vegetables packaged and processed to food service specifications and who can offer streamlined service, competitive prices, and the convenience of buying both food and non-food items. In addition, some broadline distributors offer rebates and early payment discounts that can save even smaller schools thousands of dollars per year. For example, in the 2006-2007 school year, one school district of about 11,000 students in our study saved more than $30,000 in rebates and early payment discounts offered through their broadline distributor, which in the food service professional's own words, is "real money that is hard to give up" (Tulip Public Schools, 2008).

While food service professionals across the country have expressed interest in buying food directly from farmers, several barriers prevent them from integrating farm-fresh products into their cafeterias. Distribution has been identified as the primary barrier and includes delivery (e.g. ordering, receiving, storing) issues as well as the additional administrative work involved when dealing with additional vendors (Berkenkamp, 2006; Izumi, Rostant, Moss, & Hamm, 2006). Incompatibilities between the growing season and school year in most of the country, handling whole (unprocessed) product, and limited awareness of seasonal availability of products also are barriers to buying locally grown food from farmers (Berkenkamp, 2006). Farmers who supply or have supplied food to schools have shared similar concerns (Izumi, Wright, & Hamm, 2008b). Consistently low volume orders, and therefore low economic returns, have been cited as a key challenge to working with schools (Izumi, Wright, & Hamm, 2008b; Ohmart, 2002). As a result of the challenges associated with developing and maintaining direct face-to-face relationships with farmers, various intermediaries have become important

stakeholders in bridging these two sectors of the food system. These include more alternative intermediaries that operate outside market norms as well as large commercial distributors who currently dominate the school food service market.

Two food distributors whose practices align with more alternative agrifood systems are Growers Collaborative and Red Tomato. Growers Collaborative is a California-based distributor that was formed in response to increased consumer demand for locally grown fruits and vegetables (Growers Collaborative, n.d.). The Collaborative is owned and operated by the Community Alliance with Family Farmers, a nonprofit organization based in California that fosters family-scale agriculture and distributes food from farmers to public institutions such as schools and corporate cafeterias in California. Farmers who sell their product to Growers Collaborative set their own prices and these prices are communicated to the customer. The Growers Collaborative model is based on transparency throughout the supply chain; customers can evaluate their willingness to pay farmers' prices based on farmers' profiles with which they are provided, that communicate information about who grew the product and how it was grown.

Red Tomato is a nonprofit organization located in Massachusetts that distributes to a variety of different market outlets, including school cafeterias, produce grown by family farmers in the Northeast and Southeast regions of the United States who use ecological growing practices. A major explicit goal of the organization is "to help family farmers survive in a market dominated by global agribusiness" (Red Tomato, n.d.). Fair trade principles are applied to Red Tomato's approach to food distribution — farmers are paid a fair price for their product within 21 days regardless of payment by customers. Red Tomato develops new wholesale markets and helps farmers develop sustainable farming

practices and produce products that are in higher and more stable demand. Red Tomato and Growers Collaborative are examples of intermediaries whose business practices reflect some of the underlying principles of values-based value chains[16] that are emerging across the country.

Value chains have long been used in complex-product industries such as automobiles and high-end apparel. They are partnership-based enterprises that attempt to "maximize value for the partners and for the end customers of a particular product or service" and are based upon the following key principles (Stevenson & Pirog, forthcoming): trust throughout the network; shared vision, information, and decision making; commitment to the economic welfare of all partners. According to Stevenson and Pirog (forthcoming), the value chain model may represent an opportunity for regionally-based, mid-tier agrifood enterprises that want to differentiate themselves from their larger competitors. Mid-tier food value chains are strategic partnerships between midsize independent food enterprises. They "*contrast with and complement well the focus on the local for direct food marketing systems and on the global for commodity food marketing strategies*" due to advantages such as fuel efficiencies and real time information (Stevenson & Pirog, forthcoming). Growers Collaborative and Red Tomato reflect the type of value chain partnerships that may be particularly important for rebuilding the agrifood infrastructure that, in addition to farmers and farm workers includes regionally-based processors, distributors, and retailers.

As farm to school programs have gained popularity among school districts across the country, broadline distributors have begun to access this niche market by promoting locally grown food to their food service customers. SYSCO's Buy Local Sell Fresh

[16] Hereafter, "values-based value chains" are referred to as "value chains."

campaign is prominent among such efforts (Kennedy, 2007). Unlike Growers Collaborative and Red Tomato, SYSCO is primarily motivated to buy and sell locally grown food to "promote a positive public image" for their corporation (Kennedy, 2007:108). Their definition of "local" typically is tied to distribution areas which can range anywhere from 5,000 to 180,000 square miles and in some cases, may even include an entire region such as the Pacific Northwest. Although the campaign is ostensibly aimed at relocalizing food systems, according to Kennedy (2007:110), it has been "more of a marketing tool than it is a description of [their] procurement activities. In sharp contrast to more alternative intermediaries, SYSCO's personal connections with suppliers, including farmers, are kept to a minimum because this type of relationship is considered "inefficient," "inconvenient," and "time consuming" (Kennedy, 2007:105).

Some scholars have argued that even spatially extended AAFNs can reflect notions of embeddedness that characterize face-to-face interactions between producers and consumers (Marsden, Banks, & Bristow, 2000; Renting, Marsden, & Banks, 2003).

> "It is not the number of times a product is handled or the distance over which it is ultimately transported which is necessarily critical, but the fact that the product reaches the consumer embedded with information...The successful translation of this information allows products to be differentiated from more anonymous commodities and potentially to command a premium price (Marsden, Banks, & Bristow, 2000:425)."

Parmigiano Reggiano cheese is often used as an example of a spatially extended AAFN with a production system that is embedded in place, culture, and relationships between farmers and other local actors (de Roest & Menghi, 2000; Marsden, Banks, & Bristow, 2000).

Other scholars, however, have questioned the extent to which products that travel long distances through complex commodity chains can remain socially or spatially

embedded (Jaffee, 2007; Kennedy, 2007). Jaffee (2007) for example, has argued that the participation of transnational corporations (e.g. Starbucks, Sara Lee Corporation, Procter & Gamble) have watered down the standards and principles of fair trade.

> "Starbucks appears to have succeeded in associating fair trade with its corporate image, accompanied only by token changes in purchasing practices. The company has been able to use its considerable size and advertising apparatus to appropriate the fair-trade concept for brand image enhancement while doing as little as possible in the way of actual fair trading" (Jaffee, 2007:203).

As AAFNs become economically significant, there is "potential for the appropriation of the economic benefits associated with the embeddedness of production...by dominant actors within the 'conventional' agrofood system, typified by the 'conventionalisation' of organic food production" (Kirwan, 2004:398).

Farm to school programs need food distributors if they are to make an impact on school food procurement that is significant enough to provide a wide segment of farmers with a viable market and all children with access to fresh, locally grown food. However, most of the nation's schools do not have access to more alternative intermediaries like Red Tomato and Growers Collaborative. And while most schools currently buy food from broadline distributors, these more conventional intermediaries may have a set of interests that conflict with the underlying values and goals of farm to school. Although rarely mentioned in the farm to school program discourse, the institutionalization of local school food procurement may be aided through regionally-based food distributors.

Regionally-based food distributors: case studies

Four cases of regionally-based food distributors that are working with schools to bring more locally grown produce to the cafeteria are now presented: Local Fresh!,

Northeast Produce Distributors, Mariano's Produce, and Homegrown Produce. The data presented in this paper are part of a larger study exploring the opportunities and barriers of seven farm to school programs located in two climatologically similar regions of the United States, the Upper Midwest and Northeast regions, from the perspectives of farmers, school food service professionals, and food distributors. Our investigation was limited to these three stakeholder groups because they are the groups most intimately involved with the procurement and integration of locally grown food into the school food program.

Data were collected through in-depth interviews with each of the research participants as well as document analysis of related written materials. Interview participants were identified through maximum variation sampling to capture the heterogeneity of local school food procurement strategies (Patton, 2002). We were interested in learning from the experiences of stakeholders whose efforts reflected both the dominant model for distributing locally grown food to school — directly from farms to schools — as well as models that use food distributors. Our criteria were that selected farm to school programs have been in operation for at least two years and have stakeholders who would be able to articulate the challenges and opportunities associated with integrating locally grown food into the school food program. In addition, given the diversity of school districts, we selected programs that differed in terms of school district location (rural, suburban, urban), free- and reduced-price meals status, and school district size — all characteristics that might influence the extent to which locally grown foods are integrated into the cafeteria. We began by asking two well-situated informants for contact information for school food service professionals in the Upper Midwest and Northeast

who had been integrating locally grown foods into their school food program for at least two years, a span of experience we felt would allow them to speak in some depth about their specific efforts. Eight farm to school programs were identified. One food service professional did not return our request for participation in this study. The school food service professionals, farmers, and distributors involved in each of the seven farm to school program efforts were recruited for this study and agreed to participate. Across the seven programs, only four distributors were identified as conduits for locally grown fruits and vegetables.

Interview data were collected to provide a glimpse, unavailable in the existing scholarly or advocacy literature, into the day-to-day reality of farm to school program stakeholders. The interviews were conducted one-on-one by the first author in spring 2006 and followed up by second interviews a year later. All interviews were recorded and then transcribed verbatim. Interviews with food distributors lasted between 30 and 90 minutes and took place in their offices although some questions were asked on tours of their distribution warehouses. These tours were invaluable for providing context to the food distributors' interview responses.

Documents such as bid award letters and price lists were used to cross-check the interview findings and enhance the validity of the results. In addition, newspaper articles and other non-peer reviewed literature such as grant reports, handbooks, government documents and newsletters relevant to farm to school programs were collected and examined. These documents provided additional context for the individual farm to school programs and helped to situate them within the broader national effort.

In the presentation that follows, each case begins with a description of the food distribution companies, including their local food purchasing activities. Food distributors' perspectives of farm to school programs are then discussed. The conclusions formed in this paper emerged from our analysis of semi-structured interviews with these four companies. From time to time, we supplemented the data with interviews with school food service professionals and farmers. Pseudonyms are used to identify the food distributors and all distinguishing characteristics are veiled to protect their identity.

