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The Feasibility of Implementing Farm to School Programs In Bloomington-Normal Public Schools

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ABSTRACT: Farm to School programs promote partnerships between local farmers and school districts in which farmers can provide fresh organic produce for school meals and education about sustainable agriculture. A focus on local and organic foods has a variety of benefits that affect the environmental, health, and community. This study explores opportunities for Farm to School programs in Bloomington-Normal public schools, and concludes that a this type of program would be feasible in Normal, although there are quite a few barriers to overcome before implementation would be possible.

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Introduction

According to the National Center for Health Statistics, childhood obesity rates in the U.S. have been on the rise over the past 30 years. Data taken in 2004 shows that about 17% of 6-19 year-olds are obese or overweight, compared to only 5% in the 1970s (National Center for Health Statistics, 2008). These unsettling statistics have led parents and community members to look more closely at what children are eating. Since children spend a significant part of their day at school, this is an important area of focus in terms of eating habits. Students who are attending public school may or may not be eating a healthy diet, depending on what food is available or chosen to eat. The National School Lunch Program (NSLP) offered in public schools meets dietary guidelines, and meals offered tend to have high nutrient levels. Studies show, however, that NSLP lunches also have high levels of fat, cholesterol and sodium (Gordon, Devaney, & Burghardt, 1995; Villianatos, Gottlieb, & Haase, 2004).

In some schools, when parents, teachers, and others have found the NSLP to be inadequate in providing the best nutrition possible, they have looked to other sources of food for their children. One alternative they have considered is food grown locally in their community. Locally grown food, which is sometimes also organic, has a variety of environmental and health benefits. Because local food is grown closer to the consumer, it is fresher and has a high amount of nutrients. Produce that is grown farther away from the consumer has to be transported via plane or truck, which can diminish the nutritional value and freshness of the food (Edwards-Jones, 2008). Locally and organically grown food generally requires fewer fossil fuels to produce, and therefore emit fewer greenhouse gasses (Edwards-Jones, 2008). In addition, organic farming is more environmentally friendly in terms of maintaining soil fertility and biodiversity. Fewer chemical pesticides and fertilizers are used in organic farming, meaning less strain on the soil as well as a much lower risk of contamination of rivers and lakes (Hansen et al., 2001). Food grown with few or no synthetic pesticides can also be healthier for human health, particularly the health of children (Lu, Toepel, Irish, et. al., 2006).

The leading organization in connecting schools with local farmers is a national program called Farm to School, which was created in 1996 and is currently affiliated with about 2,000 school programs in 39 states (Farm to School, 2008). The Farm to School program works to connect local farmers and schools in various ways. Some schools incorporate local produce into their lunches, while others take students on field trips to farms and educate them about where their food comes from. A Farm to School program can be an important way to provide healthy meals to children while benefiting local farmers and the environment.

Farm to School programs have been started in various parts of Illinois and across the country but none so far in the Bloomington-Normal area. In my study, I focused on the feasibility of implementing a Farm to School program in Bloomington-Normal schools, particularly focusing on the local food aspect of Farm to School programs. I researched the health, environmental, and community benefits of locally and organically grown food. I also researched case studies of Farm to School programs across the

country, and provided information about common barriers to implementing these programs. In order to learn more about the situation in Bloomington-Normal, I conducted a number of interviews with local school district administrators as well as community members involved in the local food movement. The purpose of these was to gauge interest in Farm to School programs, and uncover what barriers may exist to implementing a program in this area.

Review of the Literature

There is a variety of benefits of Farm to School programs, including: the environmental benefits of local and organic farming, health benefits for children, as well as community benefits that affect farmers and the economy. A number case studies of successful Farm to School programs have been implemented in the U.S., although there were constraints that districts and farmers had to overcome before their programs were successful.

Environmental Benefits

Farm to School programs can be beneficial in helping a community be more environmentally sound because these programs support sustainable agriculture practices. Small-scale farms that provide food for the local community tend to practice organic farming, as opposed to conventional farming.¹ Some key features of organic farming include: a ban on synthetic fertilizers and pesticides, maintenance of soil fertility, and maximization of animal welfare (Hansen, Alrøe, & Kristensen, 2001). Various studies have looked at the environmental impacts of organic farming in comparison to conventional farming techniques. Much of the current literature available is focused on farming practices in Europe, but these results can be generalized to the United States as well.

Organic food production

One indicator of the environmental impacts of organic and conventional agriculture is soil fertility. In literature reviews comparing organic versus conventional farming, there tended to be higher levels of organic matter in soil of organic farms (Hansen et. al, 2001; Niggli, Schmid, & Fliessbach, 2007). This is likely due to the use of animal manure, compost, green manure, and plant residue as fertilizer, as opposed to synthetic fertilizers made from fossil fuels, used in conventional agriculture. There were also higher levels of biological activity (commonly indicated by a high population of earthworms) in soils of organic farms. This biological activity is vital for productive farming because it assures that the soil will be rich in nutrients and productive for agriculture.

¹ Many local farmers practice organic farming methods and use very few chemicals. However, some may use a small amount, or may not be certified organic. So while local and organic farming are not synonymous, they tend to be connected, and I will refer to them as one when talking about Farm to School programs.

Studies on organic and conventional farming indicate that there is higher biodiversity on land that has been organically farmed than on land that is used for conventional farming. There are higher numbers of birds and insects as well as a greater abundance of grasses and native plants in and around organically farmed land than on conventionally farmed land (Cobb, Feber, Hopkins, et. al., 1999; Hansen et al., 2001). Organic farms tend to have a higher diversity of crops, which helps prevent the spread of diseases and pests (and eliminates the need for chemical pesticides) (Stolze, Piorr, Häring., & Dabbert, 2000). Chemical pesticides and fertilizers widely used in conventional farming can be harmful to the health of plants and animal species living in habitats near farms. If these synthetic chemicals are used in abundance, they can contaminate ground and surface water (Tilman, Fargione, Wolff, et al., 2001; Hansen et al., 2001). Nitrate, a substance found in fertilizers, can be noxious at high levels and can lead to eutrophication as well as have detrimental effects for animals and humans if it enters drinking water (Tilman et. al., 2001; Stolze et al., 2000). Nitrate leaching has been found to be lower for organic farms than conventional farms, due to the use of organic-based fertilizers instead of chemical fertilizers (Cobb et al., 1999). In one case study, a farm converted from conventional to organic farming, and nitrate levels decreased by 50% (Stolze et al., 2000). From this evidence we can conclude that overall, organic farming tends to be more environmentally sound, with healthier soil, water, and surrounding plants and wildlife.

