

FARM-TO-SCHOOL IN HUMBOLDT COUNTY:
OPPORTUNITIES FOR ECONOMIC GROWTH FOR SMALL FARMERS AND
STRATEGIES FOR CHANGE IN PUBLIC SCHOOLS

by

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ABSTRACT

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How can school districts, food service workers, parents and communities address childhood food insecurity and obesity? Limited nutrition and environmental education programs in schools also perpetuate problems of inactivity, poor nutrition among youth and a disassociation with local environments. The Farm-to-School program is explored as one method Humboldt County is using to unite schools and farmers in a mutually beneficial relationship. This project assisted Farm-to-School's educational component by developing classroom presentations and slideshows as tools to integrate agricultural literacy into school curricula. A program evaluation design was also developed for future use in measuring Farm-to-School's various program objectives and outcomes. In addition, this project assisted in the development of a salad bar pilot program. Literature in the areas of food insecurity, food and nutrition policies, and farming practices is used as a background and framework for the existing problems. By incorporating these areas of study, methods for food security such as food policy councils and Farm-to-School programs are explored as strategies for change. Collected data and observations show that programs like Farm-To-School are extremely valuable to small farmers and teachers in Humboldt County.

Participants in Farm-to-School are enthusiastic and eager for extended education programs and increased marketing strategies that closely link local agriculture with county-wide school lunch programs.

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I. INTRODUCTION

Importance of Project

Despite the fact that the United States is the largest and most efficient food producer in the world, nearly 35 million Americans a year suffer from hunger, including 13 million children. At the same time, childhood obesity is also on the rise and is currently the most serious dietary problem affecting children. From the 1970s to the early 1990s, obesity levels nearly doubled--from 8 percent to 14 percent of children aged six to eleven and from 6 percent to 12 percent among adolescents aged twelve to nineteen years (Nestle, 2002).

According to nutritionist Dr. Marion Nestle (2002):

The increasing prevalence of childhood obesity results from complex interactions of societal, economic, demographic, and environmental changes that not only encourage people to eat more food than needed to meet their energy requirements but also encourage people to make less healthful choices and act as barriers to physical activity (p. 175).

This is also the case for Humboldt County, where according to the 2000 census data, the poverty rate for families with children under 5 years of age was 28 percent and 21 percent for families with children under age 18 (Census of Population and Housing, 2000). The 2001 California Health Interview Survey indicated Humboldt and Del Norte Counties as comprising the highest rates of hunger in the state (Holtby, Zahnd, Yen, Lordi, McCain, & DiSogra, 2004). At the same time, childhood obesity and shortcomings in the National School Lunch Program, including dependency on food commodities extremely high in saturated fats and sugars, are also on the rise. Across the nation, the National School Lunch Program (NSLP) serves more and more breakfasts and lunches to millions of children who

depend almost exclusively on their school cafeterias' services as a means of daily nutrition and for some, as a remedy for their hunger. For many, school meals will be their only source of food for the day (Azuma & Fischer, 2001). As schools rely more and more on these subsidized commodity programs, small farmers in Humboldt suffer as they are driven from the market by corporate competitors.

Equally to blame in this complex issue are the changing patterns of globalized food systems that augment the demise of small farms and the collapse of local food systems. Although farming is still the biggest business in the US and represents more than twenty percent of the country's Gross National Product (GNP), as well as twenty-two percent of the nation's workforce, only two out of one hundred Americans still farm independently today. This results in devastated rural areas that feel the brute force of these shifts in agriculture that leave more than nine million people living below the poverty line in the very nation that leads the world in the production of food (Rifkin, 1996). Food production has been transformed into a highly transportable and mechanized coordination of capital, labor and investments that are prepared to be marketed anywhere. As large corporations control more and more systems of agriculture, small farms cannot compete with prices and production. With this new access to global food comes the loss of participation in the cultivation and knowledge of food at the local level. As local markets become deprived by cheaper competition, small farmers suffer the loss of important outlets of exchange for their products.

In spite of these global problems, schools have the potential to make an impact and expect change at a local level. Food can find its way out of the cafeteria and into classrooms

to provide educational opportunities for students, teachers and the surrounding community. Citizen groups such as food policy councils can help create an integrated approach to food issues in schools and serve as a positive voice for change.

Farm-to-School (FTS) is one program that attempts to do just that, while helping foster links between schools and farms as an important part of building social capital within communities. Through extensive nutrition and education programs, FTS programs suggest the school food environment has the potential to become a vehicle to address the complex issues that the opening quote by Nestle addresses.

Project Description

Even with the local success of FTS programs in Humboldt County, a number of obstacles have inhibited their growth. Because of the county's rural location, limited growing season, and dwindling budget for the multi-district school system, local agricultural sales between farms and schools have been very slow. On a positive side, agricultural education programs have been expanded and continue to grow.

This project attempted to assist the coordination of FTS activities and promote its development on a larger, county-wide level. First, a literature review was conducted pertaining to issues involved with nutrition, school food policies, patterns of globalized food systems, food insecurity, and Farm-to-School initiatives. Second, an internship with the Humboldt County Farm-to-School program allowed me to examine problems, concerns and successes that exist locally within the school system and agricultural community. More specifically, my internship and research helped me develop and coordinate agricultural literacy programs through classroom presentations, interactive slideshows, and on-site farm

tours. My work also contributed to the development of a salad bar pilot program.

Additionally, I also collected a comprehensive history of the Humboldt County Farm-to-School program and documented its successes and failures. By assessing FTS in this way, I have examined suggestions for the program's future role in public schools and within the agricultural community. Furthermore, a program evaluation design was also developed for future use in measuring Farm-to-School's various programs.

II. BACKGROUND

This section will highlight the three-year history of Farm-to-School in Humboldt County, including the program's basic philosophy, its partnerships within the community, its public outreach and education programs, and its impact within these various capacities. The background chapter will examine some of Farm-to-School's successes, as well as some of the barriers that have inhibited the program's overall progress.

Farm-to-School (F^TS) is an up and coming marketing and education program that attempts to link small farmers together with local institutions, like schools, to foster a working relationship. Schools purchase fresh produce for cafeteria lunch programs from local farmers and students participate in agricultural literacy through in-class presentations highlighting their local food system. Farm-to-School serves as a tool to promote local economic growth by opening up schools as a viable market that pays competitive, wholesale prices to local farmers. Not only do schools have a reliable, local business that supports their students, farmers have a new, consistent outlet that benefits the local economy.

In October 2002, the Humboldt County F^TS program was born from a California Nutrition Network planning grant, an organization concerned with nutrition in low-income populations. Before it was funded, the idea arose from conversations between parents, educators, dietitians, community members, and school lunch personnel. Later that year a food policy council developed into Humboldt County F^TS. In its initial stages, F^TS targeted 34 low resource schools that qualified because fifty percent of their students received free or reduced-cost lunches. Once these schools were identified, members of the F^TS food policy council gathered information from each school regarding things such as lunch practices,

food purchasing, eating/cooking facilities, and garden and nutrition education. Based on these findings, two pilot sites were chosen including the Klamath/Trinity and southern Humboldt school districts. Some of the initial work that took place at these pilot sites was committee formation, grant research, food policy development and garden expansion.

During May 2003, Humboldt FTS also hosted its first county conference to allow community members to voice their concerns and suggestions for improving school meal programs around the county. Seventy participants included parents, teachers, farmers, school board members, and food service personnel. As well as having their concerns heard, participants also had a chance to hear success stories from around the state and country, and collaboratively identified strengths and weaknesses of establishing a FTS program locally. Guest speakers included FTS advocates, specifically Janet Brown from Berkeley's Center for Ecoliteracy, a leading player in the FTS movement. Brown's presentation emphasized the importance of strengthening local economies and helping kids become healthier by fostering better connections among community. A second county-wide conference would take place in March of 2004, which focused on empowering and assisting parents who wanted to help create healthy school environments (Watson, 2003).

From these conferences, FTS has successfully built relationships between members of the school food system and local farmers. Because of the county's rural location and financial stresses, development of the program has been slow. As word of FTS spread, other county agencies became linked with the program including the North Coast Cooperative (CO-OP), the Humboldt County Department of Public Health, the Humboldt County Office of Education (HCOE), as well as the North Coast Growers Association

(NCGA), which organizes five local farmers' markets. During the end of the 2003 school year, farmers began making their way into school classrooms to share their experiences as food producers, children found themselves searching for their favorite fruits and vegetables at farmers' markets, and students of all ages romped around on farm fields where some of their schools hoped to purchase food.

After months of organizing with the help of the Humboldt County Department of Health, the Eureka City School Board adopted a Nutrition Policy for the district in July 2003 and instructed the superintendent to develop a plan to implement it in the schools. The policy would help their students learn healthy habits by reducing the amounts of sugars and fats students consume on campus, restricting the sale of junk food during school hours, focusing attention on exercise, and implementing breakfast programs at schools with younger children. (See Appendix A: Eureka City School Food Policy).

Also in early 2003, southern Humboldt's efforts to improve school food came from concerned parents who approached the school board and demanded better food services. Yet the school superintendent was unconvinced of the benefits of FTS and told organizers they could not use food in classrooms or proceed in cooking projects. In the meantime, students from South Fork High School were still spending an average of \$500 per school year on soda and candy across the street at a gas station, which led to an overall decline in school meal purchases (M.R. Wyler, personal communication, October 7, 2004).

Fiery encounters at southern Humboldt school board meetings erupted in yelling and accusations and little productivity by late 2003. The organized nutrition group suffered because of their lack of organization and planning. Because of this, members of the group

began to develop school food policies without much guidance. In the long run, progress was slowed because of lack of planning. Relations with the food service director were not positive either because he felt the parents of the committee were too aggressive and uninformed (M.R. Wyler, personal communication, October 1, 2004).

As news of FTS spread throughout the county, FTS staff continued their conversations with school boards, teachers and parent groups. Classroom visits by farmers and farmers' market fieldtrips were some of the highlights of FTS during this time. Then in April 2005, FTS hosted its third annual county-wide conference entitled, "Local Food for Local People: Farms and Community in Partnership." Unlike previous conferences, this meeting was specifically directed at local producers, institutions, businesses and food service workers to engage them in discussions about collaborative marketing strategies, designs and distribution, as well as institutional purchasing, and food and farming potential in Humboldt County. The conference also featured Community Alliance with Family Farmers' (CAFF) Kerrie Stevens Thomas who discussed rural models for cultivating healthy farms, food and communities.

Barriers to Progress

The Humboldt County FTS program has been met with many obstacles that have inhibited its growth. Although the program has managed to directly assist more than 20 schools in the county, limited resources and time have restricted even greater influence. The expense of bringing local food into schools can be more than just monetarily taxing. For example in Humboldt, the county's rural location and dwindling budget for the multi-district school system have slowed connections between farms and schools. Other barriers include

increased duties by food service directors, transportation costs, securing centralized buying and storage, requirements to accept food commodities from government programs such as the Department of Defense food program (DOD Fresh), and little to no money to pay higher prices for higher quality foods. Currently grants managed through the Humboldt County Food Bank, Food for People, are used to help subsidize limited amounts of fresh, local produce in one pilot school's salad bar program. Subsidized foods help schools in the short-run, yet what happens when grant money is no longer available? School food directors say they cannot afford to switch precious funds and free commodities with high-end replacements.

Budget dilemmas

One of the largest obstacles FTS still faces is incorporating local, fresh produce into school cafeterias. Food service managers fear lack of interest by students, added cost from changing the current system of commodities to fresh foods, infrequent transportation and insufficient storage for fruits and vegetables, as well as unpredictable, seasonal changes that may affect produce availability. For example, salad bar programs have been met with resistance throughout the county as they are often seen as adding work, stress and waste for school kitchen workers to manage. Much of the produce suggested for school use by local farmers includes items that would suit cafeteria salad bars, which would be an added labor need by schools for preparation, monitoring and cleanup. Because employment for cafeteria workers around the county is dwindling, food service managers hesitate to bring volunteer labor to help manage a salad bar.

A local example of budget dilemmas can be found in the school cafeteria that serves southern Humboldt schools, which is faced with financial cuts that force the kitchen to operate at below capacity. Because of this, the food director and his staff prepackage salads with items from conventional means, including packed, pre-cut and pre-cleaned lettuce, as well as canned food items that could instead be purchased from a local source.

In the city of Eureka, the district food programs are variable. Jefferson and Grant Elementary Schools, as well as Winship Middle School, serve food cooked offsite because all three lack proper kitchens. Down the street, Eureka High has one of the largest kitchens in the district and boasts homemade soups as frequent lunch items. Many other schools in the area lack enough space or equipment to make meal preparation an easy task, and resort to pre-packaged meals. Zane Middle School calculated a financial loss when they switched snack offerings from junk food to cheese and apples. Yet staff said it was worth it. On the table for discussion in 2003 was a centralized kitchen for Eureka in which healthy meals could be made and distributed throughout the city (M.R. Wyler, personal communication, October 13, 2004).

The only documented public information regarding specific budget dilemmas for the Pacific Union School District (PU) and the Arcata School District (ASD) in Humboldt County was available from the *Arcata Eye*, a local weekly newspaper in Humboldt. In his May 2004 article, "Local school menus like apples and oranges," journalist Kevin Hoover documents, at length, the recent budget history of these local school districts. Because of this, the following two sections rely considerably on Hoover's published article.