Case 1: Local Fresh!

Roger Dunn and Tom Morland own and operate Local Fresh!, a company that specializes in the sale and marketing of homegrown produce (i.e. grown within state lines) to domestic and international markets. Located in the Upper Midwest, Local Fresh! handles more than one million bushels of apples between August and June plus a wide variety of locally grown vegetables during the summer months. Tom is a third-generation produce wholesaler and in addition to his work with Local Fresh!, he is intimately involved in the operation of Morland Produce, a wholesaler that distributes a full line of fresh fruits and vegetables to retailers, food service institutions, wholesalers, and other high volume customers on a year-round basis. Local Fresh! hires Morland Produce to deliver their produce to their large volume customers.

Farmers bring their apples to Local Fresh! to be stored, sorted, sized, washed, waxed, packaged, and delivered. They receive payment for their product after their apples have been sold and payment is based on product quality and variety. Farmers (and Local Fresh!) receive higher payments for popular varieties that are packaged for the fresh

apple market versus those that are processed for juice or sauce. The majority of the farmers grow apples on small or mid-size farms with less than 200 acres in production, however, Roger and Tom work with farmers who grow apples on as few as five acres to as many as 500 acres. With few new farmers in the state, most of their relationships with farmers are multi-generational, with some extending back to the 1930s when Tom's grandfather and great-uncle started Morland Produce.

Farm to school program perspectives: motivations and challenges

Since 2004, Local Fresh! has been supplying the Goosefoot Central School District with a wide variety of apples, one of the only locally grown products available in the Upper Midwest on an almost year-round basis. The relationship was initiated by Sarah Morgan, one of the 90-building school district's food service professionals responsible for food procurement. For years, Sarah had been purchasing Washington Red Delicious apples — the red, shiny, but not always flavorful apple that has become the quintessential food service variety — from her broadline distributor. However, she wanted a greater variety (i.e. color, texture, flavor) of apples than what they were able to provide at a price she could afford. Broadline distributors purchase apples from wholesalers like Local Fresh! and at one time stocked a large variety of locally grown apples. But according to Tom, things have changed.

> "Years ago when SYSCO was much smaller, they used all kinds of apples. But it was all local people involved in the company and they supported our state very well. They used eight different varieties of apples and they used volume of all of 'em because they pushed 'em. And as they got bigger and bigger and started buying from people in California, Texas, wherever, it was like, 'Well, gee, we sold five hundred [cases] Red Delicious last month. We only sold twenty [cases] of these Jonathans; we should get rid of 'em" — they're not profit."

Bypassing her broadline distributor allowed Sarah to gain access to more than 15 apple varieties at wholesale prices while simultaneously supporting her state's agricultural economy, an important objective of the Goosefoot Central School District's food program.

Every week or two, Local Fresh! delivers to Goosefoot Central School District's commissary (i.e. warehouse for receiving, storing, preparing food) two pallets of apples, a very small volume order relative to the 36 pallets their other customers order on any given day. Even though the commissary is conveniently located less than 15 miles away, Roger and Tom are barely able to cover their transportation and handling costs in part due to the small volume orders. In addition, they give the school district a "price break." Roger explained that as local residents themselves, they know that the Goosefoot schools are struggling financially and have, therefore, tried to keep their apple prices as low as possible.

Despite low profits, Roger and Tom have no plans to discontinue their relationship with Sarah. They want to support a food service professional who they perceive as "working outside of the box" through her efforts to purchase locally grown apples instead of those coming from Washington. Roger explained, "Goosefoot is not buying Red Delicious. They're buying Galas, and they're buying good apples for their kids to eat, you know. And we're impressed with that." In addition, Roger felt that schools, as a publicly funded institution, should be supporting the state's economy. "Why should our tax dollars be paying for West Coast apples when they can pay for our apples" he asked. "And the money goes back into our state and it helps to keep the apples flowing...Whether it be from me or anybody in [state]...The schools are getting apples.

So why can't they be [state] apples?" Tom admits that they have an "ulterior motive" too; school food service sales are a way to cultivate children's preference for apples which he sees as an investment in future profits for Local Fresh!, Morland Produce, and the state's apple industry.

Roger and Tom see limited potential for expanding their school sales to other districts due to structural constraints that keep order volumes low and the transportation and handling costs involved in delivering produce high. Tom explained,

> "There's some economies of scale here. I mean, if we were going to get heavily involved in doing a lot of schools, we'd have to be charging them so much money and we're not doing that with Goosefoot. But they're close and you know, we can make that work fairly easily. But if we were to branch out...our delivery cost is going to be so high to get the job done that it makes it uneconomical for the school."

Incompatible growing season and school year also mean limited opportunities for Local Fresh! since the company focuses exclusively on locally grown product. However, Roger and Tom felt they could potentially penetrate the school market indirectly by selling their product to Morland Produce. Tom explained,

> "In my mind, [Morland Produce] can offer Sarah cucumbers 12 months out of the year, I can't. [Morland Produce] will have all of our product whenever it's available 'cause they're in [state] and they support [state]-produced products, so when they're available they have 'em. When they're not available they have the supply sources for them. They have all the products there all the time but we don't. So it would give Sarah a place that she can go to year-round and it's an option to SYSCO."

Thus, even though Roger and Tom did not feel they had the flexibility to meet the relatively small volume needs of the average school food service operation, they were hopeful that their relationships with Morland Produce and the Goosefoot Central School District would lead to fruitful synergies.

Case 2: Northeast Produce Distributors

Northeast Produce Distributors (NPD) is a family-owned and operated distribution company that delivers fresh produce, other perishables and canned and frozen items to more than 1,000 customers within a 90-mile radius of its warehouse in the northeastern United States. The company began in the 1970s when Steve Wong and his son Sam opened a 1,000-square-foot fruit stand. NPD has since expanded into a 100,000-square-foot distribution facility with more than 50 employees. In addition to serving their school customers, they also deliver to restaurants, healthcare facilities, and supermarkets. Since expanding their product line, they have become direct competitors with broadline distributors. They differentiate themselves on customer service and their selection of quality produce. According to Sam, broadline distributors do not "push produce" since handling it can be risky; it is very perishable and the margins slim. He explained that there are many different points along the supply chain where the quality of a product can deteriorate. If a consumer receives a less than perfect product and isn't satisfied, a distributor can lose the entire account. Although it is less risky and more profitable to push non-food products and less perishable canned or frozen items, Sam has found his niche in fresh produce.

Farm to school program perspectives: motivations and challenges

Sam believes he can support local school food procurement efforts better and more easily than his broadline competitors because he has already established relationships with local farmers who consistently grow high quality product. At NPD, locally grown produce has always been purchased whenever possible, especially during

the growing season when 75 to 80 percent of produce is purchased directly from farmers or through farmer cooperatives. "It helps the community," said Sam. "It helps the economy in [state] and creates, somewhat, jobs." The goal is to capture the benefits — decreased cost and higher quality — that come with reduced transportation time. Some of the larger farms in the area grow product for NPD on what Sam calls, "a handshake agreement." He explained, "If I call 'em on the phone and say, 'I'll take everything in that field that's it. There's no contract, no nothing." The relationships that Sam has with growers have provided him with access to product in short supply. "If there's outside entities looking for product when product is scarce, they're not going to get it. We're going to have the first take on all the products," he said. His relationships also allow Sam to be more responsive to his customers' needs. "They allow us to niche ourselves better," he said.

Although Sam supports the farm to school program concept, he did not feel that the program had generated more sales for NPD or that it would any time in the near future. Tight food service budgets made it difficult for schools to take full advantage of the locally grown products he carried. For example, some of his school customers did not have the resources to use some of the whole fruits and vegetables that required additional labor to prepare. In addition, food service professionals were reluctant to try new products that they felt might decrease food service sales, a critical source of revenue. Finally, tight budget constraints often forced schools to buy apples through DoD-Fresh, the U.S. Department of Agriculture/Department of Defense interagency fruit and vegetable commodity program that allows schools to buy produce using their entitlement dollars. When apples become available through DoD-Fresh, schools will often choose

these over commercially purchased apples since they only have to draw from their budget to pay for storage and transportation costs. At approximately $2 per case, the impact of these purchases on the food service budget is relatively small. However, Sam felt that this diversion of sales from NPD to DoD-Fresh negatively affected his ability to sell locally grown apples. In spite of these structural constraints, Sam changed his bidding and billing systems in an effort to support farm to school programs and provide schools with information (e.g. seasonality of produce, geographic identifiers) he felt would help them to increase their purchases of locally grown foods. In this way, Sam's services help further embed produce in place.

Case 3: Mariano's Produce

In 1980, Nick Mariano opened Mariano's Produce as a roadside fruit and vegetable stand. Since then the company has grown into a produce wholesaler that employs more than 50 people and whose customers include supermarkets, food service institutions, and restaurants located within a 150 mile radius of the company's warehouse in the northeastern United States. Mariano's Produce recently merged with another food distributor that specializes in canned and frozen foods. Nick prides himself on being able to satisfy his customers' fresh produce needs and therefore purchases food from domestic and international sources in order to buy the best quality at the lowest price.

> "If there's a product that's produced here in the [state] that's comparable or better than something out of state we will utilize that and save the transportation costs...and for a customer, we pass that along...In general, the product is better because we're saving the transportation time and there's a two day shelf improvement on that."

Some products such as apples are always sourced locally unless a customer requests a variety, like Granny Smith, which Nick says is not grown in the area.

Nick estimates that 25 percent of the produce he supplies to schools is grown locally and more than 90 percent of it is purchased directly from farmers. Prices are negotiated with farmers but Nick does not try to bring the price down as low as possible. "You have to keep their best interests in mind as well," he said. "It doesn't do you any good if the farmer isn't making money and he wants to sell his land to be a golf course." His relationships with farmers are based on reliability, price, and quality. Quality is based on U.S. grades and standards and farmers bring their products to Mariano's Produce warehouse already washed, sorted, and packaged to Nick's specifications. Reliability and consistent quality are critical since product is not always inspected before it is delivered to the customer. Over time, said Nick, "you build a relationship and you find comfort with that farmer's product."