Another important indicator of the degree of environmental sustainability of agriculture is greenhouse gas (GHG) emissions. The most potent GHGs are carbon dioxide (CO₂), methane, and nitrous oxide. When emitted into the atmosphere, these gasses contribute to global climate change, which is currently causing the earth to warm as well as creating more frequent and intense natural disasters to occur. Agriculture plays a significant role in emitting GHGs, with about 25-30% of total GHG emissions due to agriculture (Niggli et al., 2007). Carbon dioxide emissions from conventional agriculture come from the direct use of petroleum on farms as well as the indirect use from the production and transportation of fertilizers and pesticides. Methane emissions due to agriculture can result from the compaction of soils due to machinery, the presence of large amounts of animal manure, and biomass burning. While there is some varying data on GHG emissions regarding organic versus conventional farming, overall the data indicates that organic farming tends to have lower emissions of nitrous oxide and CO₂. Current research does not indicate a difference in methane emissions (Stolze et al., 2000; Cobb et al., 1999; Niggli, et al., 2007).

In terms of overall energy use in agriculture, organic farming tends to require less energy than conventional farming. This is primarily because organic farms use fewer petroleum-based fertilizers, pesticides and energy-intensive feed (Hansen et al., 2001; Cederberg & Mattsson, 2000). Organic farming also tends to be done on a smaller scale with less heavy machinery and uses less chemicals, making it less energy intensive than conventional farming. On many levels, organic farming has been shown to be more environmentally sustainable than conventional methods, and is commonly advocated in current research. With the benefits of organic farming in mind, it is worth considering the potential environmental benefits of local food production.

Local food production

Locally grown food has similar environmental benefits as organically grown food, although arguments for local food generally focus on transportation and fossil fuel use. Around the world, transportation of food by airplanes and trucks has increased, due to an increase in trade and globalization. When the distances food travels is measured, they are deemed “food miles”. Some research suggests that food miles can be a helpful way to determine how much energy was required to transport a certain food (Smith, 2005). In the United Kingdom, airfreight has increased 140% since 1992 because food markets are globalizing, and more foods are being shipped to international consumers. According to Heller & Keoleian (2002), an average pound of fresh produce arriving at a market in Washington, DC traveled 1,685 miles to get there. As far as local consumers go, urban food vehicle miles have increased 27% since 1992, due to increased shopping of foodstuffs by car. More people are driving farther to shop at large supermarkets instead of smaller, local ones close to their homes (Smith, 2005). An increase in car use and traffic is connected with an increase in CO₂ emissions, pollution, traffic, and other negative environmental effects.

Because of increases in transportation over the years, the conclusion can be made that locally grown food is more environmentally friendly than non-locally grown food. Some studies suggest that locally grown food is less energy intensive since it requires less transportation from farmer to consumer. The consumption of diesel fuel in the transportation of food is responsible for most of the energy use in agriculture, responsible for about 25% of the total amount (Heller & Keoleian, 2002). Since local production tends to be done on a smaller scale, it is generally more energy efficient than large-scale food production (Edwards-Jones et al., 2008). Weber and Matthews (2008), suggest that a switch to purchasing locally grown food could achieve a 4-5% reduction in greenhouse gas emissions. Unfortunately, a complete switch to buying local food would require a huge social change in our society, and the foods available to purchase would be limited. Since many fruits and vegetables are only native to certain areas, some foods may ultimately have to be imported, unless we change our eating habits and rely only on foods native to our region and in season (Saunders, Barber & Taylor, 2006). If consumers focus on purchasing at least some of their food from local vendors, steps can be made to strengthen the local food economy and promote sustainable farming practices².

Ultimately, it makes ecological sense to grow organic and/or local food, in order to have the least amount of impact on the natural environment. If schools are able to get a portion of their food supply from local or organic farmers, they will be making a positive step in supporting environmentally sustainable agriculture.

² A few studies argue that if locally grown foods are stored in coolers for long periods of time or grown in greenhouses during months they are not in season, additional energy would be used. That energy may be comparable to energy needed to transport conventionally grown food around the world. (Mila` i Canals et al., 2007). However, complete life-cycle analyses have not been conducted regarding these issues, so these arguments are currently inadequately supported in the current research.

Health Benefits

Nutrition

Local and organically grown foods are not only environmentally healthy, they are beneficial for human health. Locally grown food inherently spends a shorter time traveling from the farmer to the consumer, causing the food to be fresher than food shipped from across the country. Fresh vegetables that travel long distances can decline in quality due to handling and vibrations during transportation (Edwards-Jones, 2008). Storage during transportation can also cause spoilage and nutritional losses. Local produce goes through little, if any processing before it is sold, ensuring that those fruits and vegetables will be fresh and of a high nutritional quality. When schools order produce from across the country, they may buy frozen and canned fruits and vegetables. Nutrients tend to be lost during the freezing and canning processes, making them less nutritious than fresh foods (Edwards-Jones, 2008). A focus on fresh, local foods would help children to eat higher quality foods with more nutritional value than non-local ones.

As mentioned earlier, the Farm to School program can be an important step in helping children to eat a healthier diet in a time when one in six children is overweight (Gow, 2005). Although federal school lunch programs meet dietary guidelines, they are high in fat and cholesterol, and may not be sufficient for complete nutrition (Story, Kaphingst, & French, 2006). In addition, competing foods that are sold in schools, like doughnuts, chips, soda, and candy, are not regulated and can be sold in cafeterias alongside the regular school lunch. In a 2001 study by UCLA, 14 low-income schools were examined, and researchers found high percentages of overweight students as well as low consumption of fruits and vegetables. After a Farm to School program in which a locally grown salad bar was implemented in those schools, fruit and vegetable consumption increased (Villianatos, Gottlieb, & Haase, 2004). Farm to School programs appear to be a good way to incorporate fresh produce into children's diets, especially for those who may not have access to those foods otherwise. It could be a positive step towards reducing the amount of obesity and diabetes in children, and helping them to make healthy eating choices.