Like Eureka, school food environments in the city of Arcata differ from school to school. For example, PU has only one school to feed, while the ASD has three kitchens that feed thirteen campuses everyday. In addition to the three schools in the ASD, other local schools depend on ASD's support. Some of these contracted sites include three schools in the McKinleyville Union Elementary School District, two charter elementary schools, including Jacoby Creek Charter School, as well as five high schools in the Northern Humboldt Union School District. Because of their size differences, each district has chosen a different means of feeding the students. PU has been able to freshly make both their breakfasts and lunches on location daily, while ASD makes their meals a day in advance at Sunny Brae Middle School, in their central kitchen. From there, meals are packaged and shipped to the various campuses around the county, reheated, and served for lunch. Included with the ASD meals for each cafeteria are nutrition information that follows the state-approved SHAPE Nutrient Standard Menu Planning system (Hoover, 2004). Some of the SHAPE requirements include serving size minimums and restrictions, as well as fat and sugar regulations.

By avoiding transportation costs and packaging, PU is able to keep their costs down, even to the consumer. For instance, for the past sixteen years, students pay the flat price of \$1.50 for lunch, while adults pay \$2.50. As of 2004, around 285 of the 446 students eat a school-supplied lunch, with about 180 paying the full \$1.50 and the remaining students eating for forty percent reduced or free (Hoover, 2004). Since the meals aren't packaged, the minimal waste leftover from the day is donated to a local pig farm.

For ASD, prices are a bit higher. At both Sunset and Bloomfield schools, lunches cost \$2, while Jacoby Creek Charter School charges \$2.50 for the exact same meal. Fifty-two percent of students participate in the meal program overall, though participation is higher, around sixty-five percent, of the K-5 students. Twenty-two percent of these total participants pay full meal prices, thirteen percent qualify for reduced price lunches, and of the sixty-five percent who regularly eat, the majority qualify for free meals (Hoover, 2004).

Staffing

Staffing is also something drastically different from district to district. PU has three food service workers to make fresh food daily, ASD only has one at each of the three sites, as well as one full-time cook. Although Arcata schools like Sunset and Bloomfield have fully-equipped kitchens, they lack the financial capacity to operate at the same level as PU. Food service workers are employed part time and are only contracted to heat entrees, so picking up a knife and cutting fresh lettuce is not an option. The food service manager developed an assembly-line style of food preparation eight years ago when expenses from their previous system got too high. Before the change, participation in the meal program was extremely low as choices didn't fit the tastes of students and teachers. The new centralized kitchen and distribution has allowed ASD to expand food choices, increasing student participation levels (Hoover, 2004).

A group of concerned parents and school officials known as the Student Nutrition Advisory Committee (SNAC) became troubled about the food situation at school. From 2000-2002 the group met with the ASD food service director and offered new ideas while budget issues continued to be addressed. Some of the group's main concerns surrounded

the inclusion of locally grown fruits and vegetables, as well as the types of packaging that were used. Although the SNAC group dwindled after two years, the group raised awareness of packaging waste and helped add more vegetarian items to the menus (M.R. Wyler, personal communication, October 7, 2004).

Food service programs like the one at PU operate smoothly because labor expenses are distributed over a large student body. Although ASD saves on labor costs by hiring part-time employees, their average cost per meal was higher than that of PU. When you add in small schools, transportation and packaging, costs are increased drastically, eliminating the opportunity to expand the staffing. Packaging from plastic containers cost ASD around \$10,000-\$12,000 from their \$150,000 budget in 2003. Even though federal feeding programs compensate schools that feed low-income children that qualify, the food service director at Eureka City Schools provides, at the schools' expense, for students whose families' incomes are too high to qualify for free lunch (Hoover, 2004).

Students involved in the food program at South Fork High in southern Humboldt receive class credit for helping the head cook prepare food, while they learn the business side of food service. When possible, the kitchen uses food from the school's garden. South Fork High is home to two of the largest high school greenhouses in the county, a unique and valuable teaching resource. But problems arise when there is no funding for school garden programs and when class time is limited for extra activities like gardening. The special education students actively participate in the school garden, yet at a very limited level due to the special needs of the students involved. Since there is only one teacher for the entire

class, volunteers are needed to guide student work projects (M.R. Wyler, personal communication, October 13, 2004).

Rural poverty

Another barrier to establishing more inclusive FTS programs throughout Humboldt relates to the county's geography. Location plays an important part of the Humboldt County Farm-to-School program, as most other programs throughout the state are more closely linked with major highways and transportation corridors that allow for strong partnerships between growers, schools and communities. FTS in Humboldt County, on the other hand, has had to cope with slow deliveries, inaccessible towns and an overstretched county school system that geographically speaking, would take a dedicated community member approximately three hours to drive from meeting to meeting. For example, if you travel up the coast and head east on the precarious Highway 299, you will find the Klamath Trinity Joint Unified School District (KTJUSD), one of Humboldt County's most outlying school districts. Its extremely rural and isolated location, lack of consistent community support, lack of communication between farmers, and transportation problems, make some aspects of FTS programs difficult, including nutrition education. On the other hand, the school district has various funding sources, an established community and school garden, a relationship with community resource centers and the elder program, many interested farmers close by that have assisted in school meal programs, and the support of their principal. In addition, they have a small student body with separate cooking facilities at each site and a cooperative food service director. So although FTS programs have moved slowly

in KTJUSD, they still show signs of support and interest in a localized food program in their district.

Landscape isn't the only factor that challenges a county-wide program like Farm-to-School. With federal and state budget cuts reaching all-time highs in recent years, rural areas are financially the hardest hit as their population sizes often work against them. Humboldt County has seen cutback after cutback in schools that were already under serviced. Schools are forced to reduce the few programs they offer, including school breakfast and lunch feeding programs that hundreds of students depend on for a daily food source.

The history and location of Humboldt County determines the types of industry that thrive here. Once an economically prospering community, years of overzealous natural-resource extraction have greatly diminished the agricultural, fishing and timber industries. Many of the timber companies of yesterday and today became rich from the coastal redwoods that dominate Humboldt's landscape. Clear cutting and poor forest management have closed companies, mills and laid-off hundreds of people that depend on the giant trees for their survival. As well, small farmers are finding it harder and harder to survive in agriculture, as many must depend on outside sources for employment. Fishing has shared a similar fate, a story many coastal communities have witnessed. Pressures to export have led to over-fishing the waters of Humboldt Bay and the Pacific, and triggered smaller populations of fish and smaller animals all together.

Humboldt County FTS has felt the effect of the underground marijuana industry in its attempt to build partnerships with farmers in several areas of the county. Because some farmers are hesitant to be identified and participate in public programs, it has slowed some

relationship building and community partnerships, especially in southern Humboldt. These underdeveloped farmer-relationships along with the area's investment in "alternative crops" makes interest in FTS programs limited. Problems in this area include low enrollment in school lunch programs that require parental financial information and disinterest from farmers to contract with local schools. Add all these barriers up and you get one very slow moving FTS program.

Successes

A large asset to the FTS program is the program's education site located at the Arcata Education Farm, managed by volunteers at Humboldt State University. Since 1993, the student-operated, community-supported farm (CSA) has served as a sustainable agriculture educational facility for students, community members and farmers. The Arcata Education Farm sustains more than 450 community members and students year after year through its educational programs and farm shares in Bayside Park. As a part of the Arcata's Parks and Recreation Department, the farm serves as an important asset to community members as it provides education outreach and a space for exploration.

The farm has served as an innovative model of community education about sustainable agriculture in Arcata. Community support has been enthusiastic and essential for the success of the farm in all of its outreach activities. In 2004, the farm celebrated its 24th harvest. In addition, the farm also plays an important role in school education as many garden programs in schools around the county have been cut drastically, and for the most part, eliminated from funding. At one time, Americorp volunteers developed extensive gardening programs for students at all levels throughout Humboldt County. Yet with state

budget cuts and downsizing, many gardens are left idle and school programs like composting are no longer a part of science class. Also, teacher interest in garden education fluctuates from instructor to instructor, which makes it difficult for a school to run a sustainable gardening program.

In addition to being the site of the CSA, the Arcata Education Farm is also the location of Humboldt State University's (HSU) Sustainable Agriculture classes, sponsored through the university's Engineering Department. Students use the farm as an outdoor laboratory where they learn the essentials of small-scale, organic agriculture. FTS has had the unique opportunity to help design student coursework around agriculture education, playing an essential role in outreach to local schools. In order to expand this education, FTS volunteers have guided HSU students through the process of curriculum development, which was implemented by students during the spring 2004. Not only does this serve as an exceptional learning tool for HSU students, it also gives young people the opportunity to educate their local community about healthy eating, nutrition and the importance of local agriculture.

Educating local youth about the biology and ecology of tending crops, as well as the processes involved in putting food on their own tables, is an extremely important component in the sharing of local knowledge and awareness about local food systems. Informing children about the significance of agriculture in their everyday lives is also an important first step in creating smart consumers who see value in eating healthy, nutritional foods from their local environments. These students not only have the power to influence their parents and schools, but they may also have the ability to affect change in the lives of

small farmers by promoting growth in their local economy and encouraging community engagement between producers and consumers.

Pilot salad bar program

During the June 2005 school year and again in the early fall 2005, the coordinator of Humboldt County's FTS program secured grant money to provide a salad bar cart for one pilot school site in central Humboldt. Not only has the school incorporated the cart into their food program, they also took advantage of local farmers to help supply some of the produce for the salad bar items. For this pilot site, location has played a significant role in their success as they are situated in the city of Eureka. The school's central location makes it accessible to highways and businesses, as well as a convenient drop-off place for farmers who conduct business within the city limits.

But this is not always the case for other schools in the county, as their rural location and distance from agricultural markets make them an "inconvenience" to farmers. The problem is perpetuated by farm locations too, as many farms are located in the easterly, drier and warmer Trinity/Klamath regions. Many of the schools with the greatest population of students, and therefore significant need, are either centrally or southerly located in the county. Although FTS was able to link two farmers from Trinity/Klamath to help support the pilot site in Eureka, FTS still hasn't been able to secure additional farmers who are willing to support more schools. This comes as a frustration to the FTS coordinator because many of the farmers who have said "no" to school contracts currently make weekly deliveries into the city. The coordinator questions why these farmers aren't willing to make one or two additional deliveries to the schools. Some additional questions include: Is it too

much of a risk to depend on schools as a major source of income? Is marketing to schools a financial issue?

Despite these struggles, there have been successes elsewhere. In 2004, members of the CO-OP in Arcata and Eureka joined in the FTS effort by regularly attending meetings and committing to help FTS activities. They have committed to education in the classroom, farmers' market and farm fieldtrips, as well as help with transportation costs, advertising and organizing. For several years the CO-OP has run October pumpkin patch fieldtrips to a local farm in Arcata. They have agreed to allow FTS to attach nutritional messages and an agricultural literacy component to tours.

Community commitment

Through negotiations between the two organizations, FTS has used the CO-OP as a resource for farmer/school relationships. Rather than have individual farmers set their own prices for the pilot site salad bar program, as well as individually deliver produce, the CO-OP assisted the program by receiving and paying for deliveries by farmers for FTS, setting their own prices, and storing produce until it was ready for pick-up. From there, the FTS coordinator received a grant to transport the food items to the cafeteria site. Although this model is not a sustainable operation because transportation is being subsidized, FTS hopes its success will prompt other schools to budget for local foods in future years. A fiscal analysis of the pilot site salad bar is extremely important to evaluate if the program is financially sound for other schools to attempt.

Initially, food purchased through the CO-OP was not more cost effective than other conventional sources, and also required preparation that many conventional sources did not.

Although local farmer prices were less competitive than regular distributors of conventional foods, local food from the county remained seasonal and unprepared, something conventional distributors have found avenues around.

2005 Conference: Building Relationships

Another success was the 2005 FTS local conference which included small group discussions for around 65 farmers, educators and community leaders. In addition, the conference featured regionally-based breakout sessions that emphasized the concerns and needs of the various communities in the county. Small groups were facilitated by FTS committee members who guided participants through the benefits and challenges of supporting local agriculture in Humboldt County.

As a whole, many participants highlighted the need for a database of county seasonal produce, the immediate need of a central location where surplus or regular produce can be taken, the need to build relationships beyond farmers' markets, as well as the need to expand the variety of foods grown in county through hydroponics, greenhouses, and value-added investments, such as canning and drying processing facilities. Many participants highlighted the need for educational programs for all age groups, including those in the food services who would benefit from hands-on education at local farms. Participants also suggested creating a community outreach campaign based on farm tours that would include a map of local farms that are open to the public and what seasonal items each farm offers (See Appendix B: 2005 Conference Evaluation).

This background section represents a collection of the history of FTS activities in Humboldt County. An essential part of this project is to trace the successes and barriers to

progress FTS has encountered in its three years of operation. Without this information, the following chapters would be left without a framework to examine some of the local issues involved in a rural education and economic programs like Humboldt County FTS. The next chapter is a review of the literature concerning many of the diverse issues involved with FTS including globalization, food security, school feeding programs, and environmental and community issues.

III. LITERATURE REVIEW

This section is a review of the literature that pertains to themes involved in food localization, community food systems and agricultural literacy. Topics such as globalization, United State's food policies and bioregionalism are investigated, as well are methods that increase food security such as food policy councils and Farm-to-School programs. The later methods are also explored as strategies for environmental, social and economic change.