Farm to school program perspectives: motivation and challenges

Nick sees farm to school programs as a niche market that he is well-positioned to fill. He said,

> "SYSCO's a broadliner that purchases nationally from wherever they can to save themselves money...They go and they strong-arm these little farmers, maybe dairy farmers for that matter and tell them what they want and you sell it or your don't. They're strong-arming these growers to the point where there's no room to make any money. And they're reaping all the benefits."

As more schools begin to request locally grown items, Nick said he hoped that he would have the opportunity to increase his sales because of his access to and good relationships with farmers. However, although his sales increased during an annual event

promoting the purchase of locally grown food for school food programs, Nick felt that overall, farm to school programs had not increased his sales due to the seasonality of fruits and vegetables grow in the northeastern United States and because he said that schools' "hands are tied monetarily." Budget constraints impacted the ability of schools to take advantage of locally grown products that are not processed to food service specifications (e.g. washed and shredded lettuce, whole watermelon) and therefore require additional labor as well as products such as pears, which have relatively low supply and high demand. Like Sam Wong (NPD), Nick felt that his ability to sell locally grown apples to schools was undercut by DoD-Fresh.

Case 4: Homegrown Produce

Homegrown Produce is a third-generation wholesaler that supplies restaurants, schools, hospitals, and other food service institutions with fresh produce on a year-round basis. The business, situated on the fringe of a large city in the northeastern United States, is made up of multiple enterprises. Sandy Davis and her brother Doug own and operate the business. Sandy manages the farm market and bakery, bids on wholesale produce contracts, and conducts farm tours for schools while Doug raises hogs and Angus cattle, and also grows a variety of crops on their 400 acres. About a third of what they sell through their wholesale produce enterprise is grown on their farm and much of the rest is purchased directly from nearby growers when it is in season. Produce that is not available locally is purchased from other parts of the country. Although Homegrown Produce was once one of the largest wholesale produce purveyors in the area, with the onslaught of competition from broadline distributors, the company is now struggling to stay in

business. Sandy tries to differentiate herself from her competitors by providing a high level of service to her customers and specializing in locally grown products.

Sandy is passionate about local growers and promotes their product whenever possible. She said, "As a grower and a grower representative, because that's what I try to suit myself as, I push for [state] stuff, for state produce to be in these larger customers...I have a passion for [state] growers, because I am one. And so I seek out who's got what." Her desire to patronize local growers stems a sense of empathy for the other growers. "Survival for growers is a tough issue," she explained. "Especially in some of these Northeast areas with the onslaught of building, and commerce, and taxes, and expense — it's just really becoming a major issue."

Sandy has strong relationships with her growers and is loyal to those on whom she can rely. In the produce business she explains, "What you need is teamwork. You need to know that when you get the order you can rely on your grower or your shipper to get you the product...There are many orchard people. I stick to one guy 'cause I trust him. And sometimes he's my eyes; if he doesn't have it, he'll go find it." In a business that has become less "hands-on and eyes-on" over time, trust in the growers' ability to consistently grow high quality products and package it according to the customers' specifications is crucial. Sandy feels that her relationships with growers are critical to "servicing the customer" and operates her business like an "unofficial cooperative." She elaborated, "it's a network of people that you can communicate with and trust as far as what their word is...so cooperatively you are discussing the product, you're helping market the product, you're staying abreast of the seasons and the markets and a lot of the

times they rely on me, like, 'Well, what can I get for this stuff?' You know, you're cooperating with each other."

Farm to school program perspectives: motivations and challenges

Sandy thinks that farm to school programs are an opportunity for local growers but that the program needs intermediaries if it is going to become part of mainstream school food procurement. She feels growers have neither the time to make deliveries to schools nor the marketing skills needed to drum up business with schools. Similarly, schools do not have time or organizational resources to work with multiple growers. According to Sandy, "the perfect scenario is to have someone to be the liaison between grower and user...you have to have a point of marketing. And I pride myself as being that person for my growers in [state]." She feels that she is an especially good fit for schools that want to buy more locally grown food because she has access to a full-line of produce year-round but will take the time to buy locally grown fruits and vegetables when they are in season. She actively "sells to" her customers and sees herself as a marketer, distributor, and grower. "Food service doesn't like change," she said.

> "And that's one of the problems here with getting them to use something they've never used before, trying a product on the kids that they've never had. It's only because of me, and I will blow my own horn, that we have actually gotten the schools to use Asian pears, which they had no idea what they were two years ago, and now we sell quite a bit of it and the grower's elated."

Although Sandy believes local school food procurement is a niche that she can fill, she was not optimistic that the program would create significant opportunities and revenue for her. She repeated the litany of hurdles given by other distributors — seasonality, food service budget constraints, and DoD-Fresh — but also, and perhaps

more importantly, she felt that even if she did win the bid to supplement a school district's produce purchases, that the high minimum order size that broadline distributors set has placed harsh limitations on the growth of her business. She explained,

> "Setting high minimums has structurally ruined straight-lined purveyors like us...[Broadline distributors] have to set large minimums because they have so much overhead that they can't afford to stop their trucks for a few packages...And because that structurally happened, and I see both sides of the coin, it's taken business away from me because if a large school which does business with SYSCO and they say 'okay we have a $500 minimum [order size],' well, produce is produce, but it'll certainly help make up the minimum."

Thus, the high minimum order size reduces food service professionals' flexibility to buy produce from other vendors.

Discussion

This paper has sought to explore regionally-based food distributors' perspectives of farm to school programs, and in particular, how their thinking relates to the underlying embeddedness associated with these programs. The results illustrate important differences among food distributors' attitudes, based in part on where they are located in the commodity system. The study also captures the shared motivations and challenges that emerged as core experiences across the four cases.

The idea of connecting farms with schools through the cafeteria converged with the interests and practices of all four companies profiled in this paper. However, among the four distributors, Local Fresh! was the only company for which the farm to school program represented the only case of penetrating the school food service market. Unlike NPD, Mariano's Produce, and Homegrown Produce, Local Fresh! did not have an already established distribution infrastructure capable of meeting the relatively small

volume needs of school food service. The perspectives of Tom and Roger (Local Fresh!) parallel those of farmers who sell their product directly to schools (Izumi, Wright, & Hamm, 2008b). Given the small volume sales, the convenient location of the school district's central commissary was a critical factor in Roger and Tom's decision to supply apples to Goosefoot Central School District. Thus, they were not willing to extend their efforts to other school districts that were located further away. Although it seemed unlikely that Local Fresh! would become a regular supplier of apples for school food service programs, Roger and Tom hoped that they would reap future economic benefits of school food service sales by selling their product to Morland Produce, a company that carried a full-line of produce year-round.

NPD, Mariano's Produce, and Homegrown Produce expressed similar perspectives of farm to school programs; all three distributors felt that these programs were a niche market that they could fill better than their broadline competitors because the idea of integrating locally grown food into the cafeteria converged with their normal business practice of patronizing local farmers whenever possible. These relationships gave them a comparative advantage in food distribution, an industry that has become increasingly competitive. NPD, Mariano's Produce, and Homegrown Produce differentiated themselves from broadline distributors by the personal attention they gave their customers as well as their ability to act as a liaison between farmers and schools. Their relationships with farmers were seen as critical to their ability to respond to customers' price and quality produce needs in a timely manner — produce that they said wasn't always available to broadline distributors. Therefore, they invested time and

resources into developing and maintaining relationships with farmers who could consistently provided them with high-quality product.

An interest in supporting the local community and economy emerged, to varying degrees, as an important motivator for buying and selling locally grown food. As a grower and a food distributor, Sandy (Homegrown Produce) had strong ties to other farmers, especially those with whom she worked closely to fill her produce bids. This is evidenced by her loyalty to farmers and her role as farmers' "point of marketing" that she felt was critical to their ability to sell product. That she "sells to" her customers suggests that she places a high priority on servicing farmers in addition to her customers. However, as suggested by Nick's (Mariano's Produce) comment —"It doesn't do you any good if the farmers' not making any money" — supporting the local community and economy was often associated with the distributors' economic profitability. The fact that relationships between distributors and farmers are in part instrumental shouldn't devalue these relationships. Rather, this finding draws attention to the reality that regionally-based mid-tier food distributors are trying to make a profit in a competitive industry and trying to survive.

All four companies profiled here emphasized seasonality as a barrier to institutionalizing farm to school programs. The short growing season of the Upper Midwest and Northeast regions of the United States means that relative to other regions, there are few fresh fruits and vegetables that can be integrated into the cafeteria throughout the school year. This barrier, of course, is a historical artifact; the school year calendar and the agriculture production cycle are intentionally oppositional since children were needed on the farm during the summer months. Still, with the exception of apples,

fresh fruits and vegetables that are in season or available as stored items during the winter months (e.g. winter squash, root vegetables) are typically not seen in school cafeterias due to a lack of perceived or real demand. Since school food service revenue is based on the number of meals served, schools are not likely to experiment with foods that students may not buy. Furthermore, the inclusion of locally grown foods that requires additional labor to prepare such as carrots with their tops still attached or whole watermelon is not likely to be financially feasible in today's fiscal climate. Thus, while seasonality is perceived to cap the growth of the potential of farm to school programs, its detrimental impact can be lessened through the development of new structural arrangements such as educating youth about new foods in an effort to increase demand, adding local foods such as dried fruit, eggs, or meats to the cafeteria menu, or by changing the school year to match the production cycle. Rather than focus on seasonality, our attention should be directed to the lack of material resources, including funding for school food service programs, that is one of the primary obstacles for farm to school programs.

As three of the distributors complained, the challenge of tight budgets in the context of farm to school programs meant that DoD-Fresh displaced some of their sales by making items such as apples available as donated commodities. This same complaint also has been heard from farmers who have sold apples directly to schools (Izumi, Wright, & Hamm, 2008b). From the distributors' perspectives, DoD-Fresh undermined their efforts to supply schools with more locally grown food as well as the federal government's own efforts to support local food procurement; this is a classic example of the contradictory nature of the state (O'Connor, [1973] 2002).