Reduction of Pesticides

One of the most important requirements of organic food is the lack of chemical pesticides or fertilizers used in its production. Farmers practicing conventional agriculture use pesticides to keep away insects that may harm their crops, and fertilizers to help crops grow faster and in higher yields. Over 500 pesticides are sprayed on food crops worldwide, some of which are classified as carcinogens (Rekha, Naik & Prasad, 2006). It is difficult to prove that exposures to particular pesticides are causing human health problems, because we are exposed to small doses over a long period of time. In addition, researchers have not yet been able to determine the combined effects of various pesticides on the human body, and these possible effects are not taken into consideration when setting safe pesticide residue levels. A literature review of studies on the health effects of pesticides showed a link between pesticide residue and "respiratory problems, memory disorders, dermatologic conditions, cancer, depression, neurologic deficits, miscarriages, and birth defects" (McCauley, Anger, Keifer, et al., 2006). Most of the

studies looked at farm workers who were more heavily exposed to pesticide residue than the average individual, but it can be inferred that small doses may also have an affect.

A 2002 study looked at the existence of persistent organic pollutants (POPs) in the U.S. food supply. POPs are some of the most dangerous chemical compounds that exist, and include the chemicals DDT, aldrin, dioxins, PCBs, etc. POPs persist for a long time in the environment and bioaccumulate in humans and animals, meaning that as they travel up the food chain, they increase in strength. The study examined 20 different foods, all of which contained POP residue. Some foods even contained traces of five or more chemicals. POPs are linked with serious health effects in humans, including cancer, reproductive issues, and learning disorders. It can take years for the effects of POPs to manifest, and their effects can worsen over time. Residue from POPs and other pesticides are particularly harmful to children because they eat more relative to their body weight compared with adults. Children are also in various stages of development, so the effects of pesticides can be more serious. On average, preschoolers receive four times the amount of exposure to pesticides than adults do (Jacobson, Lefferts, & Garland, 1991). Studies examining Pythroid and Organophosphorous pesticides (Lu, Barr, Pearson, et. al, 2006; Lu, Toepel, Irish, et. al., 2006) found that elementary school children were exposed to low levels of the pesticides daily, but those levels were lowered when they ate organic foods.

Because of the evidence of potential health risks, one can conclude that it would be beneficial for children to eat more fruit and vegetables that are organic, not containing dangerous pesticides. If local organic produce was supplied to children through a Farm to School program, parents could ensure that their children were eating safe foods while away from home.

Community Benefits

Starting a Farm to School program can benefit members of the wider community as well as a school. For instance, selling local produce or dairy to schools can help local farmers expand and strengthen their businesses by providing a new market. It is important for communities to support local farmers because much of the food industry is controlled by a few large suppliers who can sell their food cheaply and in bulk. This threatens the livelihood of local farmers. Currently, more and more people are buying a majority of their food from large companies instead of small, locally owned farms (Smith, 2005). A shift to buying more locally grown food can help strengthen the local economy and help farmers in the area keep their businesses strong. By supporting local farms, the community is also preventing its open land from being sold for development, which would further urban sprawl (Webber & Matthew, 2008). Urban sprawl and development uses precious land that would otherwise be used for agriculture or animal habitats, and contributes to air and water pollution. When cities develop outward, they increase the distance that citizens need to travel to reach neighborhoods, stores, and other destinations, requiring more transportation. This increase in transportation translates to more fossil fuel use and higher GHG emissions from cars and buses. These emissions can contribute to climate change and other environmental damage. A Farm to School program can benefit the overall community by helping local farmers, aiding the economy,

and saving land from destructive development.

Case Studies

There are over 2,000 Farm to School programs in the U.S., all with their own unique spin on how to best incorporate local food into their school. Programs in California, Illinois, and Massachusetts are all examples of programs that can be recreated in other states and school districts. A few of these example programs are discussed below in more detail.

California

Riverside Unified School District (RUSD) in Riverside, California began its Farm to School program in 2005 at Jefferson Elementary School. The district worked with two local farms to supply the school with fresh produce for a salad bar offered every day. Depending on the season, the salad is half local or completely locally grown. Due to a grant from the California Endowment, a private health foundation, the school was able to hire someone to oversee the program and act as a liaison between the district and farmers. In addition to the salad bar, students were able to learn about nutrition, tour local farms, and have in-class presentations by farmers. An evaluation of the program determined that more students were choosing the salad bar over hot lunch; fruit and vegetable consumption increased for students who ate at the salad bar (58% more than those who ate hot lunch); and the farmers participating in the program were able to increase their revenues. Because of its success, the district planned to implement the salad bar program in the other 31 elementary schools (Joshi, Kalb, & Beery, 2006).

Illinois

In Illinois, a Farm to School program was started in Chicago called Fresh from the Farm (FFF). FFF was a combined project between a non-profit organization called Seven Generations Ahead and Oak Park District 97 schools. Two schools in the district wanted to implement locally grown food, but they were hindered by the fact that few schools in the district had extensive, operational kitchens. Working with the food provider for the district was also difficult because the provider did not want to change its menus to include local food. Through the support of parent/teacher organizations an event was organized to show parents, community members, and administrators how school lunches could become healthier and include local produce. The district worked with another school district to cook the meals and is currently working with farmers to incorporate more local foods into the schools. FFF also includes education for schoolchildren about where their food comes from, how it is grown, what it means to farm in a sustainable way, and the benefits of eating healthy. The district also hosts Parent-Child Healthy Eating Nights to teach about nutrition and sustainable agriculture. In terms of the impacts of the program, students and parents were enthusiastic about the program and learned more about healthy eating. In addition, students ate more fruits and vegetables after the program was implemented (Joshi, Kalb, & Beery, 2006).