The Issues

Globalization of Food

For many people across the world, eating together is a social and cultural tradition. It is a ritual that joins communities, families and friends in common union. The celebration of sharing and receiving food reaches far back into our histories, and influences patterns of consumption and exchange currently practiced today. More and more around the industrialized world, and especially in the United States, these rituals are disappearing in a globalized food system that brings fare from the far reaches of the world onto our tables. What was once a system based on local environments and seasons, food production has been transformed into a highly transportable and mechanized coordination of capital, labor and investments that is prepared to be marketed anywhere. As activist and author Helena Norberg-Hodge (1996b) writes, "... in the new economic system, political and economic interactions take a detour via an anonymous bureaucracy. The fabric of local interdependence is disintegrating as the distance between people increases" (p. 39). As local

markets become strapped by these limits to growth, small farmers suffer the loss of important outlets of exchange for their products.

Worldwide, changes in agriculture technology and specialized food production threaten the lives of more than 2.4 billion people who still depend on the land for their continued existence (Rifkin, 1996). Closer to home, these technologies helped shift a country rooted in agriculture to one that relies greatly on rising urban areas and industries. For example, in 1850, 60 percent of the nation was agriculturally based, but by 1995 this figure had dwindled to 2.7 percent of the population that managed to scratch-out employment in farming (Rifkin, 1996, pp. 112-113). In addition, by 1991, 86 percent of farm workers and 32 percent of farm managers no longer lived on the very land they farmed (Berry, 1996). Because of the decline, the United States Census Bureau announced in 1993 that they would no longer count the number of people living on farms, meaning there is no longer an agricultural class large enough in the United States to be recognized by the government--both in politics and influence.

Increased technological advances throughout the 20th century include large tractors, fertilizers, pest controls, processing techniques, and distribution systems. More recently, biotechnology and genetic engineering, as well as agricultural software and robotics, have led to the specialization of farming, allowing large farms to maximize economies of scale. For those that can afford it, many researchers say farms will be fully automatic in less than twenty years (Rifkin, 1996; Ashman, et al., 1993).

Future shifts toward highly mechanized systems inevitably force small farms out of operation as they are unable to compete with the high demands of production. Yet the

“biggering” of industry isn’t a new phenomenon. For example, the trend of larger producers controlling markets contributed greatly to the farm crisis of the 1980s that restructured agriculture to support large operations (Ashman, et al., 1993). The comprehensive food project by University of California students, *Seeds of Change: Strategies for Food Security for the Inner City* (1993) describes this transformation:

During this time of restructuring, the technology of production was rapidly changing. From 1930 to 1980, agricultural output rose by 150 percent while inputs (such as labor and supplies) increased by only seven percent. Over the last two decades, labor use dropped by half. These technological changes, allowing substitution of capital for labor, had the effect of making traditional family farms outmoded, since they are too small to fully use the labor of the farm family (Ashman, et al., p. 57).

Shifts away from farms to agribusiness caused significant changes in marketing as well. As Dr. Stewart Smith, economist for the Congressional Joint Economic Committee, found in 1992, money spent marketing agricultural products climbed from 44 percent to 67 percent from 1910 to 1990, and included an increase of spending from \$35 billion to \$216 billion, while actual farming decreased by one billion. Agricultural inputs climbed at this time from \$13 billion to \$58 billion (cited in Lehman and Krebs, 1996).

Between the 1930s and the late 1980s, the United States Department of Agriculture (USDA) economists estimated a decrease of five million farms in America. Today, roughly half of farms contain operations of 2,000 acres or more. The remaining 28.8 percent of agricultural land is home to farms 500-1,999 acres, while farms up to 259 acres constitute only 12.6 percent of the total farm land in the United States (Ashman, et al., 1993). This trend doesn’t always equate with efficiency, as Wendell Berry points out in his essay, “Conserving Communities” (1996): “U.S. agriculture has demonstrated by its own ruination

that we cannot solve economic problems just by increasing scale; moreover, that increasing scale is almost certain to cause other problems—ecological, social, and cultural” (p. 410).

Agricultural subsidies also play a role in the globalization of food. The United States and European Union spend billions of dollars every year to subsidize their agricultural sectors, which distorts the national and international prices of food, inflating their competition on the world market. These subsidies to large producers encourage the overproduction of cheap foods. In turn, these lower quality, subsidized foods are then dumped and sold as low-priced commodities in poor countries whose farmers cannot compete with large-scale producers and inflated prices. In addition to subsidies for production, export subsidies remain high for many products and distort competition on world markets. Depleted world prices create serious problems for poor farmers in developing countries who must compete in both global and domestic markets with low-priced commodities. Depressed commodity prices inhibit investment in agriculture in developing countries, and although consumers may benefit from low prices, rural livelihoods are often jeopardized (Food and Agriculture Organization of the United Nations, 2003).

Although size plays an important element in the capacity of output on farms, government assistance in the form of direct payments, favorable tax and labor laws proportionally help large operations over small to maintain their hefty outputs and specialized technologies. For example, the 1996 Farm Bill, often referred to as the “Freedom to Farm Act,” eliminated deficiency payments for certain commodities. Fixed prices were no longer guaranteed when the market sunk low, devastating many small farmers in the process (Azuma & Fischer, 2001). As output is much more limited on a small farm,

eliminating deficiency payments can wreak havoc on farmers who have a smaller stock of goods. Larger farms may have an easier time rebounding from elimination of subsidies because it may only affect a small portion of their crops. Helena Norberg-Hodge points to this in her article “The Pressure to Modernize and Globalize” (1996b):

But when distantly produced goods are heavily subsidized, often in hidden ways, one cannot really talk about comparative advantage or, for that matter, “free markets,” “open competition in the setting of prices,” or any of the other principles by which economists and planners rationalize the changes they advocate. In fact, one should instead talk about the unfair advantage that industrial producers enjoy, thanks to heavily subsidized infrastructure geared toward large-scale, centralized production (p. 39).

With the increase of large-scale agriculture comes the proliferation of agribusiness. Corporate agribusiness has inserted itself into our farm fields, our grocery stores, our businesses and schools, and onto our dinner tables in the form of both processed and unprocessed goods. Herbs and spices, meat and dairy, fruits and vegetables, organic and non-organic, are often produced, owned, and operated by corporate players. An example of the scope of the corporate food industry is Philip Morris, one of the world’s most powerful tobacco companies who also owns food companies such as pizza (Tombstone Pizza), bread products (Lender’s Bagel Bakery), milk (Sungold Dairies), pasta (Kraft Macaroni and Cheese), and vegetarian meat substitutes (Boca Burgers). Caffeine magnets Pepsi and Coca-Cola have ventured into the market of “natural products,” with their other brand names “Odwalla” and “Tostitos Organic,” respectively (Lehman and Krebs, 1996).

In a world where the average meal now travels 2,000 miles before it is served and changes hands more than a dozen times (Ashman, et al., 1993), multinational corporations are making the economic and political choices that have led to the collapse of small farmers

around the globe. This contributes to the devastation of the very societies that once linked producers and consumers to the land. As these systems become more complex and specialized, they play a persistent role in almost every step of production--from seed to fertilizer, machine to transportation-device, as well as market to consumer. When large conglomerates own all the stages of food operations (which, in 1996, over 95 percent of the food in the United States was controlled by corporate agribusiness), it becomes impossible for smaller producers and processors to compete with the corporation's system of cheap labor and inputs (Lehman and Krebs, 1996). If a farmer can't supply what these corporations determine as the current needs of the market, or if a processor can't afford to operate at the price that is deemed appropriate by the big players, then they are replaced by someone who can, most likely the large corporation's own, smaller company.

As Karen Lehman and Al Krebs point out in their essay, "Control of the World's Food Supply" (1996), three driving factors that secure corporate agribusiness' influence include the redirection of capital into the production of artificial goods, the standardization of food supplies, and the creation of synthetic foods. The authors write:

In pursuing each of these objectives, corporate agribusiness has sought first to diminish the role of family farmers in the production of our food. Second, it has sought to relegate the farm community to a small and select group of economically and politically impotent raw material producers serving a nationwide food manufacturing system. Such a system can be controlled from afar by a select number of giant corporations and economically powerful individuals (p. 124).

Economics

Today people's lives have been transformed by the economy in which we currently live. The dawn of industry spurred economic growth and freedoms for many, not only increasing worker efficiency but insuring the availability of goods and services for most

people in the United States (Daly & Cobb, 1989). With these new freedoms came consequences. As industry provided more choices for a society, materialism and competition grew stronger among citizens. In their book *For the Common Good*, Herman Daly and John Cobb (1989) point to historical economist Karl Polanyi as one who criticizes the effects of economic progress on society. Polanyi says of the industry and social developments, “At the heart of the Industrial Revolution of the eighteenth century there was an almost miraculous improvement in the tools of production, which was accomplished by a catastrophic dislocation of the lives of the common people” (cited in Daly & Cobb, p. 4).

The International Monetary Fund (IMF) (1945), the World Bank (1944), and the General Agreement on Tariffs and Trade (GATT) (1947), have aided in the expansion of the global economy. These entities support patterns of development that have changed the world into an intricate system of market-driven, export economies. Although economic growth has grown five times since the 1940s, and international trade has expanded twelve times, many successes have only been felt by those in the wealthier, “global north,” who control the very system itself (Barker, 2002). Many scholars (Barker, 2002; Gottlieb, 2001; Plumwood, 1998; Berry, 1996; Shiva, 1988; Dodge, 1981) argue that globalization has shifted ideals of growth toward destructive patterns, such as accelerating the gap between rich and poor, the devastation of ecosystems worldwide, and the erosion of local knowledge and traditions of communities around the globe that are being replaced with market-oriented futures. Despite these negative impacts, the continual expansion of economic outputs, hence, economic growth, is seen as a significant solution to world problems of poverty and hunger. Yet this growth demands much more from the environment than from those that

seek the takings, as increased competition increases the burdens on an already overstressed, over-consumed landscape (Korten, 1996).

The theory of comparative advantage first explored by Robert Torrens in 1815 regarding international corn production, and later by David Ricardo in 1817 (Barker, 2002), is often cited as a vital aspect of international free trade that allows countries to specialize their industries around the efficiency of production. According to this theory, when one country is able to produce more efficiently than another country it has an absolute advantage in production. If Country A can produce soybeans cheaply, yet corn production is more expensive because of added inputs and increased labor, then the country should concentrate their efforts on soybeans as an export, and import corn from Country B who can produce it more cheaply. In this model, both countries involved gain from trade by maximizing efficiency (Barker, 2002).

Because of this system of trade, comparative advantage often causes countries to depend on foreign markets for food and international trade. The influence of this trading can encourage countries to implement destructive national policies that create more harm than good. For example, comparative advantage often doesn't consider environmental issues; social and cultural practices that may historically define community customs and tie people to their land may be forfeited in the application of comparative advantage. Export-oriented trade at this level causes a domino-effect for all participants involved. If small changes in soybean production are made in Country A, Country B feels the effects twice-fold because they have no control over the product or the price, and are now dependents of the system, a system most often influenced greatly by multinational corporations. As Lehman and Krebs (1996)

explain, “These huge companies now have the power to shift comparative advantage simply by their decisions on where to build warehouse, transport, and processing facilities. Our food system is very close to being totally managed--without citizen involvement” (p. 125).

Other economic tragedies of global trade include “export dumping,” which refers to the business of selling food for much less than the cost of production, therefore causing farmers and producers to suffer from these losses as food production costs exceed market prices. Export dumping may cause farmers to then find cheaper, more marketable goods to produce. Around the world and in the United States this type of practice affects agricultural areas by distancing communities away from traditional agricultural practices (Lehman & Krebs, 1996).

Barriers to Access in Conventional Market

Major markets such as supermarkets prefer to use direct trading to avoid extra transaction costs. With direct trading, supermarkets often use brokers to buy produce, where transaction costs are fixed. As the broker represents segments of the agricultural industry, it is easier for him/her to limit business with just a handful of large companies who are able to guarantee consistency, as well as large amounts of product (Ashman, et al., 1993). This represents a barrier to entry for smaller farmers who cannot make those kinds of guarantees and whose seasons may be unpredictable. As prices are set by the larger players in the market, competition becomes extremely difficult for smaller operations.

Contracts are another way smaller farmers have had a disadvantage in the produce trade, as they are often made according to size and dependability. As producers lose control over what they plant through contracts, buyers avoid high transaction costs by dealing with

pre-determined, large operations. For example, in 2000 USDA regulations restricted federal spending on “localized” food for school districts spending \$100,000 or more on local farmers, claiming “geographic preference” a no-no (Villianatos, 2005). This limit is much more restrictive in California, where schools are only allotted \$25,000 per contract. A step beyond contracts is full integration in which farmers, processors and packagers are all part of the same conglomeration. This way decisions can be made at all levels of the industry, from field to labeling, avoiding extra costs and losses for the corporation (Ashman, et al., 1993).

In a model market economy, farmers use price to determine what and how much to produce, while consumers use price to decide what to buy and how much they will purchase. Within this model, certain assumptions are made about the “free market” which may include a stable demand and mobility of resources. However, the agricultural market tends to veer away from this model as outside forces like subsidies often set prices so farmers don’t lose out and consumers don’t end up paying extortionate prices for products. In this way, price takes a backseat to government programs that carry on the role of coordination (Ashman, et al., 1993).