Finally, although it was not a theme that was present across the companies, one food distributor (Homegrown Produce) mentioned that the high minimum order size of broadline distributors was a challenge to getting more locally grown foods into school cafeterias. The impact of broadline distributors' high minimum order size on farm to school programs is worth considering because most school food programs across the country rely on these large intermediaries. More research on how broadline distributors influence market opportunities for regionally-based mid-tier food distributors in general, is needed.

Conclusion

Regionally-based mid-tier food distributors, such as those profiled here, can play important roles in harnessing the potential of farm to school to create viable markets opportunities for farmers and to bring more fresh food to school cafeterias. The case study method used means that conclusions drawn are based on the perspectives of the food distributors who participated in this study and may not be generalizable to other contexts. The distributors' personal relationships with growers offered strategic advantages correlated with distance, which allowed them to efficiently meet the needs of their customers. In the case of NPD, Mariano's Produce, and Homegrown Produce — the three distributors that offered a full-line of product year-round — these relationships are what have allowed them to provide the level of personal attention to their customers that they felt differentiated them from their broadline competitors who currently dominate the school food service market.

In his study of SYSCO's role in relocalizing the food system, Kennedy (2007:105) found that, in contrast to the perspectives of the food distributors profiled here, that

> "social connectivity [...] is perceived by operating companies as inefficient and inconvenient, and it is preferable to maintain minimal face-to-face interaction between actors because it is time-consuming."

According to Kennedy (2007), this lack of personal relationships with farmers has been one of the company's challenges in supplying locally grown products to their customers. While the sheer size and scope of broadline distributors makes developing dense social ties difficult, it is the agendas or intentions of school food service actors that make some companies a better fit for institutionalizing farm to school programs.

While Local Fresh!, NPD, Mariano's Produce, and Homegrown Produce are primarily motivated to buy and sell locally grown food for instrumental reasons, their comments suggest that their decisions go beyond an economic rationality. Their motivations are complex and illustrate the tensions between marketness, instrumentalism, and embeddedness that have been observed in other AAFNs, including among other farm to school stakeholder groups (Higgins, Dibden, & Cocklin, 2008; Izumi, Wright, & Hamm, 2008b; Sonnino, 2007). These tensions may represent opportunities for the development of school food value chains that can respond to schools' demands for locally grown food while maximizing value for all participants involved.

According to Stevenson and Pirog (forthcoming), trust is vitally important in successful value chains. As evidenced by comments such as "it's a network of people that you can communicate with and trust as far as what their word is," or "you build a relationship and you find comfort with that farmer's product," or "[it's] a handshake

agreement," trust in the sense of loyalty, reliability, and competence undergird the farmer-distributor relationships described here. School food value chains however, would go beyond trust and be characterized, in part, by a commitment to the economic welfare of all participants involved. This would include fair profit margins to the farmer and distributors but also to school food service professionals, who must at least break even to remain solvent. Such school food value chains would not have to begin with farmers and end with food service professionals. Instead, they hold the potential to extend the chain further upstream to include such agrifood participants as farm workers or suppliers for farm inputs and downstream to include children who, as the end consumers, can help to shape demand.

The ability of regionally-based food distributors to catalyze changes within traditional school food procurement practices through school food value chains or otherwise, is limited in large part by a lack of material resources. However, this situation may be changing as states work quickly to pass bills that support farm to school programs. The high degree of interest in such programs has led to a number of initiatives that provide additional funding to support the integration of locally grown food into school meals. For example, the California Fresh Start Pilot Program provides schools with a $0.10 reimbursement for every breakfast served to supplement breakfasts and snacks with an additional serving of fruit or vegetable with priority given to products grown in California (California Department of Education, n.d.). In Colorado, a state-funded fruit and vegetable pilot program provides fresh produce to select schools and requires them to use Colorado-grown fruits and vegetables whenever possible (General Assembly of the State of Colorado, 2006). Such initiatives provide some schools with

funds that can help to address some of economic challenges associated with farm to school programs.

The rapid growth in support for farm to school programs and state-sponsored initiatives to integrate locally grown foods into the cafeteria presents the type of dilemma that other AAFNs like fair trade are currently facing (Jaffee, 2007). Broad-based support is needed to institutionalize farm to school programs into school food service. However, as these programs become economically significant, this same support may start to chip away at the principles upon which farm to school programs emerged; school food service stakeholders with an interest in diluting the transformative potential of farm to school programs may seek to appropriate the symbolic meaning of "local" for their own commercial advantage. There are lessons to be learned here from the fair trade movement. As quoted in Jaffee (2007:230) "the ends are justifying the means for too many folks. So they're willing to have a very short timeline about how they look at things, have a real sense of urgency, and be willing to make any compromises to make progress." To protect farm to school programs from dilution, their goals — and the policies that support them — should firmly be placed within the context of the founding values of these programs. Regionally-based food distributors that have the meaningful relationships necessary to re-embed the school food service market back into the larger society may be critical to enabling farm to school program advocates to achieve their goals.

CHAPTER FIVE:

CONCLUSIONS AND IMPLICATIONS

The research described in this dissertation is the first to study farm to school programs from the perspectives of farmers, food service professionals, and food distributors — three stakeholder groups that are critical to the institutionalization of local food procurement in public K-12 schools in the United States. Overall, this research supports two major conclusions. First, when making decisions about buying and selling locally grown food, the stakeholders in this study balanced various motivations. The concepts of marketness, instrumentalism, and embeddedness provide a theoretical framework to describe much of the participants' cognitive dissonance and tension. Second, the transformative potential of farm to school programs is limited by the school year calendar, lack of material resources, and procurement regulations.

Balancing embeddedness, marketness, and instrumentalism

Chapter two focuses on the viewpoints of farmers. Contrary to Ohmart's (2002) study, which suggests that philosophical rather than practical reasons drive farmers' participation in farm to school programs, this study found that farmers were motivated by a strong economic imperative and desire for personal autonomy. Despite the fact that school food service sales contributed negligibly to their total sales by volume and income, the farmers in this study persistently pursued schools as customers. Farmers were hopeful that their investment in cultivating school food service markets now would result in future economic benefits. However, unlike other detours described by Mooney (1988),

farm to school programs also offered farmers ancillary and latent benefits — helping to improve children's eating habits, and supporting the local community.

As outlined in chapter three, the food service professionals participating in this study purchased locally grown food for their cafeterias because "the students like it" and "the price is right," and also because they hoped they were "helping our local farmers." The first two explanations suggest an important motivator for and benefit of integrating these foods into the cafeteria is their fit with school food program goals. Such goals can be broadly defined as promoting child nutrition and maintaining financial solvency. The third theme — support for local farmers — invokes the notion of regard for and symbolic sense of community that has been identified among consumers as a motivator for sourcing food locally (Holloway & Kneafsey, 2000; Kirwan, 2004; Sage, 2003; Winter, 2003). The food service professionals I spoke with associated children's preference for locally grown food with the superior quality of the products they were able to buy from farmers and wholesalers. They explicitly stated that this same level of product quality, expressed in terms of variety and freshness, was not available or affordable through their broadline distributor. It is important to note that the motivators or perceived benefits expressed by the food service professionals were associated with farmers and produce wholesalers but not with food distributors that carried produce plus other perishables. Connections with farmers gave food "the local feel," and emerged as a key variable that directly and indirectly influenced the procurement decisions of these food service professionals.

The distributors who participated in this study were involved in farm to school program efforts in large part because the idea of integrating locally grown foods into the

cafeteria converged with their normal business practice of buying fresh produce from local sources whenever possible, or as was the case for Local Fresh!, exclusively. As described in chapter four, although Local Fresh! did not have the infrastructure capable of meeting the relatively small volume needs of school food service, they nevertheless supplied apples to a nearby school district as a way to support their local community and to invest in a market they hoped would ultimately provide an economic payoff.

Among the three food distributors — NPD, Mariano's Produce, and Homegrown Produce — that carried a full-line of fresh produce year-round, farm to school programs were seen as a niche market, due to their existing relationships with farmers, that they could fill better than their broadline competitors. The distributors believed that these relationships gave them access to high quality and competitively priced produce not always available to broadline distributors — a comparative advantage and marketing tool in what has become an increasingly competitive industry. In addition to capturing the cost and quality advantages of decreased transportation time, the distributors were motivated to buy directly from farmers and farmer cooperatives whenever possible as a means of supporting their local communities.

In summary, the farmers, food service professionals, and food distributors who participated in this research articulated complex reasons for their involvement in farm to school programs. Their engagement can be rationalized as commercially motivated but they clearly went beyond economic instrumentalism as evidenced by the non-economic values (e.g. community, localism, health) that played a role in their decision-making process. This research supports and extends other studies that emphasizes the hybrid

nature of AAFNs and the need to assess the complex interplay between their embedding and disembedding forces in order to understand their potential.

Structural constraints of school food procurement limit the integration of locally grown foods into the cafeteria

As described in chapters two and four, the school year calendar (September through June), lack of material resources, and procurement regulations and routines limit the transformative potential of the seven farm to school programs studied in this research. The fall through spring school year and the summer-centered agriculture production cycle intentionally don't overlap, thus limiting the types of locally grown products that schools can use in their cafeterias. However, as described in chapter four, understanding this issue means going beyond calendar constraints and analyzing student food preferences and school food service budget constraints. Foods such as winter squash, root vegetables, and apples store well and are available over the winter, but except for apples, they are not seen on the typical school lunch menu. This is due in large part to a perceived (or real) lack of demand among customers (i.e. students) for these foods. Since school food service program revenue relies primarily on the number of meals served, new menu items that detract from sales are not likely to be added.

School food service budget constraints were repeatedly mentioned by farmers and food distributors as a roadblock to integrating locally grown foods into the cafeteria. As described in chapter four, tight budgets limited the schools' ability to utilize many of the foods grown in their regions. Especially problematic for schools were products that required additional labor to prepare such as corn on the cob with husks, whole

watermelon, and carrots with their tops still attached. As described in chapter three, one food service professional was able to purchase asparagus directly from her farmer at a lower price than would have been offered by her broadline distributor. However, at $1.48/lb, the price was still too high for her to be able to offer each child more than one stalk, a serving that amounts to far less than the three-quarter cup portion required to make up one vegetable serving for children aged nine and older.