New Hampshire

A school in New Hampshire chose to start its Farm to School program with only one type of food: apples. The New Hampshire (NH) Farm to School Program decided to

focus on apples because of the amount of small apples available in the state. Apples were easy to offer in schools because they did not require a lot of prep work or washing. Farmers worked with the program so that the locally grown apples did not cost more than apples bought from large suppliers. Apples were stored in coolers during the summer so that farmers could still sell their produce during that time. Some schools in the state have expanded to buying other local produce in addition to apples. In addition, one NH school started a program called “Buy a Friend a Meal”, in which parents and teachers could buy a meal for a child or family in need (Joshi, Kalb, & Beery, 2006).

These case studies show that Farm to School programs can be run in any part of the country, in a variety of forms. Each school has run into barriers though, when trying to implement their program, and the most common types of barriers will now be discussed.

Challenges to Implementation

One of the biggest challenges in getting local food into schools is competing with the existing contracts that district food services have. Most districts order their food from large suppliers, and ordering from sources outside that supplier (i.e. local farmers) tends to be frowned upon (Joshi, Kalb, & Beery, 2006). Through their contracts, districts should encourage their distributors to purchase from local farmers, or allow the district to augment their school lunches with a small amount of local produce. It also tends to be cheaper to order from large companies but schools can negotiate with farmers to pay a suitable price for their produce. Schools may also save money on transportation and handling costs associated with ordering fresh food from a supplier in another city or state (Tropp & Olowolayemo, 2000). In order to deal with the additional costs needed for local food, districts can apply for state or private grants (Joshi, Kalb, & Beery, 2006). These grants are helpful in covering additional labor costs as well. Ultimately the benefits are higher for both the schools and community members if schools buy local food, and these benefits will outweigh any initial costs.

Another barrier for some schools is storage and processing, since some do not have proper kitchen facilities to be able to process fresh food. Much of the food in school lunches is pre-made, prepackaged and takes little labor to prepare (Tropp & Olowolayemo, 2000). A smooth plan regarding delivery of the produce can aid this problem. Small grants can also help get equipment and additional staff, if needed. (Villianatos, Gottlieb, & Haase, 2004). Centralized food preparation facilities in school districts can be beneficial because it is easier for farmers to deliver their items and there is a larger venue for fresh food. Some school districts worry about being able to provide produce all year round, but a focus on foods that can be grown for a longer period of time will make the process more reliable (Tropp & Olowolayemo, 2000).

A Farm to School program can be an important way for schools to provide healthy meals for students, support more environmentally sound agricultural practices, and help protect students from harmful pesticides. Public schools in Bloomington-Normal are similar sizes as schools which have run successful Farm to School programs, and they could also benefit from these programs. Having fresh produce available would

help students to make healthier choices and eat more fruits and vegetables than they otherwise would. Children could learn about local agriculture and better understand where their food comes from, if educational pieces are included in the program. Local farmers in Bloomington and Normal would also benefit from this partnership, by increasing their revenue and maintaining their land. This study seeks to explore the current way that local school districts procure and prepare their lunches for children, and what possible barriers might exist in order to provide local food for those lunches. It looks at the ways other schools have dealt with challenges, and what solutions may work in order to make a move to buying local easier and realistic for the local school systems and Bloomington-Normal community.

Methodology

The first step of the project was to get a better understanding of the current school lunch system in Bloomington-Normal. I chose to conduct interviews in order to have direct contact with members of the school districts, and get thorough information on the current situation. I contacted the nutritionists/food directors of the Bloomington (District 87) and Normal (Unit 5) school districts, Connie Mueller and Pat Powers. Before my meetings, I created a PowerPoint presentation highlighting the various topics raised in my paper: benefits and local and organically grown food, case studies and possible barriers to implementation. In the beginning of my interviews, I showed the nutritionist the presentation and explained the purpose of my project. The purpose of this was to provide some background knowledge on Farm to School programs if my interviewees were not knowledgeable on the subject. In my interviews, I asked basic questions about what food service provider the districts use, the amount of processed and packaged food they order, healthy food options available for children, their knowledge and interest in local food, and possible barriers to incorporating local food into their food program.

I also wanted to get information about the current state of the local food movement in the Bloomington-Normal community, so I contacted Marsha Veninga from the Heartland Local Food Network and Bill Davison, the owner of Blue Schoolhouse Farm in Normal. In addition, I made contact with Enid Cardinal, the Sustainability Coordinator at Illinois State University, who set up a local food dinner this fall with local farmers. I also talked with individuals who have set up successful Farm to School programs, including Gary Cuneen from Seven Generations Ahead (SGA), a non-profit organization located in Chicago that works to create local community solutions to environmental issues. SGA has worked with schools in Chicago to implement Farm to School programs through their program, Fresh from the Farm. I also talked with Tom Freitas, the dining services supervisor for Sandusky City Schools in Ohio, who currently purchases fresh produce from a local farmer. Finally, I had contact with Greg Davis, the Produce Manager at Fox River Foods, a large supplier of food for schools. I gained more information about the Department of Defense Fresh Produce Program, which will be discussed in detail later.

I considered conducting surveys and focus groups on parents of elementary school students to gauge interest in local food in schools, but there were several reasons why I decided against doing so. I wanted to focus on parents of elementary school students because those parents are more in control of what their children eat than parents of older students in middle or high school. However, I found that it would be difficult to decide which parents in the district to talk to, and if I should do so randomly or with a purposive sample. In order to find out if parents were interested in Farm to School programs I also needed to know if they knew about these programs and the benefits of local food. That would have taken my study in a different direction, and would have focused more specifically on parents, instead of the district as a whole. Because my primary focus was to examine the food procurement of the school districts in the area and how local food could fit into the equation, I decided it would be more useful to talk to the administrators. This way, I could compare local districts with other schools that have implemented farm to school programs. The nutritionists from both school districts were wary of parent involvement early in the conversations about local food, because they wanted to have more information on the issue before parents got involved. Because the dialogue regarding local food in schools is in its preliminary stages, it seemed more useful to find out basic information in order to lay groundwork for future action.