Hunger & U.S. Food Policies

Why is there such a problem today of hunger around the globe, within the United States and in our local community, when agribusiness has grown so large and dominates industrialized nations? History points to the 1930s and the Great Depression as one of our first glimpses into the ironic dilemma of “too much food and too little to eat.” At the same time, the restructuring of agricultural systems from many small farms to large, conglomerate farms led to the collapse of small farmers, rising unemployment, and at the same time,

overproduction and under pricing (Ashman, et al., 1993). With the rise of government surplus commodities, hunger problems only became strengthened by lack of food at regional levels.

Programs within the New Deal sought to limit commodity production while protecting prices, yet at the same time concentrated efforts around emergency relief programs. The Agricultural Adjustment Act of 1935 also helped corporate growers as it focused on pushing surplus foods into the USDA and was influenced greatly by large grower contracts. With the establishment of agencies such as the Federal Surplus Relief Corporation, energy was focused on getting food as quickly as possible into relief programs, which allowed government, rather than outside agencies, to play a dominate role in commodity programs (Gottlieb, 2001).

Internationally, the passage of Public Law 480 (PL 480) in the 1950s, which allowed for the opening of new outlets for food products and commodities, contributed to U.S. domination in international markets. Designed during the Cold War, PL 480 enabled American-owned food companies to promote and endorse cheap technologies and processes, with which many small farms could not compete. The law stabilized food prices which contributed to over production and a surplus of foods. Like “green revolution” policies which promoted the use of chemical inputs like pesticides and mono-cropping, PL 480 heavily influenced a farmer’s dependence on off-farm business practices. Expanded agricultural technologies and equipment enabled the production of new foods and extended seasons that also brought about shifting patterns in diet. Aggressive use of pesticides and herbicides allowed U.S. corporations to grow food fast and cheap. The shift to international

products was the result of U.S. control in countries that could no longer afford to grow local food staples that once were regionally based (Gottlieb, 2001).

In the 1960s, problems of hunger were again brought up in government during the Kennedy and Johnson eras. These administrations sought to expand surplus food programs. At this time, the Civil Rights and Anti-War movements were incorporating environmental justice into their rhetoric, linking political participation with economic and social factors, including access to food. Yet despite this, both social and environmental justice were never fully integrated. This allowed for full support of emergency food programs rather than linking the needs of poor and minority communities into one united movement (Ashman, et al., 1993).

By the 1970s, discussions around food policy began to take a dramatic turn. Food insecurity, once seen as a problem in predominantly rural areas in the U.S., now characterized urban cities, where myths of food-stamp fraud and deception proliferated. Years later, administrative policies that followed were championed in the spirit of cutback after cutback in an attempt to rescue the dwindling budget of the early 1980s. During this economic restructuring, federal spending for food stamp and nutrition programs decreased by \$12 billion, while the number of hungry increased as the emerging working poor became a large part of the population that experienced food insecurity (Ashman, et al., 1993).

The 1980s revisited the 1930s' levels of dependence on emergency food assistance in the form of an increase in food pantries, food banks, soup kitchens, etc. As soup lines grew, so did USDA concern over surplus commodities, such as cheese and dry milk in the dairy industry. This was the result of corporate control in agricultural production and a

prolonged recession. As a result of these mounting concerns, the Reagan administration hesitantly initiated a measure for the release of government surplus cheese, in the form of 30 million pounds, for emergency food distribution in December 1981. Two years later, the Temporary Emergency Food Assistance Program (TEFAP) would handle dozens of additional commodities that flowed onto the shelves of food pantries around the nation with profits going directly into the pockets of large-scale farmers (Gottlieb, 2001).

Yet the rise in governmental support of emergency food policies did not lower the trend of food insecurity, as the need for emergency food in the late 1990s surpassed the highest levels of need in the 1980s. Why are we faced again with this dilemma of excess food and excessive hunger? Food systems advocate Robert Gottlieb suggests that we focus beyond individual household food needs and expand policy to include community (Gottlieb, 2001).

School Feeding Programs

History of the NSLP

Government-sponsored school feeding programs in the United States emerged, by and large during the Great Depression, around the same time small farmers were forced from the market by larger producers. High-yielding technologies such as chemical inputs and mechanized labor allowed larger growers to produce consistent, large quantities of crops. The investment in expensive farm machinery and other inputs was not a viable option for many smaller producers who lacked capital and large tracts of land to compete with larger producers, such as agricultural corporations. This changing face of agriculture caused many farm families to abandon food production all together. As millions wandered

the streets searching for employment to help feed their children, farmers across the nation who survived the rise of agribusiness also urgently sought answers to the surplus of goods they could not sell on an already overburdened market. The federal government saw an opportunity to solve both problems simultaneously through the purchase of excess farm commodities. This was designed to abate the escalating crisis of childhood hunger and malnutrition. The Work Projects Administration (WPA) was also created at this time to assist in the coordination of the program and provide jobs for the unemployed (Plemmons, 2004).

During this first attempt at national school food programs, collaboration between the federal government, the WPA and state administrations aided in the school lunch program's expansion. By 1942 the program had reached every state and six million children (Roberts, 2002). Despite this, nutrition took a backseat in priority for governments whose agenda revolved around policies of job creation and strengthening agricultural markets.

The onset of WWII slowed the success of the school food program, taking both surplus commodities and laborers with it and returning the dilemma of hunger and malnutrition to the bellies of the masses. By 1944 only five million children received support from lunch programs, highlighting government precedence in wartime activity (Roberts, 2002).

In 1946 the school lunch program was resurrected as a new priority to protect the security and prosperity of the nation's future, its children. The program, the National School Lunch Act, which created the National School Lunch Program (NSLP), was signed into law as a national security policy. NSLP sought to address both the health and well-being of

children, as well as the consumption of nutritious and domestic agricultural commodities. Despite strict regulations on NSLP, states have flexibility in some aspects of the program, although the federal government ultimately maintains the strongest influence (Plemmons, 2004).

Congressional policies continue to focus attention on factors that contribute to poor nutrition including economics, lack of knowledge, and lack of access to healthy lunches at school. With nutrition as the centerpiece, introductory policies left out those children most in need, particularly in school districts that could offer little to help their students. As a response, the Child Nutrition Act of 1966 was enacted that established additional food programs such as a breakfast program. This program supported schools in poor economic areas where students might travel long distances to school. This act acknowledged the responsibility of government to improve the nutritional lives of poor children. Similar to the National School Lunch Act, schools that request funding under the Child Nutrition Act must submit a demonstration of their need to the Secretary of Agriculture (St. Pierre & Puma, 1992).

Despite these policy victories, evidence in the late 1960s pointed to continued hunger and malnutrition in many cities and schools around the country. In 1968, a physician's report found that only one-third of children in need and attending schools participated in the school lunch program. With this knowledge, Congress sought increases in legislation that regulated federal requirements to determine which families should receive priority in food programs, while funding was added to meet more of the demand. President Nixon also responded by establishing the Food and Nutrition Service (FNS), which would

serve as part of the USDA's operations in the federal food programs, including the administration of the NSLP (Roberts, 2002).

Now more than ever, priorities in food policies would attempt to revolve around the needs of children, which allowed agricultural interests to take a backseat, and shifted previous goals of the federal government from market support to nutrition. For example, this was evident in food and nutrition policies of the 1970s that recognized the importance of incorporating nutrition education along with government assistance into school food programs. However, regulatory mandates placed on schools by federal policies as a “quality control” mechanism would be criticized later for being extremely invasive and inappropriate to participating families (St. Pierre & Puma, 1992).

Throughout the 1980s and 1990s, school food programs experienced many shifts in financial support and priority by the federal government, with the Reagan administration bringing the majority of reductions. Today, federal dollars reimburse schools that provide meals for enrolled children, currently defined as 130 percent of the poverty level in the United States for free meals and 185 percent of the poverty level for reduced-priced meals, calculating both household size and income. To qualify, parents must submit an application to their child’s school. Since the early 1980s, parents are required to verify self-reported information on an annual basis. This shifted the emphasis of the federal government from feeding to combing-out abuse, and thereby properly “awarding” those who passed the test. For example, between 1979-1980, the USDA’s Office of the Inspector General (OIG) calculated that mismanagement of the NSLP and other feeding programs in schools would cost the federal government \$188 million in fraudulent instances. Today, the continued

federal findings of fabrication among applicants have led to the perceived need for increased regulations (St. Pierre & Puma, 1992).

Some USDA food programs, like food stamps, saw a decrease in support in the 1990s, while school lunch programs remained successful. Between 1990 and 2000, participation in NSLP grew from 48 percent to 57 percent of qualified students, while 707 million breakfasts served in 1990 increased to over 1.3 billion in 2000 (Food and Nutrition Service, USDA, 2004). Also important to note at this time is the emergence in federal nutrition policy that focused on the significance of diet choices related to health, although this connection would not reach school food programs until the mid-1990s (Roberts, 2002).

Health risks in school feeding programs

While guidelines for diet and health were introduced to school food programs in the 1990s, the government was still distributing surplus food commodities to low income children. As nutritionist and author Nestle puts it, “As long as dietary advice was to eat more, the advice caused no conflict” (n.d.). With malnutrition in mind, schools have overcompensated with over consumption and problematic portion sizes. According to a study conducted by the USDA in 1992, although students received proper nutrition from vitamins and minerals, their diets exceeded dietary recommendations for sodium and saturated fats. With more than 95 percent of students eating one or two meals a day at school, that makes up a considerable portion of their total dietary intake (Azuma & Fischer, 2001). Even more daunting are the growing rates of obesity in school-aged children that can lead to serious medical conditions such as hypertension, cancer, heart disease and Type 2 diabetes, which in recent years, has tripled among children (Azuma & Fischer, 2001).

Since school food programs have a major influence over children's eating patterns, many people argue schools should be doing a better job at guiding their students toward healthier habits. Yet this becomes difficult when schools depend largely on government support, such as food commodities from the USDA. The meat and dairy industry are the largest contributors to the NSLP, selling a total of \$350 million surplus beef and cheese to the USDA in 2001, double the amount spent on all fruits and vegetables, most of which were frozen or canned. As school budgets get tighter and tighter these numbers are important considering schools obtain almost 20 percent of their food from the commodities program (Azuma & Fischer, 2001). A prime example of industry involvement comes from the 1998-1999 government purchase of more than \$20 million of surplus beef in order to boost prices for the livestock industry, causing a major increase in beef used in NSLP (Gottlieb, 2001).

School food policies

Expanding on Nestle's earlier comment about "eating more," the federal government is faced with the dilemma of supporting both agricultural interests and the health of children. As she argues, this puts government in a difficult position of telling people to eat less of the foods that are directly related to health risks such as cancer, but at the same time, supporting the very industries that cause a majority of the problems! Not wanting to jeopardize their commitment to such industries as beef and dairy, or more importantly, admit that the actual problems of surplus commodities are a product of overproduction, the federal government sweeps issues under the table and in turn, and appears a hero to children in schools around the nation (Nestle, 2004).

Regulation in areas of school food policy has been framed in a highly contentious and politicized environment. For example, when the Undersecretary of Agriculture for the Clinton administration, Helen Haas, began to raise concerns about high fat/low nutrient school lunches in 1994, the floodgates broke open. Since Haas had a background in nutrition advocacy, many industry leaders, including food producers and foodservice workers, saw her as a threat to their influence within public schools, as they stood to lose financially by making changes to the NSLP (Hobbs, Ricketts, Dodds, & Milio, 2004).

Initially, media efforts supported Haas' suggestion to include a Nutrient Based Meal Plan (NBMP) into the NSLP. When changes in the House and Senate gave way to more conservative politics in 1994, reform measures were seen in a less than favorable light and lobbied heavily by interest groups. Republicans criticized her for mixing advocacy with politics and for siding with her friends in Public Voice for Food and Health Policy, a public advocacy group in which she had previously served as executive director. Within an intense environment of committed lobbyists and a determined House and Senate, the policy development process of Haas' visions were substantially changed, which reduced NSLP's prospect to meet the Dietary Guidelines for Americans (DGA). As one group of researchers who studied school meals regulations found, "the case also supports a market-oriented view of interest group theory illustrating that political power--access and political influence--is available for purchase in the United States" (Hobbs, et al., 2004, pp. 96-97).

Yet 1994 was also a time for victory. During this time the USDA launched the School Meals Initiative for Healthy Children (SMI) that required school meals to be consistent with the Dietary Guidelines for Americans. This represented a major

accomplishment in school food policy which focused on the importance of providing food to children, but also challenged that food be nutritious (Roberts, 2002).

Barriers to Providing Quality Lunch

As Nestle suggested, many problems arise from the overproduction of food, including an influx of low-quality, surplus commodities that overburden markets. Another effect of overproduction is an exceedingly competitive food supply that causes food producers, processors, marketers and distributors to create new niches in markets, often compromising nutrition. For example, what's the best way to sell overstocks of grains or beef? Processors can easily turn these items into pre-packaged sugar-snacks, or even focus on frozen meals of roast beef and ribs to manage their overflows. Since food is annually a \$1.3 trillion business, in the U.S. much of the profits go to value-added products like these (Nestle, 2004).