Tight budgets also meant that schools necessarily took advantage of the commodity fruits and vegetables offered through DoD-Fresh whenever possible. As described in chapters two and four, DoD-Fresh negatively impacted farmers' and food distributors' school food service sales. When farmers' sales were displaced by DoD-Fresh, some had to sell their product to a processor for less value. Food distributors were able to find other markets for their products but still felt that DoD-Fresh undercut their school-focused business.

As described in chapter three, the food service professionals who participated in this study purchased locally grown foods for their cafeterias because of the competitive, and often lower, prices for these products offered by their farmers and produce wholesalers. For example, there is a cost advantage from a shortened supply chain when a Cortland apple offered by a farmer replaces the Washington Red Delicious apple shipped across the country by their broadline distributor. At the same time, farmers and distributors said that tight budgets limited the extent to which locally grown foods can be integrated into the cafeteria. Thus, integrating locally grown foods beyond substitution may require increased costs in labor and equipment that food service professionals currently cannot afford. In addition, if such foods are being introduced to students for the

first time, several introductions may be required before they are willing to try them, thus placing further pressure on the food service budget.

As described in chapters two and four, procurement regulations and routines limit the potential of school food service sales to provide farmers with a viable market opportunity. School food programs must follow procurement regulations that require food to be purchased through a competitive bidding process that prohibits consideration of geographic proximity. These regulations interact with school food service budget constraints and routines in multiple and complex ways. First, the federal rule against using geographic preferences when evaluating bids means that farmers are unable to reap any sort of monetary value from the localness of their products. The inability to do so makes farm to school substantially different from other AAFNs where farmers are able to use their geographic location as an asset to appropriate increased value from their commodities. The bidding process also means that farmers and food distributors must compete for school food service bids. Since food service professionals are working under severe budget constraints, the criteria used to justify bid awards typically give priority to the lowest cost vendor. Thus, farmers and food distributors must quote the price of their products low enough to win the bid but high enough to at least cover their costs. Although this process is meant to ensure open and free competition, within the context of school food service, it favors broadline distributors who are able to offer a one-stop-shopping experience for food and non-food items as well as financial incentives such as early payment rebates.

In summary, these findings demonstrate that structural constraints limit the potential of farm to school programs to decrease the marketness of school food

procurement and to shift it from a process based solely on price to one that seeks to integrate non-economic values into procurement transactions. It is important to note that except for procurement regulations and the calendar mismatch between the school year and agriculture production cycle, the barriers that were identified in this research emerged from the routines that food service professionals have had to develop in order to manage their food service operations under intense time and budgetary pressures.

Implications

Farm to school programs emerged in the United States as a means to provide farmers with a viable market opportunity and school children with increased access to fresh fruits and vegetables. Whereas traditional school food procurement decisions are guided by price, farm to school programs spring from a vision for alternative criteria for school food procurement that is based on social justice, environmental sustainability and economic viability and emphasizes non-economic values such as community, fair payments to farmers, product localness, and health (Azuma & Fisher, 2001).

The findings presented in this dissertation show that although the interactions between the farmers, food service professionals, and food distributors who participated in this study are based on a commodity relationship, the complex nature of their motivations is evidence that these interactions are shaped by the embeddedness of the exchange. Their perspectives, however, also illustrate the limitations of farm to school programs.

It is important to remember that that this research explored the perspectives of farmers, food service professionals, and food distributors engaged in seven farm to school programs and therefore the findings are not generalizable in the sense that the cases

studied reflect the experiences of these stakeholder groups in all farm to school programs. However, qualitative studies may have "face generalizability" — such that "there is no obvious reason *not* to believe that the results apply more generally" (Maxwell, 2005:115). The rich descriptions of the participants' experiences allow readers to assess the generalizability or relevance of this research to other farm to school programs. The following recommendations are based on the perspectives of the stakeholders who participated in this study and are presented here with the hope that they might help to strengthen the potential of farm to school programs to, in Polanyi's ([1944] 2001) framework, re-embed the school food market back into the larger society.

Clarify the goals of farm to school programs

Farm to school programs continue to be promoted as "win-win" opportunities for farmers and schools (Azuma & Fisher, 2001:13). The research presented in this dissertation tends to support anecdotal reports which indicate that school food service professionals and farmers do receive some benefits from participating in farm to school programs. However, selling to schools does not appear to provide the financial windfall for farmers that advocates had envisioned. Is creating viable market opportunities for farmers still one of the key goals for farm to school programs? It is hard to say because as farm to school programs have proliferated across the country and new voices have been brought to the table, the goals have become more opaque.

While broad-based support is a strength of farm to school programs, it also threatens to dilute the focus of efforts to integrate locally grown foods into the cafeteria. Among the supporters at one end of the spectrum are those who see farm to school

programs as an economic development strategy that can boost states' agricultural economies; "local" is defined exclusively by geopolitical boundaries. At the other end are those who share the ideological motivations of many early advocates seeking to reduce the importance of price, or marketness, in school food procurement; "local" is assumed to embody non-economic values such as community, equitable payments to farmers, and health. The ideological differences of farm to school program advocates are not necessarily contradictory but the strategies to achieve the disparate goals along this spectrum are likely to involve school food service actors who differ substantially in their marketness. As advocates seek to institutionalize farm to school programs through policy changes at the national and local levels, it is critical that the goals are clarified and that benchmarks for success are identified. What will institutionalization look like? Will success be defined by the number of school food service programs that are integrating locally grown food into their cafeteria? Will it matter if farmers receive fair payment for their products? What types of farmers should benefit from farm to school programs? Will it matter if the food has been produced in a manner that helps to protect the environment? What type of agrifood system do we want to leave behind for future generations? Whose ideas and priorities are represented in the farm to school program discourse? These kinds of questions, however uncomfortable, must be asked if farm to school programs are to avoid making "non-reformist reforms" (Kloppenburg & Hassanein, 2006:417).

Address school food budget constraints

Local and national policy efforts have focused on removing constraints associated with procurement regulations such as the federal prohibition against using geographic

preferences when evaluating bids. While such changes will allow food service professionals to place a value on product localness, the heavy lifting around revising regulations diverts attention away from the limits that lack of material resources places on the transformative potential of farm to school programs. Even if geographic preferences for locally grown products become allowable and food service professionals are motivated by non-economic values such as community, equitable payments to farmers, and children's health, procurement decisions will almost always have to be based on price if school food service must pay for itself.

The issue of tight budgets extends beyond farm to school programs and is getting worse. The fiscal realities of school food service has received recent media attention as schools across the country struggle with sharp increases in the price of foods such as milk and fresh fruits and vegetables. According to a recent article published in *The Washington Post*, the rising cost of food is outpacing increases in federal meal reimbursements, leaving schools with no choice but to serve children unhealthful but profitable foods (Glod, 2008). Until school food service programs are adequately funded, procurement decisions will be made under conditions of high marketness and non-economic values will be subordinated to the market.

As I write this, the 2007 farm bill is on its way to the White House for approval. Included in this latest version is language that will allow schools to use geographic preferences when awarding their food service bids (Community Food Security Coalition, 2008). According to the Community Food Security Coalition (2008), "This change will eliminate this barrier for schools to support local agriculture and will make Farm to School programs easier to establish." However, the farm bill does not include any new

funding for the National School Lunch Program, which means that price and not product localness or any other non-economic value will continue to drive food service professionals' procurement decisions. Thus, the inability to valorize the embeddedness of production due to fiscal realities limits the potential of school food service as a market opportunity for small- and mid-size family farmers.

At least two states, California and Colorado, have begun to address their school food service budget constraints by using farm to school programs to catalyze efforts to increase funding for school meals (California Department of Education, n.d.; General Assembly of the State of Colorado, 2006). In both states, fresh fruit and vegetable pilot programs provide schools with increased reimbursements to supplement the cost of fresh produce and requires that schools buy from in-state sources whenever possible. Although "local" is narrowly defined by geopolitical boundaries, programs of this type that attempt to move school food procurement to lower levels of marketness are important first steps towards realizing the transformative potential of farm to school programs. At the same time, such efforts remind us of the highly idiosyncratic ways in which farm to school programs have developed and their potential equity consequences (Allen & Guthman, 2006). If one of the goals of farm to school programs is to improve the health of all children and create market opportunities for small- and mid-size family farmers across the country, both state- and federal-level resources must be marshaled.

Recommendations for future research and practice

> Those working in alternative food movements have neither the time nor often the inclination to study the larger context of their work. While committed people work in many different areas of the food system to effect change, those embroiled in direct action, whether on farms, in

> nongovernmental organizations, in laboratories, or in agrifood businesses, rarely have the opportunity to analyze their efforts. Yet this type of analytical process can reveal possibilities for and obstacles to success that may be obscured by the demands of day-to-day work.
>
> --Patricia Allen (2004)

There are a number of important and concrete ways in which academics and advocates can help to strengthen farm to school programs through research and practice. Research that describes and analyzes individual farm to school programs as well as trends associated with the larger national effort would be useful. As the findings in this study suggest, analyzing farm to school programs at the horizontal (i.e. local context) and vertical (i.e. political, institutional, and regulatory context) levels is important for understanding how they operate and whether or not they are realistically contributing to a more sustainable agrifood system. The proliferation of farm to school programs across the country and the speed with which supportive policies and programs aimed at institutionalizing farm to school programs are developed makes such analyses both timely and critical. I sketch several ideas below.

First, because this research is the first to study farm to school programs from the perspectives of farmers, food service professionals, and food distributors, additional documentation from these stakeholder groups involved in other farm to school programs would be beneficial. Such research would provide advocates with a broader understanding of the core experiences of farm to school program stakeholders and data to inform the development of supportive federal-level policies and programs. Research should be widely shared through a variety of media, including peer-reviewed journals and mainstream and niche media, so that insights can be put into practice.