Research Findings

The interviews I conducted of various community members as well as contacts outside Bloomington-Normal provided me with a breadth of information and opinions on the current situation regarding the feasibility of local food in schools.

My first interview was with the nutritionist for Bloomington schools (District 87), Connie Mueller. Mueller explained that District 87 purchases its food from Fox River Foods, a large food distributor located near Chicago. The district has ordered its food from Fox River for 14 years, and is Mueller is happy with the service. Fresh produce is limited and most produce comes frozen or canned. One elementary school in the district got a grant in order to get a different kind of fresh fruit or vegetable every day in classrooms, but this is not common among all the schools in the district. All the food in the district is prepared at one of the high schools, and is transported to other schools from that location. In terms of local food, there was a meeting five years ago in Bloomington with the state of Illinois, farmers from Chicago, and the district. Mueller found that local products were too expensive for the district's budget. In my interview with her, Mueller discussed several other issues that would need to be addressed before she would be able to incorporate local food into the district's food program. One issue was the fact that local farmers have a short growing season, and the optimal time to get most fruits and vegetables would be during the summer months. Although there is a summer school program, it is on a tight budget and would not currently be able to afford locally grown food. Another issue is food safety. Because organic and local farmers have different methods of production, the district would need to verify that the food grown on these farms was safe and grown in clean conditions. Mueller discussed possible issues with E.coli and bacteria. The farmers would need to be licensed and their farms thoroughly

inspected before the district would feel comfortable serving that food to its students. Lastly, if the district bought local produce it would need to provide extra labor to cut and wash the items, as it would not come pre-processed. This would likely cost additional time and money to be spent. While Mueller said she is interested in local food in general, there are currently too many barriers to consider introducing local food, and those barriers would have to be dealt with before any headway could be made.

I also talked with Pat Powers, the nutritionist for Normal schools (Unit 5). I asked Powers similar questions that I asked in my interview with Mueller, and I received similar responses, although she had a more positive outlook for the possibility of local food. Powers has had less experience working with local farmers in the community than Mueller. Unit 5 also orders from a large supplier, and the food is purchased in categories, not by specific item. Most food is prepared at the high schools, and of the 15 elementary schools, five get their food delivered from one of the high schools. The food from the high schools requires little preparation, and usually involves warming up pre-made items. Some fresh fruits and vegetables are provided for students, and elementary students eat fresh fruit about once or twice a week. A primary emphasis on canned or frozen fruits and vegetables is because fresh ones require more preparation on the part of the district and cost more money.

The district bids every year to receive fresh produce from the Department of Defense's (DoD) fresh fruit and vegetable program. The DoD and United States Department of Agriculture (USDA) are currently partnered to procure and distribute fresh produce to schools around the country through the National School Lunch Program. The DoD created the program because they were already making deliveries of fresh foods to veterans hospitals and military sites. The school district pays an initial fee and is able to bid for a certain amount of produce a year. The produce is domestically grown, and may include some locally grown produce, depending on the state. The state of Illinois does not currently acquire local produce for the DoD program. Farmers can register through the Defense Supply Center's Central Contractor Registration database in order to have their products sold to schools. For the 2008-2009 school year, Illinois was allocated \$3 million to spend through the (DoD), around \$20,000 of which went to Unit 5 schools. (USDA, 2008; DLA, 2008).

Powers discussed barriers such as cost, and additional labor that would be needed to deal with more fresh food if local food was purchased. The district has limited funds to pay for food and locally grown food tends to cost more because of its higher quality and the higher amount of manual labor involved. A switch to more fresh local food would most likely require more labor time to process the foods before they can be served. Volume would also be an issue, since the district buys large amounts of food for all the elementary, middle, and high schools. In addition, Powers discussed the importance of having produce that was consistent in quality and size. Sometimes locally or organically grown food can be smaller and more prone to insects due to the lack of pesticides used. The district would also need to know the regulations that organic and local farms follow, as well more specific information as to what items farmers could provide and in what amounts.

From my discussions with the two nutritionists, I decided there would be more opportunities within Unit 5 because the district is new to the idea of purchasing locally grown food, therefore was more of a chance that a successful partnership could be forged between the district and local farmers. Unit 5 has recently applied for a grant from the National Dairy Council in order to purchase cheese from Ropp's farm in Normal. The grant would help to pay for extra refrigeration and freezer systems to store the cheese. If the district receives the grant, they hope to start providing cheese at breakfast at the high schools, and extend the program to the junior high if successful. Powers believes it is important to start on a small scale and do a pilot program for any new kind of food program. It seems that if the district receives the Dairy Council grant and the program works out, there may be increased opportunity for a partnership between the district and local farmers.

Powers also suggested possible involvement between the Heartland Local Food Network and elementary schools like Prairieland School, that host Healthy Eating Nights for students and parents. This would be an opportunity for parents to be exposed to local food and for education to take place. Powers forwarded my information to the coordinator of the Healthy Eating Nights at Prairieland School, so that partnership is still a possibility. That event could be a small step leading to a larger partnership between Unit 5 and local farmers. Overall, Powers is interested in local food, but would like to know more specific information as to which farmers are interested in selling local food, and what products they could sell. Powers would be open to having an initial meeting with farmers or someone from the local food community to discuss options.

I wanted to get more details about how certain barriers were addressed in successful Farm to School programs, so I contacted Gary Cuneen from Seven Generations Ahead. In my conversation with him about the program, Fresh from the Farm, he elaborated on how the program got started and was operated. Schools in the Chicago area had pilot healthy school lunch fundraisers as well as healthy eating nights. The schools purchased products that required the least amount of processing, like cherry tomatoes, greens, and apples. They bought the products when they were most in season, during September and October, as well as in May. They were able to freeze some of the locally grown products to use in the fall. In terms of funding, they got grants from the USDA Community Food Projects grants, the Consortium to Lower Obesity in Chicago Children (CLOCC) and Farm Aid. The Chicago public schools, they held a forum on healthy school lunch models with the superintendent, PTO members, and parents. There were two pilot programs, which then spread to 10 schools. It was a three-year process to incorporate more local and fresh food into school lunches, and there were various barriers. This interview was helpful in learning more about exactly what steps other schools in Illinois have taken to incorporate local food.