The NSLP is not the only force affecting schools today. Many institutions are inviting large corporations to help feed their children and in turn, bring revenue into schools. More than ever, school cafeterias are forced to cut costs and reduce labor amidst out-of-date kitchens, low reimbursement rates for meals, as well as pressure to bring revenue into schools to cover operating costs. Many times, invitations are directed at the very corporations targeting children and adolescents through television commercials and clever marketing techniques, often contracting with outside sources such as fast food companies Taco Bell, KFC and Pizza Hut. With strapped budgets, schools invite the competition in, justifying it as a necessary evil. The partnerships prove to be lucrative. Children between

the ages of seven and twelve spend billions on junk food each year, not to mention adolescents who spend even more on caffeine and sugar-enriched beverages, candy and fast food (Nestle, 2004).

The number of schools that offer these services, as well as other competitive foods such as beverage and snack vending machines, is on the rise with more than forty-three percent of elementary schools, seventy-four percent of middle schools, and ninety-two percent of senior high schools participating (Roberts, 2002). With the incorporation of competitive foods in school hallways and cafeterias, school administrators seek to gain much needed revenue to combat budget shortfalls and help finance everything from teacher trainings, to art supplies, musical instruments, and upgraded technologies. This is particularly evident in “pouring rights” contracts, in which schools contract exclusive rights with soft drink companies in exchange for revenue and a percentage of sales. As one Ohio administrator put it:

We have worried about whether we’re forcing students to pay for their education through the purchase of soft drinks. In the end, though, we have decided that is not the case, because each student has the option to buy or not to buy. Americans drink 13.15 billion gallons of carbonated drinks every year-which means somebody is making a lot of money. Why shouldn’t schools get their share? And for once, even taxpayers get a break (quoted in Roberts, 2002, p. 606).

Incorporating cost-effective cuts in school menus, as well as planning school menus around corporate food sponsors, helps legitimize the acceptance of fast food culture and the notion “that’s what kids want anyway.” This may alter the school environment and jeopardize the health of children along the way. With no regulatory nutrition standards on competitive foods, the USDA has publicly responded to heated debates surrounding their proliferation by lobbying for complete control over school meals, although unsuccessfully.

For example in 2001, the USDA asked Congress to help build a national nutrition policy to directly respond to competitive food policies that the USDA felt were inhibited by current legislation. These attempts, as well as others involved with school food policies, would sit for months at a time in committee and receive resistance from many sides (Gottlieb, 2001).

In addition to funding and competition, schools point to other barriers that affect the quality of school lunches, including negative influences from family households, low parental support insuring children's daily nutrition, lack of communication between health teachers, administrators, and food service workers, lack of leadership in nutrition education, and low support from food service staff (Cho & Nadow, 2004). All in all, these barriers highlight the need for coordination between, not only members of the school system, but also the need for participation from parents and other community members in order to incorporate a larger framework for change, and to embrace a more collaborative approach for creating healthy school food programs.

Barriers Within Local Buying

Although school menus are planned in a rather simple way, month by month and even year by year, food service workers rely primarily on ingredients that are available throughout the entire school year. This usually translates into buying from a limited number of distributors who can provide for most needs in a very timely, consistent and uniform manner. Depending on a school's location and climate, farming seasons can be extremely limited and unpredictable, making it difficult for food service directors to justify "eating in season" when there are 2,000 mouths to feed on a daily basis (Strohbehn, 2000). In addition, farmers may find it difficult to predict in advance what foods will be available to

allow schools enough time to plan. To address this, Iowa State University's University Extension suggests farmers coordinate with food service directors at the beginning of each school year to target areas of flexibility in the cafeteria's menu that can be planned around harvest timing. By doing this, farmers can take advantage of their most productive months for school use and schools can return to traditional vendors when certain foods are not available locally (Strohbehn, 2000).

A tremendous barrier for local food use in schools is cost. As was shown earlier, much of the system of agriculture engaged in the United States today is based on the commodification of foods. Not only are school cafeterias expected to increase revenue by bringing in outside vendors like Taco Bell and Pizza Hut, they currently suffer from enormous cutbacks that require subsidized government support (Strohbehn, 2000). In addition, staff cutbacks have forced some school districts to drastically limit work hours, which encourages food service directors to use pre-packed frozen foods and microwaves. Since local foods often cost more because of their price-inclusion of fair wages for labor and production, schools are hesitant to invest in foods that may require more labor and processing in the cafeteria.

A third area of concern for food service directors is having sufficient quantities to support the needs of their schools. Public institutions like schools can be a difficult market for small farmers to enter into because seasonal production levels are not always consistent and are difficult to predict. Another challenge for farmers is the availability of certain produce to meet the needs of school menus. In order to succeed, farmers and food service workers must coordinate their schedules around each other, possibly changing menu plans

for when produce can meet volume needs. As Iowa State University's University Extension suggests, small innovations like salad bars may be a good starting point for schools as they often require less amounts of particular food items (Strohbehn, 2000).

Another area of concern for public institutions like schools is responsible processing, packaging and labeling of foods. Regulations set by both national and state governments require school districts to maintain high levels of food safety and serve to protect young children's susceptible immune systems. Although there are few regulations regarding selling fresh produce, small farmers who market to schools should strive to follow high levels of precaution. This may include the use of potable water in cooling tanks, access to sinks and lavatories in the work environment, or the use of durable materials and containers that are approved as food contact surfaces for packaging. Proper labeling of product, weight and/or quantity will help food service workers to keep track of inventory and assist them in future ordering (Tropp & Olowolayemo, 2000).

Environment

With the patterns of globalized food systems around the world comes the collapse of local environments including agricultural lands, forests, grasslands, wetlands, and waterways, which often leads to the erosion of societies that depend on these complex systems for food, fodder, and survival. The very nature of large-scale economic development increases human impact on environmental resources that favor growth over moderation, qualifying degradation as a necessary function of progression (Goldsmith, 1996; Shiva, 1988).

More specifically, the inputs needed to fuel a more globalized system of agriculture require intensified efforts of production such as increased fertilizers and pesticides, as well as

specialized technologies and practices such as soil-depleting crop rotations, and enhanced irrigation systems. Thousands of cases around the globe point to the negative effect these practices inflict on ecosystems from the release of high levels of chemical toxins from runoff, including a decline in soil fertility, the creation of pesticide-tolerant insects, contamination of habitats, as well as the pollution of surface and groundwater (McKenney, 2002). Present agricultural practices increase the rates of erosion, exceeding soil formation rates by at least ten times. Because of this, nearly six million hectares are lost to erosion each year. As more and more lands around the world are brought into production, rates of erosion increase (Goodland, 1996). What generally affects landscapes will inevitably take a toll on human populations, as they too are a part of ecosystems and often suffer greatly from changes to their environments, including increased rates of cancer, infertility and birth defects, and dozens of other diseases that result from fertilizer and pesticide contamination (Kroese, 2002).

Community & Bioregionalism

According to activist and author David Morris (1996), “authority, responsibility, capacity--these are the cornerstones of sustainable communities” (p. 437). Communities that are autonomous and small enough to manage local ownership and operations may find greater successes in employment, business, and education than communities that depend solely on outside support, allowing them to be more stable and efficient. Places rooted in local directives can often be transformed from exclusively business centers to supportive networks of concerned citizens (Dodge, 1981; Morris, 1996).

Much of the world today is owned by fewer and more powerful individuals whose intentions may not embrace the priorities of America's rural communities, which includes community self-sufficiency. One concept that tries to address this is bioregionalism, a movement based on geography, culture and environment. From its inception, bioregionalism has defined the natural and cultural features of different landscapes--from soil to seasons, and human histories to languages, bioregionalism attempts to understand a place and all its components (Dodge, 1981). By knowing one's surroundings, proponents of bioregionalism argue that a person will be more likely to fully understand a region's health and needs, as well as be able to make more informed decisions about its future. For example, citizens of a rural community that are knowledgeable about their local ecosystems may be better equipped to make decisions about the development of a forest in their area than a state engineer who only knows the region through maps and surveys.

With this understanding of the local comes the prospect of self-reliance in communities, shifting potential from the global to the local (Sale, 1996). By relying on local food sources for resources, for example, a community can support their local economy rather than an outside source. In his essay, Principles of Bioregionalism, Kirkpatrick Sale sees sustainable communities as inherently attached to their environments. He says (1996):

A bioregional economy would seek first to maintain rather than use up the natural world, to adapt to the environment rather than exploit it or manipulate it, and to conserve not only the resources but also the relationships and systems of the natural world. Second, it would seek to establish a stable means of production and exchange rather than one always in flux and dependent upon continual growth and constant consumption (p. 480).

Food Insecurity

The Community Food Security Coalition (CFSC) defines food security as the ability to have access to affordable, nutritious, and culturally appropriate food at all times (Azuma & Fischer, 2001). According to the USDA, since 1999 food insecurity in the United States has increased by 3.9 million individuals, including more than one million children (Nestle, 2002). The California Health Interview Survey indicated that Humboldt and Del Norte Counties have the highest rates of hunger in the state. Approximately 50 percent of children in Humboldt County live within 185 percent of the federal poverty level, making it extremely difficult for families to provide three square meals a day (Holtby, et al., 2004). In Humboldt County, according to the 2000 census data, the poverty rate for families with children under five years of age was 28 percent and 21 percent for families with children under age 18 (Census of Population and Housing, 2000).

The correlation between food insecurity and obesity and other diet-related illness is well documented. Anxiety over insufficient food sources can cause negative responses such as overeating or overfeeding, often substituting hunger with cheaper, easily accessible foods high in sugar, sodium and saturated fats. As the Northcoast Nutrition & Fitness Collaborative (2004) policy brief found, Humboldt County is not exempt from these problems. According to the brief, 14 percent of low-income children ages 0-4 were classified as overweight in 2001. In 2002-2003, 51 percent of 9th graders were physically unfit and over one third of children in grades 5, 7 and 9 were overweight.

The Solutions

The previous literature section served as a lens to observe issues surrounding the globalization of food, the economics of an international food system, environmental concerns of a global food economy, as well as national and state politics of food. Review of literature at this level provides a background for application at the local level.

Community Food Security

In the United States, community food security was integrated into the rise of a national food movement that had its roots in the 1960s and 1970s, in response to national changes in agriculture. As small-scale, regional agricultural in the United States declined in the 1980s and 1990s, the movement directed its attention to the community level. Community food security indicators include city and state income levels, food prices, transportation, nutritional and dietary issues, cultural appropriateness of food, as well as issues of food safety, food sources, and patterns of ownership, production and processing methods. Solutions such as sustainable food systems and community approaches to food access contributed to the development of a new form of community food security politics (Ashman, et al., 1993). Instead of merely addressing concerns about environment or solely concerns over justice, community food security can be seen as an intersection of the three--bridging social, economic and environmental justice into a common agenda.

Earlier coalitions for the Farm Bill developed in the 1980s and early 1990s between environmental groups, rural development advocates and emergency food system groups. They experienced a rise in political tension and no hope for union. Rural advocates focused

greatly on economic pressures on small farmers and their pressures to produce, which directly thwarted environmentalists' concerns surrounding crop rotation, soil conservation and other land use practices. At the same time, food system advocates continued to support food assistance and food programs without much conversation about growing practices or land-use trends. In the end, each of these groups had created their own agendas that addressed only their greatest interest, avoiding what they saw as competing interests. Without cohesion, only small steps in food-system changes could occur (Gottlieb, 2001).

In spite of this, one victory of the Farm Bill was the funding of a Community Food Projects program which ultimately led to the establishment of the Community Food Security Coalition (CFSC), which helped to create new programs, policies and organizations to deal with issues of food insecurity. With its inception, CFSC served as a forum for community food agencies and groups across the U.S. to join together in open communication. Even the USDA responded to CFSC's popularity in 1999 by establishing its own Community Food Security Initiative, borrowing directly from policy recommendations from CFSC, and adding to the emergence of the community food security movement as a new kind of political force (Gottlieb, 2001).

Food Policy Councils

In addition to the surge in support for CFS issues, community food systems projects saw a need for involvement in policymaking through the creation of local food policy councils. Food policy councils are also another development many communities are using in an attempt to address integrated approaches to regional food system issues. Early councils

have their roots in the 1970s, although most were established in the 1980s, and seek to respond to mostly urban food issues (Azuma & Fischer, 2001). More recently, councils include rural problems into their rhetoric, commonly concerned with sustaining local food systems and the strains on small farmers. Based on the central pillar of CFS, that all people should have access to affordable and nutritious meals, councils attempt to develop innovative strategies for changes in food and nutrition guidelines through public intervention and action. By bringing together all stakeholders at various levels to share concerns and information, food policy councils have the ability to raise awareness and foster the understanding necessary to bring about alternative solutions to some of the largest community food problems (Azuma & Fischer, 2001). Although varied in structure and function, and including such diverse groups as anti-hunger advocates and parent groups in local schools, these councils have found consistent missions, which authors Ashman, et al. (1993) propose:

- Guaranteeing every citizen's right to affordable and nutritious food.
 - Exploring the economic development potential of the food industry.
 - Educating consumers on the nutritional and environmental implications of their food choices.
 - Minimizing the negative environmental consequences of agriculture and food production, transportation and disposal.
 - Increasing urban agriculture to enhance the urban environment and to provide additional sources of food and/or employment.
 - Reducing the reliance on the emergency food system.
 - Strengthening the links between urban and rural areas.
 - Preserving farmland and promoting sustainable agricultural practices
- (p. 275)

Run by volunteer directors and members, food policy councils can serve a multitude of functions, from advising government agencies and advocating specific policies, to acting

as an educational resource for the community. For example, the Knoxville Food Policy Council of Tennessee has played a major role in educating the local community about issues of health and nutrition, and at the same time, remained active in food access issues related to transportation (Azuma & Fischer, 2001). In order to maintain representation from all stakeholders, councils seek to incorporate diverse interests including sectors of agriculture and health, as well as members from the business community. Following the popularity in city-wide efforts, schools began seeing the opportunity to enter into this new policy venture, hoping to address the major barriers to quality school foods, and for a plethora of other diverse reasons, variably felt from school to school (Azuma & Fischer, 2001).