Second, there is an urgent need for research on the conditions under which farm to school programs benefit school food service departments, children, and farmers. In today's climate of fiscal constraints and rising costs, comparing how local food procurement impacts revenue and expenses relative to traditional school food procurement practices is important. In particular, further study on the conditions under which farm to school programs increase revenue or decrease costs would be useful. For example, the food service professionals who participated in this study had the equipment and labor needed to prepare whole, uncut fruits and vegetables. However, many school food service programs are heat-and-serve operations and do not have the kitchen facilities or skilled labor needed to prepare foods such as butternut squash, which involve peeling, cubing, and cooking.

For children, research is needed on how ancillary farm to school program activities (e.g. school gardens, field trips to farms, harvest festivals, educational visits from farmers) influence their preference for farm-fresh foods. Do such activities change the symbolic meaning of fresh fruits and vegetables? Longitudinal or retrospective research would allow us to gain a better understanding of whether and how these different dimensions have positive and sustained impacts on children's health.

The finding that school food service sales contribute negligibly to farmers' total sales by volume and income is consistent with other reports on the impact of farm to school programs (Joshi & Beery, 2007; Ohmart, 2002). However, given the growth and variety of farm to school programs, it would be worthwhile to investigate whether farmers involved in other programs reap economic benefits — short- or long-term — through school food service sales. Open questions include: What is the role of

embeddedness in farm to school programs and other AAFNs in delaying or preventing farmers from being forced off their land? How do farmers negotiate the tension between marketness, instrumentalism, and embeddedness over the long-term? Important insights into these questions can be gained by interviewing farmers who are currently selling their product to schools as well as those who are no longer engaged in farm to school programs.

Third, many school food programs already use regionally-based food distributors to supplement the produce they purchase through broadline distributors. These mid-tier intermediaries should be included in farm to school program discussions. The role of such intermediaries in AAFNs generally has been overlooked, yet as the perspectives of the food distributors who participated in this study suggest, involving wholesalers, produce purveyors, and other regionally-based food distributors in farm to school program efforts may help to facilitate local food purchases without compromising the integrity of the program. The insights of the food distributors who participated in this study suggest possibilities for the development of values-based school food value chains that would maximize value for participants at each link in the supply chain. Descriptive and analytical studies of current farm to school program relationships between schools and food distributors are needed as well as documentation of the emergence and development of new relationships including those that are based on the underlying principles of values-based value chains.

In conclusion, farm to school programs have the potential to push farmers, food service professionals, and food distributors to alter their practices to help create an agrifood system that is environmentally sustainable, socially just, and economically

viable. However, this will only happen if advocates reflect on what they hope to accomplish by integrating locally grown foods into the school food program. As many scholars have articulated, there is nothing inherently virtuous about the local scale (Allen, FitzSimmons, Goodman, & Warner, 2003; Bellows & Hamm, 2001; Born & Purcell, 2006; Winter, 2003). Rather, it is more useful to think of "local" as a strategy that can have a range of positive and negative outcomes.

Geographic proximity between food production and consumption may help us to move towards a more sustainable agrifood system. However, it is not sufficient. The W.K. Kellogg Foundation has recently articulated its definition for what it calls, "good food" — healthy (it won't make you sick), green (its production didn't harm the environment), fair (no one was exploited in its production), affordable (everyone can access and buy it) (W.K. Kellogg Foundation, n.d.). This definition together with geographic proximity makes many of the assumptions behind the meaning of "local" food in farm to school programs, explicit. Will qualifying or complicating the meaning of "local" slow down the rate at which locally grown foods are added to school food menus? Probably. But it also will strengthen farm to school programs by discouraging participation of high-marketness school food service actors whose agendas conflict with those of advocates who are attempting to harness the potential of farm to school programs to effect real change in the school food marketplace for the betterment of the agrifood system and children's health.

APPENDIX A:

SAMPLING FRAME

Table 6-1: Sampling frame								
School district	**Region**[17]	**Site**[18]	**Student Population**	**Free and reduced lunch participation rate**	**Number of schools**	**Central receiving**	**Distribution strategy**	**Year project began**
Tulip Public Schools	UM	R	11,136	30	23	No	Farm → School	2004
Goosefoot Central School District	UM	U	23,295	81	90	Yes	Wholesaler → School	2004
Gilliflower Central School District	UM	R	3,451	38	7	Yes	Farm → School	2004
Petunia Public School District	NE	S	2,534	62	4	Yes	Farm → School	1991
Osmunda Community Schools	NE	S	2,375	36	5	Yes	Farm → School Distributor → School	1996
Jonquil Public Schools	NE	S	2,597	52	5	Yes	Farm → School Distributor → School	1998
Bellflower City School District	NE	U	41,089	87	66	Yes	Wholesaler → School Distributor → School	2004

[17] UM = Upper Midwest, NE = Northeast
[18] R = rural, S = suburban, U = urban

APPENDIX B:

INFORMED CONSENT DOCUMENTS

Distribution Strategies for Developing Farm to School Connections

Informed Consent Document

You are being invited to participate in a series of two interviews intended to study the economic viability and social impact of farm to school programs. The purpose of this research is two-fold: (1) to analyze and develop supply chain models for distributing locally grown foods into schools and (2) to examine the long-term economic and social potential of each model. The findings from this research project will be used to guide the development and implementation of farm to school programs.

Your privacy will be protected to the maximum extent allowable by law. You (and your institution) will be identified with an alias on all notes associated with this study. IN the event of any report or publication from this study, your (and your institution's) identity will not be disclosed unless prior permission is granted. Results will be reported in such a way that you (or your institution) cannot be identified. Data will be securely stored in an area that is accessible only to the researchers approved through the Michigan State University Human Subjects Review procedure.

The risks associated with participating in this study are minimal. You will be asked to respond to interview questions and provide financial data which you may feel invade your privacy or put you (or your institution) at a competitive disadvantage. All information provided will be treated with strict confidence and you may refuse to answer any questions. There is no immediate benefit to you from participating in this study. However, in the future, this study has the potential to benefit food service stakeholders, like you, through the implementation of farm to school programs.

Questions are encouraged. If you have any questions about this study, please contact: Betty Izumi at (517) 485-1678 or izumibet@msu.edu. If you have questions or concerns regarding your rights as a study participant, or are dissatisfied at any time with any aspect of this study, you may contact — anonymously if you wish — Peter Vasilenko, Ph.D., Chair of the University Committee on Research Involving Human Subjects (UCRIHS) by phone: (517) 355-2180, fax: (517) 432-4503, email: ucrihs@msu.edu or regular mail: 202 Olds Hall, East Lansing, MI, 48824.

Your signature below indicates your voluntary agreement to participate in this study.

Participant's Name (printed): _____

_____ _____

Signature of Participant Date

I have discussed the above points with the participant or, where appropriate, with the participant's legally authorized representative, using a translator when necessary. It is my

opinion that the participant understands the risks, benefits, and procedures involved with participation in this research study.

Signature of Researcher	Date

Informed Consent Document Addendum

Photo Release

I hereby authorize Betty Izumi to take digital photographs of my business (e.g. farm, food service operation, distribution facility) for use in publications and presentation associated with this research project or for other educational purposes.

Participant's Name (printed): _____

_____ _____

Signature of Participant Date

_____ _____

Signature of Researcher Date

APPENDIX C:

INTERVIEW GUIDES

Farmer Interview Guide 1

The purpose of this interview is to gather information about the market potential of school food service relative to farmers' other markets and how farmers make decisions about the kinds of markets they pursue. I also want to explore how farmers characterize the opportunities and challenges of farm to school programs.

1. Can you tell me about your farm operation?
   Probes: What do you grow? What are your growing practices? Do you have your own storage and packing facilities? Who are your customers?

2. How does your product get to each of your market outlets?
   Probes: What do you need to do (packing, weighing, washing) to get your product ready for market? Do you go through any intermediaries (brokers, distributors, packers)?

3. Approximately what percentage of your volume and sales dollars goes to each of your market outlets?

4. How did you learn about farm to school?
   Probes: Do you know anyone who attends or works at the school? Do you know any other farmers who are selling their product to schools?

5. What motivated you to begin selling your product to schools? What motivates you to continue selling your product to schools?

6. Can you tell me about your experiences working with school food service?
   Probes: What have been some of the benefits, if any? What have been some of the challenges, if any?

7. Suppose I was a buyer that approached you about buying your product. How would you decide whether you would be willing to work with me?
   Probes: What are the lowest prices or quantities you would be willing to accept? What is the maximum quantity you could deliver and at what price?

Farmer Interview Guide 2

The purpose of this interview is to follow-up on core themes, concepts, and processes that emerged during the first interviews. I also want to gain additional insight into the opportunities, challenges, and prospects of selling product directly to school food service.

1. There has been recent publicity about locally grown food. How do you define "locally grown?
   Probes: Same city, county, region, state, or country? Within a specific radius? Within a day's drive?

2. What goals, if any, do you have for your farm operation for the next 5 years? In the next 25 years? What (or who) influences your goals? How do schools fit into your goals? How important is it for you to sell your product to the local market?

3. What plans, if any, do you have to sell your product to more schools? What limits you from selling your product to more schools?

4. What do you think is the long-term potential of farm to school programs? What factors would determine whether or not you continue to work with the school?
   Probes: Do you consider schools a reliable and stable market? Are you satisfied with the price that you are receiving?

5. At what point do you think it would make sense to have an intermediary facilitating the sale between you and the school? Would you consider becoming part of a farmer cooperative that sold product to schools?

6. What changes, if any, have you had to make in order to accommodate schools?
   Probes: Have you had to make changes to in terms of your production, marketing, or distribution routines?

Food Service Professional Interview Guide 1

The purpose of this interview is to understand farm to school programs within the context of traditional school food procurement. I also want explore how food service professionals characterize the opportunities and challenges of farm to school programs.

1. Can you tell me about your food service operation?
   Probes: Do you have a scratch kitchen? Do you have a central warehouse?

2. Can you walk me through your procurement procedure for commercial foods?
   Probes: Who are your vendors (e.g. commercial distributors, shippers, wholesaler, farmers)? What do they offer in terms of products, services, or financial incentives?

3. Can you tell me about your farm to school program?
   Probes: How did it get started? How has it changed over the years? Do you have an educational component? Which vendors do you go to for locally grown food? Have you requested locally grown food from your broadline distributor?