I was able to get in contact with another individual who has experience with local food in schools, Tom Freitas, the Dining Services Supervisor of Sandusky City Schools in Ohio. I wanted to learn more about a program in a school district in the Midwest, where the city and school district would be comparable to Bloomington-Normal. In

addition, farming techniques and weather would be similar and easier to compare than a school district on a coast of the United States. Sandusky city schools have been able to deal with many common issues that go along with buying local food. Being in the Midwest, it is impossible to get over the issue of seasonality, so their fresh produce program only runs during the first couple of months of school. Freitas buys produce from Mulvin's Farm, which grows a variety of fruits and vegetables, including corn, cantaloupe, tomatoes and watermelon. The district also buys their milk from a local dairy. Freitas was able to work out an agreement to buy local produce for even less money than other produce suppliers, and the farmer delivers the food when needed. There is some extra labor involved in husking corn and cutting melons, etc. but the school district provides sufficient time for those tasks to be taken care of during school hours. The district was not concerned with sanitation issues because Mulvin's Farm sells to the public and already has sanitation standards and liability in place in order to sell their produce. In the off months, Freitas has a fruit and vegetable of the month on the dining services website. The farmer stays involved by providing growing tips for those fruits and vegetables and Freitas includes recipes and nutritional facts. Through the dining services website, fresh produce is continually promoted all year long. This program has only been in place for a few years but it is an example of how a partnership can be forged between a local farmer and a school district.

In order to learn about the issues regarding local food in the area, I talked with Marsha Veninga of the Heartland Local Food Network. Veninga has interest in Farm to School programs, and has done a significant amount of research on the issue. She provided me with information and contacts regarding the national Farm to School program, as well as other organizations focused on community connections to local food. She emphasized common challenges that schools may face when using local food, like limited seasonality and processing. Because many crops are harvested during the summer months, availability of produce can be a problem for schools, since they are not in session during the summer. Processing is an issue because farmers sell their produce freshly picked, and schools generally use fruits and vegetables that have been frozen or canned. Using fresh produce requires more preparation on the part of the school, and may require additional time in order to make the fruit or vegetable ready for children to eat. Veninga said that some local farmers would be interested in partnering with local schools, although there would be some issues to address. Farms would need to know exactly what products schools needed and the quantity. A survey of farmers would be useful in assessing who was interested in working with schools and in knowing what specific farmers could provide for the school district. In regard to regulations for organic and natural farms, Veninga explained that in order to be certified organic or natural, farmers have to follow stringent requirements and farms were thoroughly inspected. In response to my contacts with Pat Powers, Veninga said that in the future, she and a farmer from the community might be interested in being involved in a Healthy Eating Night at a school in the district.

Through contact with Enid Cardinal, the Sustainability Coordinator at Illinois State University (ISU), I was able to gain detailed information on the local food dinner that ISU held this fall. The University ordered a variety of fruits, vegetables, herbs, and meats

from nine different local farmers in a 50-mile radius. ISU experienced issues with cost as well as volume of food, although the dinner was only targeted for about 80 people. The cost of the dinner was significantly more expensive compared to the cost the meal would have been if they purchased the food through their normal provider. The cost of the local food dinner was \$1,522.98, while it would have been around \$632.44 had they purchased non-local items (Cardinal, et. al, 2008). ISU was able to get a grant through the Sustainable Agriculture and Education Program (SARE) in order to pay for some of the additional costs. ISU had to purchase food from a variety of farmers because one farmer was not able to supply enough food for the dinner. For a few farmers whose farms were farther away, transportation was an issue, and member of the committee spearheading the dinner had to go pick up those foods from the farmers. This event is a helpful model in terms of seeing how school institutions in this community have dealt with the purchase and processing of local food items. The issues that ISU encountered are similar to challenges that schools in the area would face when buying local food from farmers in the community. For ISU, cost and volume were big factors, and those would also be of concern for a public school district.

Finally, I talked with Bill Davison, the owner of Blue Schoolhouse farm in Normal. Davison provided a unique perspective from the other interviewees, and shed some light on what kinds of issues farmers are concerned with regarding this issue. Davison has attempted to sell his produce to local schools in the area, but he was not able to sell them for a high enough price. Schools wanted to pay the wholesale price for them, which is only a third of what Davison can sell the crops for at the Farmer's Market in Bloomington. Cost seems to be the biggest issue for Davison, and there are possible ways to solve this issue, which will be discussed further in the next section.

Discussion

From my research, I have gathered that Unit 5 schools are interested in looking into local food options, but a variety of barriers need to be addressed in order for a Farm to School program to move forward. Communication and cooperation between farmers and the school district administrators is the key to getting a partnership off the ground.

Health

One of the concerns that both Mueller and Powers brought up was that they believe local and organic foods may not be as safe to serve to students as the produce they usually buy. They were worried about students getting sick because of E.coli or other harmful bacteria in the food. This is a misconception regarding local and organic farms, because in actuality, these farming methods are safer and healthier for humans and the environment than conventional farming methods. As explained earlier, local farmers (many of which practice organic farming methods), use very few chemical fertilizers or pesticides, resulting in healthier soils, water, and overall environment. Fruits and vegetables that are grown organically may have small amounts of dirt on them, but they do not have traces of health-harming chemicals. School districts may tend to trust produce coming from large suppliers, simply because they are larger and more well known, but there may not be a lot of information provided as to where that tomato or

apple came from and the methods in which it was grown. In addition, produce coming from local farms will have a higher nutritional value because it was picked hours before it was delivered, as opposed to days or weeks in the case of produce coming from across the country. In terms of making sure that local farms are sanitary and safe, farms are inspected before they can sell produce to the community, and those who have organic or natural certification must follow stringent requirements. A representative from the district could go to a farm to make sure their farming practices were adequate for the district's standards. Overall, it would be helpful for farmers to explain their practices to the district so that they are comfortable with the growing practices of the locally grown food.