One of the most recognized and successful examples of school food policies was established in 1999 by the Berkeley Unified School District, unanimously supported by the school board. Most noteworthy of the policy's goals was that the food in schools would be "to the maximum extent possible organic and from local farms" (Brown, 2002). According to Janet Brown, program officer for food systems at the Center for Ecoliteracy in Berkeley, CA and a member of the council, the most uplifting part of the policy was that the community was helping reinvent the school's food services based on quality and not on cost, a balance of both economics and justice. Brown says, "We came to realize that decisions about food in schools don't happen at the level of a single school, rather, they are district-wide decisions. In order to effect change, we needed to work with the district as a whole" (Brown, 2002, ¶ 5).

Berkeley was not the first to champion school food policies in northern California, as its neighbor, the San Francisco Unified School District, was one of the earliest in the state to

pass measures to ban snack food contracts and certain beverages from school lunches. As well, the Oakland School District has since adopted a policy that includes an all-out ban of candy and sugary beverages in school vending machines, a first step toward the implementation of more nutritional policies (Roberts, 2002).

One of the largest districts in California, the Los Angeles Unified School District, has not only banned the sale of sodas in all 677 schools in the district, but also petitioned the CFSC in 2001 to assist in rescuing their conventional salad bars, that were mostly being ignored by the student body. In response, funds from the CFSC and support from the school food policy council helped transition their failing attempts into successful farmer's market salad bars, made from fresh and locally produced greens and vegetables (Roberts, 2002). This "Farm-to-School" model was not a new strategy to school food policy, as it has recently been a successful part of many schools across the country who hope to encourage healthy choices and promote local agriculture in their communities.

Direct Marketing

The convergence of social, environmental and economic issues around food has increased public awareness and helped mobilize efforts to efficiently link communities and farms more closely. By removing barriers to access, both farmers and community members have the opportunity to stabilize part of their local economy as well as increase public participation in decision making. The use of direct marketing is one strategy small farmers have turned to, reconnecting humans as an integral part of the food system by incorporating face-to-face interactions within the exchange (Hinrichs, 2000).

Small-scale farmers have found a function in direct marketing to consumers through farmers' markets, food cooperatives and community supported agriculture (CSAs). Within such large institutional structures like public schools, there are many barriers to entry for small farmers who wish to integrate. With open communication, organization and public participation, strides away from packaged foods toward localized food systems become more attainable everyday in many schools and farms across the U.S. Success can be seen in something as simple as a fresh salad bar and as complex as entire menus dedicated to local and seasonal foods (Azuma & Fischer, 2001).

In addition, direct marketing shortens the distance food travels from farm to plate. Instead of investing in fertilizers to expand the lives of food and focusing on packaging for long, overseas travel, farmers involved with direct marketing can take advantage of quality over quantity. By reinvesting in the land instead of output technologies, farmers are able to provide higher quality foods that appeal to consumers who are concerned about the safety of the foods they eat (Hinrichs, 2000).

For farmers, success may mean finding new partners in their community who believe in the importance of their work. All in all, reconfiguring patterns of a globalized food system takes more than just the efforts of producers, it also takes the commitment and understanding of consumers to reinvest their commitment to their local communities. This may mean education about the connections people have with the local landscapes and food around them. To establish this relationship is important not only for farmers, but for community members who will make the decisions about where their food comes from. Direct marketing allows a farmer not only to invest in land, but in the local people whom

he/she supports on a daily basis (Imhoff, 1996). By bridging these relationships, local economic power can be placed back into the hands of both the producer and the consumer.

It may be possible that direct marketing through local farmers is more affordable than comparable items purchased from national chains or grocery stores (Center for Ecoliteracy, 2004). A reciprocal relationship between food service workers, parents, food advocates and farmers may help educate the local community about the importance of local food systems. Additionally, agricultural literacy in the classroom may support awareness in students that nurture an interest in learning about their own school policies.

Localization/Food Shed

Many economists and environmentalists question the very meaning of human progress and wonder what a step in the opposite direction of globalization would look like. Corroboration can be found within theories of economic localization, or smaller markets that demand the commitment of local communities to work together for change and thrive from and for many players, instead of just a powerful few (Korten, 1996).

With shifting patterns in agriculture, small farmers still play a vital role in rural community economies. By comparing cross-national data between large and small farms in different countries, the Institute for Food and Development Policy (Food First) found that small, integrated farming systems that produce diverse crops are comparatively more productive and out-produce larger, monoculture operations despite large variations in farm sizes from country to country (Rosset, 1999). Even the USDA has agreed with this notion, when in 1998 its National Commission on Small Farms issued *A Time to Act*, a report concerning the importance of small-scale agricultural systems for economic and social health

of rural communities. The report contains 146 specific recommendations to respond to the needs of small farms and looks to examine future goals and opportunities for smaller producers. More specifically, *A Time to Act* strongly embraces the need for strengthening small farmers in rural communities through agricultural techniques and practices (Gottlieb, 2001).

An advantage of direct marketing through farmers' markets and cooperatives is the localization of the food system, which promotes the ideals of place and season. "Localization" of agriculture has been a part of the expanding definition of sustainable development work because it bridges relationships between culture, nature and science. Movements to protect small farms have rallied to limit development of these agricultural areas, as well as the surrounding ecosystems that are supported by open space. Not only do ideas of sustainable agriculture uphold local ecosystems, they also play an important part of local economic growth (Starr, et al., 2003).

While movements have incorporated issues of "local" food systems into their rhetoric, including concerns over environmental and agricultural sustainability, economic health, food quality and safety, they have also sought to address social concerns, such as poverty, obesity, quality of community life, public participation, and labor related policies. From community food security organizations to slow food activists, proponents of localized food systems have fought to improve knowledge about the production of food, increased access to culturally appropriate and nutritious foods, as well as the support and improvement of local economies (Gottlieb, 2001). The concept of "foodshed," interpreted by permaculturist Arthur Getz in 1991 as a food system's carrying capacity, has been used as a

model for consumer and community awareness of place. Within the definition, Getz asks the question, “Where is our food coming from and how is it getting to us?” (Kloppenborg, Hendrickson, & Stevenson, 1996).

Moving from globalized patterns of agriculture back to systems rooted in local communities may seem like a daunting task as much of food production today is managed at the corporate level. Yet Helena Norberg-Hodge (1996a) in her essay, “Shifting Direction,” writes that relocalization efforts do not have to involve total self-reliance of communities, but can evolve from the elimination of unnecessary transport of food around the global market and a refocus on the diversification of local and national economies. Although this will look different from place to place, an essential ingredient is the recognition of local systems of knowledge that include both cultural and biological diversity.

In his essay, “Conserving Communities,” Wendell Berry, agrees that a decentralized system of local economies could begin with food. He writes (1996):

Local food economies would improve the quality of the food. They would increase consumer influence over production and allow consumers to become participatory members in their own food economy. They would help to ensure a sustainable, dependable supply of food. By reducing some of the costs associated with long supply lines and large corporate suppliers (packaging, transportation, advertising, and so on), local food economies would reduce the cost of food at the same time that they would increase income to growers. They would tend to improve farming practices and increase employment in agriculture...the orientation of agriculture to local needs, local possibilities, and local limits is simply indispensable to the health of both land and people and undoubtedly to the health of democratic liberties as well (p. 416).

Farm-to-School: Intersection of Economics, Food Security, Localized-food Production,
Education and Nutrition

Farm-to-School

One program that has recently attempted to “shorten food links” by opening more direct markets to small farmers is the national Farm-to-School (FTS) program, launched by the USDA to connect school lunch programs, including the federal government’s NSLP, to local farms. As part of the USDA’s Small Farms/School Meals Initiative, FTS assists schools in the purchase of fresh, local farm produce for lunch programs. However, the program’s goals tend to vary dramatically from school to school and state to state (Bellows, 2003).

School lunch programs have the potential for attaining much more than what they currently manage. Food can find its way out of the cafeteria and into the classroom, providing an educational opportunity for students, teachers and parents. For example, some schools promote agricultural literacy through in-class presentations from local farmers, educating students about their local food system. In addition, some programs bring students to the farms where their schools’ produce is grown, encouraging hands-on activities that help students make connections between their own lives and local agriculture. Ambitious teachers and parents have also incorporated school gardens and composting systems into classroom curriculum as a tool to supplement science education. Several schools have succeeded in producing food for their cafeterias (Ashman, et al., 1993).

This link between schools and farms is an important part of building social capital within communities, as well as possibly transforming the school food environment as a

whole. In addition to the educational components, Farm-to-School can serve as a tool to promote local economic growth by opening up schools as a viable market that pays competitive, wholesale prices. School food service today represents a \$16 billion market (Azuma & Fischer, 2001). Not only do schools have a reliable, local business that supports their students, farmers have a new, consistent outlet that cuts storage and transportation costs, as well as helps add profit to the local economy.

Review of the literature in this chapter has highlighted a brief portrait of the modern food system, in which various gaps exist between producer and the consumer. Shifting technologies in agriculture and a loss of traditional methods of farming, expanding global economies, as well as the complex nature of food politics, inhibit the growth and development of localized food systems. More apparent implications are food-related illnesses such as diabetes and obesity that develop from this “distancing” of human relationships with food. As a response to these deficiencies along with issues of environmental health, community, and food insecurity, Farm-to-School and other direct marketing programs were explored in this literature review as methods for change. Although these programs are still small and vary in effectiveness from place to place, some communities are finding success from localized food programs, including farmers’ markets, farm fresh salad bars and school nutrition programs.

In order to interpret the aforementioned literature review into a more local context, the next chapter explores the various methods this author chose to identify community and food-related problems and solutions in Humboldt County. Because of the large scope of this project, methods for future review and research are also highlighted.

IV. METHODS

This project used three methods of inquiry. The first method was participant observation of Farm-to-School (FTS) activities, which served to witness and document program obstacles and successes. Program development was executed as a second method of inquiry in order to increase FTS activities and enhance existing educational projects. A proposed program evaluation served as the third method, in which to assess existing FTS activities.

Through September 2004-June 2005, my internship with the Humboldt County FTS program allowed me to participate in and observe five essential FTS initiatives which included agricultural literacy, school gardening, grower/school enterprises, community building, and a pilot salad bar program.

Participant Observation

As noted earlier, five FTS programs were observed in Humboldt County. For programs such as agricultural literacy and school gardening, my internship linked me directly with participants in the field. Before this internship, I had no assumptions about FTS or any of its activities. As a student-researcher, I maintained a level of objectivity in order to observe and record what transpired in FTS programs. H. Gans (1968) writes, "Once the field worker has gained entry, people tend to forget he is there, and let down their guard, but he does not; however much he seems to participate, he is really there to observe and even to watch what happens when people let down their guard" (Gans, 1968, p. 314). In addition to observation, extensive descriptive field notes were taken and used as a reference to identify

program barriers and successes. Data were also gathered from document review of FTS' archives, as well as from newspaper articles that highlighted the history of FTS in the county and the various stages of its program development.

As defined by authors Singleton and Straits (1999) in their book, *Approaches to Social Research*, my participation with FTS constituted complete membership by “becoming fully immersed in the setting and attaining full-member status” (p. 328). As the authors note, complete membership can be a difficult place to stand as a researcher as it often can cause conflict between the participant and research roles. Yet as a full-member, opportunities grew to secure insights into the program that, as an outsider, I would never have had the chance to observe. As an active participant and intern, I was able to gain both trust and respect from other members of FTS that allowed me to further the project into a new stage, program development. Gans also defines the participant observer as a “human being; observations on the personal aspects of fieldwork” (Gans, 1968, p. 136).

Program Development

A key element of this project was the coordination of various FTS programs including, for example, the agricultural literacy project. This program introduced school-aged children to the concepts of agriculture, health and nutrition. Various educational models were used to disseminate this type of information, such as classroom visits, as well as farmers' market and farm fieldtrips. Curriculum was implemented that incorporated existing agricultural literacy projects from various educational fields, as well as from the development of newly created educational lessons. A determining factor in new curriculum development came from FTS' relationship with Humboldt State University's (HSU) Sustainable

Agriculture course, sponsored through the university's Engineering Department and led by a local, volunteer farmer. Students from the class were guided through the process of curriculum development according to CA state standards, which were then incorporated into FTS farm fieldtrips by the students during the spring semester of 2005. Each of the twelve students worked in groups of two which were each responsible for developing four lesson plans based on these standards and models of agricultural literacy, health and nutrition, science, and language arts. After review of the student projects and coordination of the lesson plans, student groups were each responsible for helping FTS host one, two-hour farm fieldtrip for local elementary students.