4. What motivated you to begin buying locally grown food? What motivates you to continue buying locally grown food?
   Probes: What are the benefits of buying locally grown food?

5. How has local food procurement impacted your budget, if at all?
   Probes: How much do you pay for locally grown apples (or other farm-fresh product) versus non-locally grown apples (or other farm-fresh product)?

6. What are the challenges, if any, to buying locally grown food?
   Probes: How do federal, state, or local procurement policies impact your ability to buy locally grown food, if at all?

Food Service Professional Interview Guide 2

The purpose of this interview is to follow-up on core themes, concepts, and processes that emerged during the first interviews. I also want to gain additional insight into the opportunities and challenges of local food procurement and its fit with school food programs goals.

1. There has been recent publicity about locally grown food. How do you define "locally grown?
   Probes: Same city, county, region, state, or country? Within a specific radius? Within a day's drive?

2. What are the goals of your food service operation? How do your efforts to buy locally grown food fit into the goals of your food service operation?

3. How is the success of your food service operation evaluated? What would happen if your program was in the red?

4. What factors do you consider when buying locally grown food?
   Probes: How important is price? Do you consider product attributes such as organic, quality, and local? Does your relationship with your vendor (including farmers) come into play?

5. When you enter into an agreement with a farmer or regionally-based food distributor, do you commit to buying a specific volume of locally grown product throughout the year? If yes, what is the commitment and how was this negotiated? If no, what influence, if any, does this have on your ability to buy locally grown product?

6. What plans, if any, do you have to extend your efforts to include more locally grown foods into your cafeteria?
   Probes: Do you plan to add more locally grown foods to your menus? Do you plan to buy food from (additional) farmers? Do you plan to buy locally grown food through your food distributors?

7. What limits you from buying more locally grown foods? What influence, if any, does your business manager, school board or state education department have on your procurement decisions? What about staff, students, and parents?

8. What changes, if any, have you or your staff had to make to accommodate your effort to buy locally grown food? How do you think your staff feels about these changes?
   Probes: Have you or your staff made changes in menu planning, ordering, receiving, preparation, or marketing?

Food Distributor Interview Guide 1

The purpose of this interview is gather information about how food distributors make procurement decisions and why they buy and sell locally grown foods. I also want to explore how food distributors characterize the opportunities and challenges of farm to school programs

1. Can you tell me about your food distribution company?
   Probes: What products do you carry? What is your distribution area? Who are your customers? Who are your suppliers? What makes you different from other food distributors?

2. How does your company decide which suppliers to work with?

3. Can you walk me through your food procurement procedures?
   Probes: How do products get from the farm to your customers? What is your level of product handling?

4. How does your company develop the price that is paid for a product?
   Probes: Is this an industry standard?

5. Suppose I was a school food service professional who approached you about buying your product. How would you decide whether you will work with me?
   Probes: What are the lowest prices or quantities you would be willing to accept? What is the maximum quantity you could deliver and at what price?

6. What motivates you to buy locally grown product? When you buy locally grown product, do you buy directly from farmers or through a broker or other intermediary?

7. What do you see as the opportunities of farm to school programs? What do you see as the challenges of integrating locally grown food into the school food program?
   Probes: Have your sales increased as a result of farm to school programs?

Food Distributor Interview Guide 2

The purpose of this interview is to follow-up on core themes, concepts, and processes that emerged during the first interviews. I also want to gain additional insight into the opportunities and challenges of farm to school programs.

1. There has been recent publicity about locally grown food. How do you define "locally grown?
   Probes: Same city, county, region, state, or country? Within a specific radius? Within a day's drive?

2. Can you walk me through the organizational structure of your company? Where do you sit?

3. How are procurement decisions made? How flexible is this process? What or who influences your procurement decisions?
   Probes: How important is price? Do you consider product attributes such as organic, quality, and local? Does your relationship with your vendor (including farmers) come into play?

4. What are the goals of your distribution company? How does sourcing locally grown foods fit into your goals?

5. What is the primary reason why you buy locally grown product? What are some other reasons?

6. Suppose schools were required to buy produce grown in-state before considering produce grown outside of the state. What types of changes, if any, would you need to make in order to accommodate their needs?
   Probes: Do you have already established relationships with farmers or other intermediaries sufficient enough to meet the demand?

7. There is a huge push for schools to buy more locally grown food for their cafeterias. How has this impacted your business, if at all?
   Probes: Have you been awarded more bids? Have farm to school program events like harvest festivals increased your sales?

8. What limits you from selling more locally grown food to schools?
   Probes: Does the USDA commodity program affect your sales? Is there enough supply of locally grown foods to meet your customers' demands?

APPENDIX D:

CODE DICTIONARY

Table 6-2: Code dictionary			
Code	**Definition**	**Use Rule**	**Example**
Ancillary Benefits	Non-market factors that motivate farmers to sell their product to schools.	Apply when farmers make direct or indirect reference to non-market factors such as child nutrition or supporting the community that motivate them to sell their product to schools.	I'm very concerned about the dietary habits that our young kids are establishing.
Bidding Process	School food procurement regulations present challenges to buying or selling locally grown food.	Use when farmers make reference to the competitive bidding process as a roadblock to selling their product to schools or to improving the market opportunity of farm to school programs.	The schools want us to bid on these deliveries in August. But we hadn't picked apple one at that point. So how many apples are out there? What's the value? We didn't know that. There could've been a huge windstorm and we'd not have any apples to deliver. Or the value of those apples could have gone up tremendously.
Child Nutrition Goals	Child nutrition goals of food service program.	Apply when food service professional talks about the child nutrition goals of food service program such as increasing children's access to a variety of fruits and vegetables.	I think one of my top goals would be to bring the freshest possible food to students that we can and even to take a step backwards and go back to more scratch cooking as opposed to processed foods.

Children Like the Food	Children like eating locally grown food.	Use when participant indicates that children like eating the locally grown food. The food source (i.e. farmer, wholesaler, distributor) should be noted.	The biggest reason [to buy locally grown food] is because the students like it. They actually like it. They eat their apples, they don't throw them away. They eat things like asparagus. They eat things like squash, you know?
Competitive Price	Locally grown food is cheaper than or competitive with non-locally grown food.	Use when food service professionals state that price of locally grown food is an important motivator for buying these products. Price may be expressed in terms of value. The food source (i.e. farmer, wholesaler, distributor) should be noted.	I hope we're helping the local farmer. And it's also cheaper. [Locally grown apples] ended up being cheaper for us. Probably $4 a case, and if you're talking about 70 or 80 cases that adds up quickly.
Convenience	Convenient delivery location is a key factor for farmers and food distributors when deciding to work with schools.	Use when farmers or food distributors make direct or indirect reference to delivery location or proximity of delivery location to farm or distribution warehouse as a key factor when deciding to work with schools.	If we were going to get heavily involved in doing a lot of schools we'd have to be charging them so much money, and we're not going that with Goosefoot. But they're close and you know, we can make that work fairly easily. But if we were to branch out...our delivery cost is going to be so high to get the job done that it makes it uneconomical for the school.

Convergence	Business model or practices converge with farm to school programs' effort to connect school food service with local agriculture.	Apply when participant provides examples of buying and selling food as part of their normal business practices.	Basically what I'm saying is if there's a product that's produced here in [state] that's comparable or better than something out of state, we will utilize that and save the transportation costs.
Customer Service	Providing a high level of customer service or personal attention to customers differentiates food distributors from their competitors.	Apply when food distributor talks about bending over backwards (including sourcing locally grown product) in order to meet his/her customers' needs.	It's because of personal service. Not that they won't get personal service with a salesman, but salesmen are locked up on things that they need to sell, commissions.
Defensive Localism	The desire to buy and sell locally grown food based on a symbolic sense of community.	Apply when participant talks about local-national politics as a motivator for buying or selling locally grown food.	Why should our tax dollars be paying for west coast apples when they can pay for [state] apples. And the money goes back into [state] and it helps to keep the apples flowing.
Distribution	Distribution challenges prevent buying or selling locally grown food.	Use when participant talks about distribution or delivery of locally grown food as a challenge to extending farm to school program efforts. Distribution challenges may be expressed in terms of low volume order sizes, proximity of delivery location, lack of infrastructure for easy delivery.	One school I tried to work with, I finally gave up. It's a big school so I was all excited. It was right on my [route]. But I couldn't get near the school with a truck [...] and so the physical-ness of being able to find a good place to unload is sort of very important.

Farm to School Program Goals	Farm to school program goals or goals associated with integrating locally grown foods into the cafeteria.	Use when participant refers to their goals with respect to the farm to school program.	Farm to school fits because it's something that customers like and they want and there's actual desire for it in the schools, and even the students, the staff, our own staff, parents, really like to see that we're serving local foods.
Financial Goals	Financial goals of food service program.	Use when food service professional talks about the financial goals of food service program such as self-sufficiency.	The second [goal] is to be able to be self-sustaining because we don't get any money from a general fund so I have a million and a half dollar budget that I have to generate revenue for so I mean, we have to be self-sustaining.
Flexible Specifications	Ability to buy food that does not meet institutional food service specifications.	Use when food service professionals indicate that they are able to specify exactly what they want when buying locally grown food. This code should be applied when participant talks about specifications such as pack size or grades and standards. The food source (i.e. farmer, wholesaler, distributor) should be noted.	With the farmer, I could specify what I wanted. I said I didn't want a whole lot of stalk because I wasn't buying it by the pound I was buying it by the crate, so he cut that down for me [...] and then I didn't want a twist tie on it. You know how broccoli comes like that? And I didn't want that because it would have been an extra labor step for me. So I could specify that, which was a pretty good thing.