Seasonality and Availability

In order to address the issues of seasonality and availability, the school district could initially buy local food during the school months when they are the most in season, during the months of August through October. It would be important for the district to start out on a small level, buying a few kinds of fruits or vegetables, in order to try out the new system. If the district deemed the new products to be a successful purchase during those months, they could expand to buying a variety of products. Local dairy and meat farmers would be able to sell products more months of the year.

DoD Fresh Produce Program

While Unit 5 currently bids for fresh produce from the DoD fresh fruit and vegetable program, the produce is not necessarily locally or state grown, only domestically grown. Fox River Foods, a large food supplier in Illinois, has the contract to provide fresh produce for the DoD Fresh program in Illinois. According to Greg Davis, the produce manager Fox River Foods, there is not state directive to buy locally grown produce, and Fox River Foods does not currently purchase directly from any local farmers. Occasionally, they do purchase produce from the South Water Market in Chicago. Other states, like Michigan, have worked with the DoD buyers in their state to make sure they have a preference for buying locally grown food. It generally takes additional involvement on the part of local or state agricultural organizations in order to connect DoD buyers with local farmers. The buyers may not know otherwise know if farmers are interested in being a part of the program. While schools are able to indicate that they would like local produce whenever possible, that is not a reality in Illinois because of the way that Fox River Foods operates. In some cases, a meeting between DOD officials, farmers, and food service personnel can take place, and all parties can look at what local produce is available. The DoD negotiates prices between parties, which makes it easier for school districts (USDA, 2005).

There are positive and negative aspects of the DoD Fresh program. Because Unit 5 school district is already purchasing produce through the program, it would be easier for them to purchase local items, if available. They would be able to work through the DoD instead of directly to local farmers, and it would be simpler financially because they would continue paying the DoD. The DoD would also cover transportation, and availability, and seasonality issues (that school districts commonly face) would be taken care of by the DoD. However, since Fox River Foods does not currently supply schools with local or state produce, this may not be the most realistic option at this time for

getting local food into schools. If school districts or the department of education feels strongly about getting local produce, they may be able to start dialogue with Fox River Foods and the DoD to ask for local produce. This is a long-term project that will take time and require cooperation from many parties besides the school district. Farmers can register to become an “authorized fresh produce vendor” for the DoD, making them a part of the DoD database of vendors that a supplier can buy from (Tropp & Olowolayemo, 2000). Being a certified vendor can make it easier for school food services to purchase food from that farmer, because they trust the DoD program and are familiar with its standards and practices. Being certified may require additional practices like packaging and refrigeration on the part of the farmer, which may require additional time and cost. While working through the DoD Fresh program would be smoother for the school district, it would be more beneficial to work directly with a farmer or cooperative if the school wants to ensure they are getting local produce from the area. Currently, this is not the most viable option because local food is not a common option in the Illinois DoD Fresh program. In the future, this program may be more useful for getting local food, if Fox River Foods decides to purchase from local suppliers.

Summer School Program

Incorporating local food into a summer school program would be another way to address the seasonality issue. The existing summer school program for Unit 5 located at the Unity Community Center, provides breakfast for students. Local fruit or milk would be a possible addition to their current menu. The Unity Community Center has a garden where students can help grow foods to eat, which is already an important program for helping children to learn where food comes from. If the budget allows, local food may be able to be incorporated into this program in the future.

Local Foods Cooperative

In order to make it easier for a school district’s nutritionist to be able to purchase a large enough quantity of a certain product, it would be useful to have a local foods cooperative in Bloomington-Normal. A food cooperative is a way for local farmers to come together and sell their products in a centralized location (Cardinal et al., 2008). This way, school districts could purchase from the co-op instead of making purchases through a number of individual farmers. This would make the sale and purchase of local foods much easier for all parties involved. Some states have set up an online cooperative system in which farmers list what products they can sell, and at what price. Then a school district (or another type of buyer) can go on the website and order certain products online. This online co-op system is currently in place in Idaho and Nebraska (Cardinal et al, 2008).³

State and National Law

A change in the national and state law could make it easier for schools to purchase local foods. The 2002 national Farm Bill encouraged schools to purchase food from local farmers, but schools were not actually able to mark a preference for local farmers in their bids. Changes were made, and the 2008 Farm Bill indicates that schools

³ Free software to set up an online co-op is available here: <http://www.localfoodcoop.org/>

can now mark their preference for locally grown or raised products. The Farm Bill also allows states to pass their own legislation regarding the purchase of local foods (Farm to School, 2008). Some states have established their own statewide Farm to School programs, while others require schools to purchase local products if the cost and quality is sufficient. Seventeen states have passed some sort of legislation regarding local food in schools. In 2007, The Illinois legislature passed the Illinois Local Food, Farms, and Jobs Act. The bill called for a committee to be created, the Illinois Local and Organic Food and Farm Task Force. The Task Force submitted a report to the Illinois General Assembly in September 2008 that outlined various ways to help strengthen the local and organic food systems in Illinois. One section focuses on Farm to School programs and the need to increase the number of programs in Illinois or create a state Farm to School program. The report is still in the process of being examined by the Illinois general assembly. The creation of the Illinois Local Food, Farms, and Jobs Act, as well as the report submitted by the committee, is an important step towards the development of more Farm to School programs in Illinois, and more financial support through the state to help fund these endeavors. Creating a statewide Farm to School program in Illinois would create a stronger infrastructure for school districts to be able to learn more about buying local food and how to get it. School districts would have more access to financial resources to help them in their own programs.

Cost

One of the biggest hurdles for school districts in the area to overcome would be cost. If farmers and the district cannot come to a suitable price for goods, or the district does not want to pay for extra workers or labor time to prepare the items, outside funding would be necessary. Many schools that have implemented Farm to School programs have received grants to help with initial costs. These grants generally go to purchasing equipment for chopping and washing produce, or refrigerators to store the foods. There is a variety of national grants for helping to strengthen local food systems. For instance, the Sustainable Agriculture and Education Program (SARE) provides grants for farmers, schools, researchers, and graduate students (SARE, 2008). As mentioned earlier, ISU got a grant from SARE to fund part of their local food dinner this fall. There are also quite a few grants available through the USDA. For instance, the New North Florida Food Cooperative received two grants from the USDA Agricultural Marketing Service. These grants were Rural Business Enterprise Grants and were used for transportation, processing, and storage needs.