Preceding farm visits, classroom presentations were developed to introduce 3rd-5th grade students to early concepts of agricultural literacy and nutrition (See Appendix C: Classroom Presentation: Cities and Farms). Each half-hour presentation included a slideshow created specifically for farm visits to the Arcata Education Farm and incorporated songs and information about agriculture, as well as a brief history of farming in Humboldt County. Models of existing FTS presentations from several sources were analyzed and interpreted for Humboldt County's program, and further development of the classroom presentations was coordinated by collecting local information about farming in the county.

Program Evaluation Design

Another component of this project was the design of a program evaluation which was developed for future use in order to identify and better understand what the desired outcomes of FTS' program areas were. The program evaluation was designed for future measurement of programs in agricultural literacy, school gardening, grower/school

enterprises, community building, and a salad bar project. Data were gathered from FTS document review and participant observation, and existing models of program evaluation were studied for design and implementation.

Focus was concentrated on the strategies and proposed outcomes of the program evaluation design. This followed a logic model approach which is often used in measuring program outcomes and is a description of how the program theoretically works to achieve benefits for participants. The model attempted to identify key elements of the planning process, including determining program needs and objectives, identifying target populations and participants, and distinguishing program resources and staff functions (Tripodi, Fellin, & Epstein, 1978). This program logic model was a useful framework for examining outcomes. By following a logic model design, planning stages of the program evaluation helped define sets of outcomes that track the benefits participants experience during and after FTS programs (Hatry, van Houten, Plantz, & Taylor, 1996). Also, distinguishing relationships that followed a chain of influences and benefits such as “If-Then” relationships for longer-term FTS outcomes, helped the project to highlight essential components of the various programs. By using this type of sequence, the inputs, activities, and outputs of FTS programs became visible. Determining these helped develop a realistic picture for future measurement and highlighted what components of the programs were most necessary to track (Hatry, et al., 1996).

For my project, I consulted several sources for program evaluation techniques and theory, and found some of the most enlightening definitions in the book *Fourth Generation Evaluation*, by authors Egon Guba & Yvonna Lincoln (1989). According to Guba and

Lincoln, fourth generation evaluation is an attempt to further previous generational models of evaluation, responding to past tendencies in research towards managerialism, over-commitment to the scientific method and failures to embrace value-pluralism (1989). Although other forms of research each embraced new insights, techniques and inspirations, their limitations can be used as tools for a new direction of evaluation. For instance, a management-style of evaluation can elicit conflict when conducted from a top-down approach, leaving those in the greatest positions, or the top, out of the evaluation itself, critiquing those below them. This technique may also lend power to the influential, as dissemination of information ultimately lies in their hands. In addition to weaknesses in managerial styles of evaluation, Guba and Lincoln find flaws in strict scientific models, as they often rely heavily on form over content, controlling so many factors that the study itself may be deemed useless in any real-life scenario where control is not an option. Also, scientific models often emphasize the superiority of the quantifiable over qualitative analysis, supporting “hard” data’s definable and operational nature, therefore critiquing the value of qualitative findings (1989).

Taking these limitations into account, Guba and Lincoln highlight the importance of fourth generation research as an alternative model that recognizes sociopolitical, collaborative and the teaching/learning processes involved with evaluation. In addition, the authors define it as “a continuous, recursive, and highly divergent process” (p. 254), that is “emergent,” with “unpredictable outcomes,” allowing participants to construct the outcomes and vision of the evaluation as it progresses (pp. 254-256). In essence, fourth generation

methods consider each stakeholders' idea as essential to the evaluation, empowering participants, while holding all parties responsible for the outcomes they seek.

Inclusion of all participants was vital to me in designing a program evaluation that would benefit all stakeholders. Designing a program evaluation for future use allowed me to participate in many aspects of the program, interacting with participants and stakeholders, while maintaining my function as a participant observer. Working with so many different community members in various settings can be a challenge for a researcher who may feel emotionally swayed by any one specific stakeholder. As an observer, it was important that I recorded all my interactions. This allowed me to step back from the issues and see the larger picture, helping me identify themes and areas of contention.

During this project, it was important to me that all successes were noted. For example, theories of direct marketing of local agriculture can emerge as something completely different as soon as one enters a public school cafeteria where food service directors are working with tight budgets in a limited timeframe. For institutions faced with limited resources, regular food purchases of Humboldt County cheese or salad from a local producer are a huge step forward in addressing the issue of direct marketing.

V. AREAS OF PROGRAM EVALUATION AND DESIGN

This chapter will define the purpose and scope of five specific FTS program areas including agricultural education, a salad bar program, grower-school relationship building, FTS community building, and school garden programs. In addition, “*if-then*” statements also known as “influence and benefit” statements, follow each program description to identify individual strategies for implementation.

To illustrate each of the five program areas, a proposed logic model and evaluation is also included. Within each model, “Inputs,” represents existing resources of that program. “Activities” symbolize the type of program that will be implemented, while “Outputs” represent the direct product of that activity. “Initial Outcomes” represent the direct outcome of those resources in use. In addition, “Intermediate Outcomes” and “Longer-Term Outcomes” represent future goals and areas that are recommended for future evaluations. Future evaluation of FTS will need to adopt added techniques to monitor possible changes in eating behaviors or attitudes. The “Outcome Indicators & Measurement Framework” section of this paper provides suggestions on how a future evaluation might incorporate several methods to collect both quantitative and qualitative participant data.

Farm-to-School Program Areas

Agricultural Education

Agricultural education targets elementary school children and provides opportunities for classroom presentations and taste tests of fresh fruits and vegetables, brings local farmers into classrooms, guides farmers’ market fieldtrips, and offers fieldtrips to local farms to aid

in education about local agriculture. Classroom visits consist of a half-hour presentation before student fieldtrips to a farm. Farm fieldtrips last two hours and offer follow-up curriculum for teachers to promote ongoing education.

Influence and Benefit of Agricultural Education Program

The program area of agricultural education boasts many resources including a multitude of concerned community members who support the program, as well as one full-time program manager and one graduate student intern (inputs). Farmer-classroom presentations, farm fieldtrips and farmers' market fieldtrips are several examples of the program (activities).

If agricultural education programs teach about healthy eating and provide insight on the importance of local agriculture (output), *then* students acquire knowledge and gain insight into healthy, nutritious eating (initial outcomes). *If* children know about proper nutrition and the benefits of localized food, *then* they are more likely to make healthy choices (intermediate outcome). *If* they make healthy eating choices, *then* they will be more likely to have fewer diet-related illnesses and practice healthy eating patterns throughout adolescence (longer-term outcomes).

Salad Bar Program

The salad bar program is a pilot program that targets Eureka's South Bay School District's Pine Hill Elementary, a school that showed active interest in the program. FTS-purchased a large, child-appropriate salad bar cart to loan to Pine Hill's Food Service Department. The school implemented it by offering salad bar choices to students daily,

subsidized by FTS and following federal nutrition standards. When available, FTS purchased local foods from growers in the community to include in the lunch program.

Influence and Benefit of Salad Bar Program

The salad bar program has one full-time coordinator to implement the project, as well as the future commitment of the CO-OP to help manage the program (inputs). Currently, FTS has short-term grant funding to help subsidize the cost of the salad bar cart and the pilot site's salad bar produce (activities). Once funding stops in October 2005, support will have to come from the pilot site itself or from another source.

If school food programs include fresh salad bars in their lunch programs (output), *then* students will have expanded eating choices (initial outcome). *If* students expand their eating choices, *then* they will be more likely to try other types of nutritious foods and find them appealing (intermediate outcome). *If* they incorporate better eating into their diets, *then* they are more likely to practice this throughout adolescence, causing less diet-related illnesses and creating informed consumers (longer-term outcomes).

Grower-School Relationship Building

As a way to combat childhood eating problems, fresh food is a way to encourage healthy lifestyles. Yet, schools are underfunded to purchase many types of fresh foods that would help this. In response, local growers have shown an interest in supporting schools and could offer many food items schools currently purchase elsewhere. Many barriers exist in this relationship, some being price, seasonality and quantity. This program has built a relationship with the Northcoast CO-OP to coordinate these types of contracts. FTS has received CO-OP support by having the CO-OP function as the warehouse, price-fixer and

distributor to local schools. This program won't begin until the new CO-OP location in Eureka is built.

Influence and Benefit of Grower/School Enterprises

Resources for the grower/school enterprises program area include one full-time coordinator, an advisory board, as well as the future commitment of the CO-OP for assistance in management (inputs). An additional resource of this program also includes short-term funding for direct purchasing from local farmers' markets (inputs). The goal of this program is to connect and promote farmer-institutional relationships (activity).

If schools are able to purchase fresh, local foods more readily (output), then more local produce will be purchased (initial outcome). If more produce is purchased locally, then growers will be more likely to benefit from a new economic market (intermediate outcome). If growers and schools are in contracts together, then growers will be more likely to increase their economic situation from these new markets (longer-term outcome).

FTS Community Building

Because of Humboldt County's rural location and geographic size, it is often difficult for many key players to hold community discussions about the lack of fresh foods in public schools and FTS activities. FTS has held three annual meetings during its three years of operation in the county and asked many members of the community to voice their opinions/concerns about such issues in public forums. It has brought together food service workers, farmers, parents and teachers who are looking for solutions in today's school system.

Influence and Benefit of Community Building

Resources for the community building program include one full-time coordinator as well as many interested community members (inputs). Public forums are held annually to bring members of the local community together to discuss areas of interest or concern, for example, issues of food insecurity, the school food environment or small market development (activities).

If community members are brought together in a public forum (outputs), *then* their ideas/concerns about the school food environment will be heard (initial outcome). *If* their ideas are heard, *then* they will be more likely to discuss possible solutions (intermediate outcome). *If* solutions are suggested, *then* relationships more likely will be built and avenues for change may be more likely to be explored (longer-term outcomes).

School Garden Program

In partnership with the Humboldt County Office of Education (HCOE), FTS has attempted to fill the void left by budget cuts to county-wide school garden programs. To do this, FTS provides garden education to interested elementary teachers and their classrooms. Curriculum is also shared with teachers for continued garden use and instruction.

Influence and Benefit of School Garden Program

The school garden program has one part-time Americorp volunteer and one part-time graduate student who manage the project (inputs). In addition, a garden committee made up of teachers and interested community members also support the program (inputs). Although limited funding is available through HCOE, the school garden program has unlimited access to education materials supplied through the county office (inputs). With

these resources, coordinators are able to visit schools and lead students in garden-related activities, both in and out of the classroom environment (activities).

If school garden programs are reinstated (output), *then* teachers will use gardens as a classroom (initial outcome). *If* gardens are used, students will be able to take learning outside the classroom, *then* learning new skills through experiential education (intermediate outcomes). *If* students experience alternative types of education, *then* they will be more likely to succeed overall in school (longer-term outcomes).

Program: Agricultural Education

INPUTS	ACTIVITIES	OUTPUTS	INITIAL OUTCOMES	INTERMEDIATE OUTCOMES	FUTURE USE: LONGER-TERM OUTCOMES
Agency has one full-time program manager, one graduate student intern, and is supported by a volunteer advisory committee that represents farmers, food service workers, parents, teachers and other community members. Also, the program has meeting space at the Humboldt Food Bank, educational resources, tools and supplies.	Program coordinates farm fieldtrips, farmer-classroom visits, farmers' market fieldtrips and in-class presentations on local agriculture's role in nutrition and healthy eating. Presentations also introduce students to ecological principles of agriculture and awareness of local environments.	FTS is able to sponsor such programs.	Students attend classroom programs/fieldtrips and participate in farmer/classroom activities.	Students gain insight in healthy eating and local agriculture's relationship to community.	Students are more likely make healthier food choices. Students will be more likely to lower risks of diet-related illnesses due to nutritious eating (creating conscious consumers).

Program: Salad Bar

INPUTS	ACTIVITIES	OUTPUTS	INITIAL OUTCOMES	FUTURE USE: INTERMEDIATE OUTCOMES	LONGER-TERM OUTCOMES
<p>Program has one full-time coordinator and future commitment from CO-OP for price-setting, storage, and distribution. Also has meeting space at Humboldt Food Bank, educational materials and one transportable salad bar cart.</p> <p>Coordinator identifies schools to participate in Salad Bar Program. Program has funds for subsidized fresh foods, on a limited basis.</p>	<p>Program provides salad bar cart and fresh, subsidized produce to one low-income, qualifying school.</p>	<p>School provides fresh salad bar for students and teachers during lunch.</p>	<p>Students will expand eating choices.</p>	<p>Students are more likely to find new foods appealing.</p>	<p>Students are more likely to be willing to incorporate new foods into diet outside of the school environment at home.</p>

Program: Grower/School Enterprise

INPUTS	ACTIVITIES	OUTPUTS	INITIAL OUTCOMES	FUTURE USE: iNTERMEDIATE OUTCOMES	LONGER-TERM OUTCOMES
Program has one full-time coordinator, an advisory board, and commitment from the CO-OP for price-setting, storage and distribution. Also, funds are available for short-term subsidized foods from local farmers.	Program assists in bringing local farmers into public school food service programs.	Schools purchase fresh, local food for school lunch programs.	More local produce will be purchased from farmers.	Growers will benefit from a new economic market.	Growers will be more likely to increase their economic situation from new markets.