Food Education	Local food or agriculture education.	Apply when participant makes direct or indirect references to formal (e.g. lessons) and informal (e.g. farmer "walking the halls") education to connect children with local agriculture. Food education may or may not include presence of farmer.	The kids love [farmer]. He's one of the coolest guys in the world. And if we're able to do that, it becomes a cool food and kids like cool foods, you know. They don't want things that aren't cool. We let [children] know that [apples] are fresh picked, or that the cider's fresh. We just do that with [farmers'] products.
Food Quality	Food quality is one of the primary considerations when buying fresh fruits and vegetables.	Apply when participant talks about buying (or not buying) locally grown food because it is of higher (or lower) quality than non-locally grown products. Positive and negative comments should be noted.	There is a two day shelf life improvement on [locally grown product]. When I can, [buying locally grown] is what I do [...] and if the quality's there. Just because it's local doesn't mean it's good.
Freight Savings	Freight savings motivates food distributors to buy and sell locally grown food.	Apply when food distributor refers to freight savings as a benefit of or motivator for buying locally grown food.	From a freight standpoint, we want as much as we can from as close as we can.

Future Customer	Cultivating customers (children and their parents) motivates farmers and food distributors to sell locally grown food to schools.	Use when participant discusses farm to school programs as a way to influence children (and their parents) to buy their product in the future.	We really want to reach these young children to make them future consumers of apples and future customers of our farm [...] That would probably be the biggest and best reason to do it right there.
Greater Variety	Schools can buy a greater variety of fruits and vegetables when they are sourced locally.	Apply when food service professional makes reference to being able to procure a greater variety of foods when they come from local sources. The food source (i.e. farmer, wholesaler, distributor) and context should be noted.	Instead of getting a red Washington apple [from SYSCO] all the time they were getting different colors, different flavors, textures...a variety.
Increased Consumption	Increased consumption of fruits and vegetables among children is observed when product has been sourced locally.	Use when participant indicates increased consumption of fruits and vegetables among children when they are sourced locally. The food source (i.e. farmer, wholesaler, distributor) should be noted.	Kids eat more of these [locally grown] apples [...] instead of getting a red Washington apple all the time they were getting different colors, different flavors, textures...a variety. And I think that makes a difference.

Institutional Specifications	Locally grown products do not always fit institutional food service specifications.	Use when food distributors talk about the poor fit between product grown locally and institutional food service specifications.	These growers and shippers, they're gearing toward the food service industry, whereas sometimes, if a school district wants to use locally grown carrots, they're not always packed the same way as they need for food service.
Low volumes	Schools are low volume customers relative to other buyers including supermarkets, processors, wholesalers.	Apply when food distributor or farmer makes reference to schools' low volume orders as an impediment to the market potential of school food service sales.	To get a truck driver that's willing to go here with two pallets, here with two pallets, here with four, it takes him two or three days to make all the deliveries; he loses money.
Market Diversification	School food service sales are used as a market diversification strategy.	Use when farmers talk about school food service sales as a way to supplement their income or diversify their markets through a new (even if modest) outlet.	Sometimes you win, sometimes you lose but I believe it's incredibly important for farmers to have diversified marketing outlets and not depend solely on one venue. It's the aggregate we're looking at.
Market for Lower End Products	School food service is a market for lower end products or products that don't meet international standards of quality.	Use when participants talk about school food service as a market for products that don't meet institutional food service specifications.	Our returns were much lower last year with small fruit, but that fruit met the size requirements the schools were looking for.

Market Potential	Market potential motivates farmers and food distributors to sell their products to schools.	Use when farmers or food distributors talk about the potential of school food service to return reasonable profits as a motivator for their participation in farm to school programs.	I'm always looking for a place to make some money. It's a profit driven thing.
Niche Market	Farm to school is a niche market opportunity.	Apply when food distributor refers to farm to school programs as a niche market opportunity that he/she can fill better than his/her competitors.	If there's outside entities looking for product when product is scarce, they're not going to get it. We're going to have the first take on all the products.
Opportunity Buying	Ability to purchase product at below market price due to farmers' need to sell it quickly.	Apply when food service professionals and food distributors indicate that opportunity buys are a benefit of buying locally grown food.	[Buying locally grown] makes opportunity buys much more readily available.
Relationships (food distributor and farmer)	Relationships based on trust or history of working together enables buying and selling locally grown food.	Use when food distributor talks about trust-based relationships with farmers as critical to their ability to meet customers' needs.	I really stick with y main guy 'cause I trust him. And sometimes he's my eyes; if he doesn't have it, he'll go find it.
Relationships (children and farmer)	Relationships between children and farmer.	Use when participant talks about efforts to connect children with farmer. Relationships may or may not include presence of farmer.	Just promoting a local farmer. The kids know the name because he comes to the farmers' market here. So when we put his name out there, they have a connection.

Relationships (food service staff and farmer)	Relationships between children and farmer.	Use when participant talks about relationships between food service staff and farmer that yields support for farmer. Evidence of support includes buying farmer's product for personal consumption and encouraging children to eat farmer's product.	I think [farmer] hand-delivering it to the cooks is kind of like typing that local thing back because the cooks kind of pass that on to the kids. The cooks have that fuzzy feeling of [...] we love [farmer] doing those deliveries, you know, and [cooks] know it's local, they know it's high quality, and if they believe in something like that, it really flows on to the children.
Response Time	Improved response time motivates food distributor to buy locally grown food.	Apply when food distributor talks about improved response time as a reason for buying locally grown foods or maintaining relationships with farmers.	[Buying locally grown food] makes us more response [to our customer's needs].
Risk and uncertainty	Selling products to schools involves risk and uncertainty.	Apply when farmers refer to the risk (decrease value of product) or uncertainty involved in farm to school programs.	Well, if we have to do that all at the farm and have to buy equipment to do that, that's going to be a lot of investment and we don't know whether we'll get the bid or not.

School food budget constraints	Tight school food budget constraints limit market potential of farm to school programs.	Use when participant refers to budget constraints as an obstacle to improving the market potential of farm to school programs. Budget constraints may be indirectly expressed in terms of lack of labor or time to prepare whole, uncut products.	Sometimes it's a matter of a labor issue where at the school district if they bought 25 watermelons to serve the kids, sometimes they don't have their cafeteria personnel to cut up the watermelon and get it on an individual tray.
Seasonality	Incompatible school year and agriculture production cycles	Apply when participant refers to seasonality as a barrier to extending efforts to integrate locally grown foods into the cafeteria.	Well, as a grower [...] the problem is our kids are out of school from June until August. So that's a pretty big window of time they don't get the opportunity to try certain things.
Support for Farm to School Program	School staff support	Marks reference to attitude or support from school staff about integrating locally grown foods into the school food program.	I expected the cooks to just come unglued because they were buying bushels of whole squash [...] They were so sad when the squash supply ran out a couple of weeks ago.

Support Local Economy or Community	Buying and selling locally grown food supports the local economy or community.	Apply when participant talks about their desire to support their local economy or community by buying and selling locally grown food.	Well [...] it helps the community. It helps the economy in [state]. It creates somewhat, jobs. We've actually sold them to Sarah under what we would charge retailers and we've also realized you know, that because I live here, I know Goosefoot schools are not financially very well and I just kind of tried to keep her priced low.
USDA Commodity Programs	USDA commodity programs (i.e. DoD-Fresh) undermine efforts to sell locally grown food to schools.	Apply when food distributor or farmers refers to USDA commodity programs or DoD-Fresh as an obstacle to their ability to sell locally grown food to schools.	Sometimes USDA will come in with free apples, so that's something that every purveyor has to be concerned about.

APPENDIX E:

DATA DISPLAYS

Table 6-3: Conceptually clustered matrix: Motives of food service professionals			
School District	**Motives (themes)**		
	The students like it	**The price is right**	**We're helping our local farmer**
Tulip Public Schools	FQ, SS, RF	CP, FS, OB	SC, FE
Goosefoot Central School District	FQ, SS, RF	CP	SC, FE
Gilliflower Central School District	FQ, SS, RF	CP	SC, FE
Petunia Public School District	FQ	CP, FS	SC
Osmunda Community Schools	FQ, SS, RF	CP, FS	SC, FE
Jonquil Public Schools	FQ, RF	CP, FS	SC, FE
Bellflower City School District	SS	CP, OB	SC, FE

FQ = Food Quality
SS = School Staff
RF = Relationships with Farmers
CP = Competitive Price
FS = Flexible Specification
SC = Support Community
FE = Agriculture Education

Table 6-4: Conceptually clustered matrix: Perspectives of food distributors

Company Name	Business Model	Motives (types)	Challenges (types)	Relationships with farmers	Fit with routine
Local Fresh!	Produce wholesaler	CL, DL, SC, FC	LV, DT, SY	Generational (father and grandfather worked with same growers or families)	Always buy locally grown
Northeast Produce Distributor	Produce plus other perishables	SC, FQ, FS	CP, SY, BC	Nurture relationships with growers that have consistent quality and dependability.	Buy locally grown when possible
Mariano's Produce	Produce plus other perishable	SC, FQ, FS	CP, SY, BC	Doesn't try to bring price down every time. It doesn't do you any good if the farmer goes out of business.	Buy locally grown when possible
Homegrown Produce	Produce wholesaler plus farmer	SC, FQ	CP, SY, BC	The grower I work with is good to me. I'm loyal to him.	Prioritize locally grown (including own food)

CL = Convenient Location
DL = Defensive Localism
SC = Support Community
FC = Future Customer
FQ = Food Quality
FS = Freight Savings
LV = Low Volumes
CP = Commodity Program
DT = Distribution
SY = School Year
BC = Budget Constraints

Table 6-5: Conceptually clustered matrix: Motives and attitudes of farmers			
Farmer	**Market Potential (types)**	**Ancillary Motives**	**Challenges (types)**
Doug Jensen	FP, FC, MD	CN, SC, DL	PR, CP, LV
George Watts	FP, FC, MD	SC, DL	PR, LV, BC
Jeff Smith	FP, FC, MD		PR, CP, SY, LV
Shawn Burns	CL, FP, MD	CN, SC	SY, LV, BC
David Parker	CL, FP, FC, MD	CN	SY, LV
Ron Williams	CL, FP, FC, MD		CP, LV
Alan Moore	CL, FP, MD	CN, SC, DL	CP, SY, LV, BC

CN = Child Nutrition
SC = Support Community
DL = Defensive Localism
CL = Convenient Location
FP = Fair Price
FC = Future Customer
MD = Market Diversification
PR = Procurement Regulations
CP = Commodity Programs
SY = School Year
LV = Low Volumes
BC = Budget Constraints

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