While there are other national grant programs, like SARE and those through the USDA, there are very few grants specifically for farmers and schools in Illinois.⁴ Investigating grants and funding opportunities through state institutions and nonprofit organizations that can be used to strengthen local food systems would be a helpful step. There are currently no state grants listed on the National Farm to School website, as there are for other states. An increase in the information available on grants for Illinois could help interested parties in Bloomington-Normal if they are interested in getting a grant to use for local food. As mentioned earlier, Unit 5 has bid for a grant through the National

⁴ A list of national grant programs is located in the appendix.

Dairy Council so they can buy from a local dairy farmer. The money from this grant would go towards buying extra refrigeration and freezer systems needed for the fresh cheese. Grants are feasible for schools to acquire, and can be extremely helpful in dealing with extra processing costs.

In addition to utilizing grants, school district food personnel can adapt some of their practices in order to save money. When a school in Olympia, Washington changed from iceberg lettuce to organic greens, the cost of lettuce increased from \$.72 per pound to \$3.13. Other organic salad bar items like cherry tomatoes, green peppers, and cucumbers were 30% to 60% higher in price than non-organic local items. To compensate for those additional costs, the food service in the district took out the dessert option at meals. This cut down on costs, and it helped the district clearly promote healthy eating to students. Another way they cut costs was to switch from plastic disposable eating utensils to reusable silverware. (Flock, Petra, Ruddy, & Peterangelo, 2003).

While schools can overcome additional costs through grants and other methods, farmers may have a tougher time making a large profit through the partnership. If farmers are able to sell their produce to districts at prices comparable to wholesale prices, they can make as much as they would through other venues, like a farmer's market (Tropp & Olowolayemo, 2000). At the beginning of a Farm to School program in California, farmers were paid a little less than wholesale. As the program continued and expanded to more schools in the district, farmers were able to sell their products for a higher price, and are now comparable to wholesale prices. Since the costs are spread out over many schools, the district can afford to pay more for the local produce, and the program is more viable (Farm to School, 2008).

Conclusions

There are several steps I believe Unit 5 and the local food community should take if they are interested in starting a Farm to School program. The first would be a survey of local farmers in the area to gauge interest in working with local schools. This could be conducted by a member of the Heartland Local Food Network or Bloomington-Normal Farmer's Market. This would help the school district know what farmers would be interested and what they could offer to the school.

The next step would be a meeting between Pat Powers of Unit 5 and interested farmers, or a representative from the local food community to discuss possible collaboration. This would be a time to discuss what products farmers could sell to the district, and the amount and types of food the district would want. Costs would also need to be discussed. At a later time it would be wise for the parties involved to create a contract which specifies what and how much a farmer can sell, when items will be ripe, when and where the food will be delivered, how the farmer will be paid, as well as how the products were grown (Bellows, Dufor, & Bachman, 2003). If it seems viable for the school district and farmers to work together, it would then be important to have a meeting between various community members, including Unit 5 administrators, farmers, a member of the Heartland Local Food Network, and parents. The meeting would serve as

a time for all the interested members to discuss what they can offer, as well as what limitations they see. Parents and other individuals could ask questions, voice their opinions, and learn more about local food. While this research has not focused on parents, their support is nonetheless extremely important, and including education about local and organic food into Healthy Eating Nights at schools would be useful. Involving parents at the large meeting with farmers, administrators, and other community members may help to gain more support for a Farm to School program.

An initial way to see if local food in the district is viable would be to start a pilot program at one school in the district. This could be done at any level, although it may be easiest to do it at the high school level because most of the district's food preparation is done there. Many pilot programs have been started at elementary schools, however, so this may be the most important place to start a pilot program. Students in elementary school are more likely than older students to eat school lunches provided by the cafeteria. It would also be most important to provide younger children with local and organic options because they are in stages of development, and most likely to be affected by pesticide residue in fruits and vegetables. A pilot program would allow the district and farmers to test out a Farm to School program and decide if it would be valuable to continue or even expand the program.

On a small scale, getting members of the local food community involved in the Healthy Eating Nights at Unit 5 elementary schools would be an important step in starting a Farm to School program. It would be a way to educate parents and students about the health and environmental benefits of organic and local food, and provide exposure to crops from local farmers. While this would be a small step in moving toward a Farm to School program in the district, it would be a helpful way to start forming partnerships between the district and farmers.

Overall, I believe it is possible for Farm to School programs to work in Bloomington-Normal public schools, although there are some serious barriers that will need to be addressed. The main hurdles include availability and seasonality, cost, and health concerns. Other districts around the country have shown that it is possible to solve those issues, and successfully incorporate local food into schools, but it takes a considerable amount of work and communication between schools, local farmers, and other community members. There are many solutions that can help the transition to buying local, including: addressing possible health concerns, incorporating local food into a summer or pilot program, Healthy Eating Nights, creating an online co-op, Farm to School state legislation, and applying for grants. Ultimately, a switch to more local and organic foods will be valuable for Bloomington-Normal schools because it will be healthy and educational for children, as well as increase the livelihood of the natural environment and local community.

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Appendix

Unit 5 Schools:

Normal Community High School
Normal Community West High School

Chiddix Junior High School
Parkside Junior High School
Kingsley Junior High School

Brigham Elementary School
Carlock Elementary School
Fairview Elementary School
Fox Creek Elementary School
Grove Elementary School
Glenn Elementary School
Colene Hoose Elementary School
Hudson Elementary School
Northpoint Elementary School
Oakdale Elementary School
Parkside Elementary School
Pepper Ridge Elementary School
Prairieland Elementary School
Sugar Creek Elementary School
Towanda Elementary School

National Grant Programs:

- The W.K. Kellogg Foundation's Food and Society Initiative: has a list of grants through many different non-profit organizations
- USDA's Cooperative State Research, Education, and Extension Service: a variety of grants for local agriculture, communities, and schools.
- USDA Food and Nutrition Service: grants for Farmers Market Nutrition programs, child nutrition, and food distribution.