Program: Community Building

INPUTS	ACTIVITIES	OUTPUTS	INITIAL OUTCOMES	FUTURE USE:	
				iNTERMEDIATE OUTCOMES	LONGER-TERM OUTCOMES
Program has one full-time coordinator and interested community members.	Coordinator holds community meetings with public to discuss better school, food and farmer relationships.	Community attends meetings and discussions.	Community concerns will be heard collectively.	Solutions for community concerns will be proposed.	Stronger relationships between community members, schools and farmers will more likely be developed.

Program: School Gardens

INPUTS	ACTIVITIES	OUTPUTS	INITIAL OUTCOMES	INTERMEDIATE OUTCOMES	FUTURE USE: LONGER-TERM OUTCOMES
<p>Program has one part-time Americorp volunteer and one part-time graduate student volunteer, as well as a small garden committee. Limited funding is available, as well as educational materials.</p>	<p>Garden coordinators visit schools, leading classrooms in garden-related activities.</p>	<p>Garden programs are reinstated in several schools.</p>	<p>Teachers will participate in garden program.</p>	<p>Students will benefit from garden curriculum as an alternative to classroom-based curriculum. Students will also understand gardening techniques.</p>	<p>Students will be more likely to succeed overall in school with the establishment of alternative types of education.</p>

Outcome Indicators & Measurement Framework

Agricultural Education Program

OUTCOME	INDICATOR	DATA SOURCE	DATA COLLECTION quantitative/Qualitative METHOD
Students attend classroom program, farm fieldtrips or participate in farmer-in-the-classroom activities.	500 students, 20 teachers and 100 parents will experience at least one of three programs in one academic year. At least: <ul style="list-style-type: none"> · 90% attend classroom program · 70% attend farm fieldtrip · 10% attend farmer-in classroom program 	Program records of attendance	Quantitative: Staff observes and records participants in each program.
Students gain knowledge about healthy eating and local agriculture's relationship to community.	500 students, 20 teachers and 100 parents will participate in activities, presentations, discussions and reflections on healthy eating and local agriculture.	Program Records Survey	Quantitative: Staff observes and documents participation. Qualitative: Staff surveys students, teachers and parents regarding their satisfaction with the program.

Agricultural Education Program

Long-Term Measurement

OUTCOME	INDICATOR	DATA SOURCE	DATA COLLECTION Quantitative/qualitative METHOD
Students will be more likely to make healthy food choices.	Students will demonstrate improvement in eating choices (e.g. fresh vegetable consumption will increase).	Participants: Teachers and Students	Quantitative: Staff monitors and tracks student participants during a one, two, and five year cycle through surveys.
Students will be more likely to lower risks of diet-related illness due to nutritious food choices based on education.	Students will demonstrate improvement in health and physical activity due to healthier food choices.	Participants: Teachers and Students	Qualitative: Staff assesses student participants during one, two and five year cycle through surveys and interviews.

Salad Bar Program

	Long-Term Measurement		
outcome	Indicator(s)	data source	data collection
			Quantitative/qualitative methods
Students eating choices are expanded.	One pilot site that supports 150 3 rd -6 th graders and 25 teachers/staff will have the choice of a fresh salad bar daily, with a 50% user rate.	Food Service Records	Quantitative: Track number of users and amount spent on salad bar. Calculate for weekly and monthly statistics.
	7 schools in county will incorporate fresh and local foods in school meals with \$1,300 in sales.	Food Service Records	Quantitative: Track amount spent on local foods. Calculate for weekly and monthly statistics.
Students will continue consumption of fresh vegetables and fruits.	After one month, salad bar pilot site will have a user rate of 30-50%.	Food Service Records	Quantitative: Track number of users/\$ amount spent on local foods after one month.
	After 5 months, 7 county schools will continue purchasing from local growers.	Food Service Records	Quantitative: Track number of users/\$ amount spent on local foods after 5 months.
Students will incorporate new foods into diet.	Students in pilot program, as well as at individual sites, will demonstrate change (improvement) in food choices outside of school.	Students and parents of student participants.	Qualitative: Mail-in surveys sent to students and parents of students at participating schools.

Grower/School Enterprise

outcome	Long-Term Measurement		data collection Quantitative method
	indicator(s)	data source	
Local produce will be purchased	Pilot site salad bar program will incorporate \$2000 for 26 weeks of sales from local growers.	School Food Service Records	Calculate total sales from local growers.
	7 county schools will invest \$1,300 annually with local growers.	School Food Service Records	Calculate total sales from local growers.
Schools will provide healthier food choices for lunch programs.	At both pilot site and individual county schools, fresh and local produce-consumption will increase.	Food Service Staff	On-site survey of food service staff
Local farmers will add schools as a consistent market.	5 farmers will enter into annual contracts with 7 schools in the county.	Food Service Records	Record number of local, contracted farmers.

Community Building Program

outcome	Long-Term Measurement		data collection qualitative method
	indicator(s)	data source	
General public, educators, farmers and parents gather annually to hear/share information on local school food environments.	50 people will participate in small group discussions and focus groups concerning organizing farmer/school relationships and improving school food environments.	Staff and volunteer observations	Qualitative: Staff and volunteers observe meetings and document discussions.
Solutions for change in school food environments will be proposed.	Focus groups will highlight areas for improvement in school/grower relationship.	Participants	Qualitative: Organize focus groups' lists of improvements in school food environments.
Stronger grower/school relationships will be developed.	10 farmers will create new relationships with 5 schools in county.	Survey	Qualitative: Mail-in survey to focus group participants who sought school contracts. Did they connect?

Garden Program

outcome	indicator(s)	Long-Term Measurement data source	data collection Quantitative/qualitative method
Teachers will participate in garden program.	In 34 county schools, at least 25 teachers will have access to a school garden program.	Program Records	Quantitative: Track all teachers who use garden for teaching.
Students will have access to a garden as an alternative learning environment.	From the 25 teachers that use garden program, with approximately 20 students each, at least 500 students will participate in garden education.	Program Records	Quantitative: Track number of students using garden program.
Students will understand gardening techniques.	Students demonstrate improvement in gardening.	Survey	Qualitative: Mail-in survey to students who participated in garden program.
Students will find greater success in school with multiple and alternative avenues for learning.	Students demonstrate improvement in school-based activities.	Survey	Qualitative: Mail-in survey to teachers who participated in garden program.

Forces That May Influence Participant Outcomes

Program: Agricultural Education**influencing factor**

Curriculum from FTS staff is short-term.

Some results cannot be expected for years, such as measuring patterns of eating.

data source

Student/Teacher evaluations

Student follow-ups and surveys

data collection method

Results of Evaluation

Surveys of students at end of each school year.

Program: Salad Bar**influencing factor**

Student habits outside of school are difficult to measure.

data source

Student surveys

data collection method

Survey distributed at end of salad bar pilot, after one month of use.

Program: Community-Building

influencing factor

Will be difficult to measure how a community, as a whole, changes.

data source

Surveys at annual, scheduled workshops

data collection method

Follow-up consultation of participants

Program: School Gardens

influencing factor

Track learned behavior/growth may take place over a long period of time.

data source

Surveys

data collection method

Follow-up surveys with participants

VI. COMPARATIVE PROGRAMS AND IMPLICATIONS FOR HUMBOLDT COUNTY

This chapter will identify the outcomes and various results from FTS programs and partnerships in Humboldt County. This section will also explore other FTS activities in California and will compare their functions with that of Humboldt's. Various local FTS projects are also identified and an explanation of their activities is given. Lastly, questions for the future of FTS' role in the county are introduced and suggestions are made for further exploration.

Background

Although the FTS program has operated for more than two years in Humboldt County, much of the beginning months were focused on determining the needs of the community, both inside and outside the school system, as well as the county's agricultural community. Early FTS conferences allowed stakeholders to discuss everything from direct marketing opportunities for farmers in local schools to agricultural literacy in the classroom. From these conversations, the FTS program coordinator determined two pilot sites to focus efforts, one school in southern Humboldt and another in the Klamath/Trinity area of eastern Humboldt.

Once these pilot sites were identified, FTS offered farmers' market and farm fieldtrips to teachers, as well as classroom visits from farmers. It was hoped that this would spark an interest in agricultural literacy in the classroom. Responses were limited and scattered, possibly due to the county's rural location and long driving distances between

farms. Another possible reason why responses to FTS involvement were limited may be due to the time constraints many teachers are faced with in their individual classrooms.

Education

Agricultural literacy is a key component of many FTS programs across the country. One significant advocate of agricultural education is the California Alliance with Family Farmers (CAFF), an organization based out of Davis, California that promotes local economics and social justice through family-scale agriculture. Since 2001, CAFF has helped coordinate several different FTS programs around the state, including successful programs within Davis, as well as school districts in the central coast of California, including Ventura County (CAFF, 2005). CAFF's FTS has been so successful that Humboldt County FTS has used many facets of their programs as models for organization and design. One such model is CAFF's agricultural literacy program, which attempts to make connections between the foods students eat at school to the places that agriculture is produced. By participating in farm tours, students are able to experience lessons in growing techniques, planting cycles and learn how food is selected and prepared for distribution.

Education in Action

A vital need for FTS was a host farm where they could consistently offer farm fieldtrips. Finding a place where there was familiarity, as well as a place to train volunteers, were essential to the program's success. Through several conversations with community members and farmers, the Arcata Educational Farm was chosen in spring 2005, as a cooperative farm. Humboldt State University (HSU) had used its land for educational

purposes for over a decade. With the farm also came an HSU class, Engineering 480: Community Agriculture, in which students study how to successfully manage an acre and a half of land. The course instructor was interested in FTS principles and suggested incorporating his college students into farm tours, including writing lessons plans and guiding the visiting students through the curriculum. In the past, students had been required to create a farm plan that would serve as a blueprint for the Arcata Education Farm, where the class works once a week. A volunteer group of community partners and HSU graduate students met for several months to plan what the course instruction would look like. To aid in their instruction, organizers assisted students in the creation of lesson plans in order to help guide the students through activities and help them understand some of the state curriculum requirements for teachers such as language arts, science, math and social sciences (See Appendix D: Sample Lesson Plans). The organizers of this project thought this was an essential part of the HSU students' educational experience because they must use the same state standards classroom instructors are required to follow. After the lesson plans were demonstrated, students created their own examples and activities that were incorporated in farm tours. Organizers played an active role in the development of lesson plans, including a one-on-one meeting that evaluated the methods used in the lesson plans, the curriculum content, the involvement of the students in the activities, and an overall evaluation of the breadth of knowledge that is relayed to the students participating in the farm tour. By supporting the students in this way, program coordinators hoped to provide extremely educated, interesting and interactive farm visits that sustain the current missions of the FTS program without sacrificing any of its future opportunities.

This new organization would not only link elementary students with college mentors, but it would help FTS expand its outreach and offer more opportunities than it could previously. In order to match both the growing season and school schedule, the month of April was chosen to begin tours, in which every Wednesday and Friday at least two different schools could visit the farm. Preparations for the HSU-FTS link involved:

- finding state curriculum standards that could match the philosophy of agricultural literacy and localized food systems
- sending out information packets about FTS to third-fifth grade teachers in the county
- developing classroom presentations that prepare students for fieldtrips and gives teachers agricultural-related resources to use both before and after visits
- advertising Engineering 480 at HSU to encourage student participation
- preparing HSU students on developing lesson plans to meet both state standards and the requirements for their coursework at HSU
- securing funding from HSU to fund transportation costs of bus rentals for fieldtrips

Partnerships

FTS partnerships don't stop at the university; connections with local agencies and organizations have played a key role in its success in the county. Involvement with the HCOE, the CO-OP, the Humboldt County Department of Public Health, and University of California Cooperative Extension have aided in the development of local food policies for schools, increased health and nutrition education, and improved fresh fruit and vegetable consumption in classrooms across the county. Humboldt's rural location makes partnerships like these necessary for the survival of such comprehensive programs. Therefore, Humboldt County FTS serves as a rural example of partnership-building, a model other FTS programs across the state are just beginning to incorporate.

One such program is Harvest of the Month, adopted from the Los Angeles Unified School District that highlights a different fruit or vegetable each month and includes a taste test in the classroom. Administered through the HCOE, Harvest of the Month has been used for classroom nutrition lessons and as a supplemental activity for farm fieldtrips. Garden curriculum is also currently being developed for a more comprehensive program that teachers can implement as a teaching tool outside the classroom.

Partnerships with the County Health Department, HCOE and CO-OP have helped develop tours of local farmers' markets to encourage healthy eating. In the spring of 2004, over 100 students from Eureka City Schools participated in the markets and various activities including a taste test and scavenger hunt.

Collaboration with these partners and others like the University of California Cooperative Extension and the North Coast Growers Association (NCGA) has aided in FTS' long-term planning by bringing so many diverse groups to the table. Many partnerships have actively contributed to monthly FTS meetings and conferences, playing a vital role in community-wide outreach, education and bridging together farmers, parents, and schools.

Local Food

Another significant aspect of the national FTS philosophy is the incorporation of localized food into the surrounding community, including school cafeteria programs. Yet this proved more difficult for FTS in Humboldt because of the county's rural location and because of dwindling budgets in many schools, not only in Humboldt, but across the state. Changes to systems that have been operating for years may also be taxing because of an, "if

it isn't broken, don't fix it" attitude. Finding common ground among so many players in the school cafeteria community also proved to be difficult for the FTS program coordinator because everyone involved had a different facet of the system to represent, including different needs and concerns.

Comparative Programs

Yet statewide CAFF FTS activities have succeeded in opening up schools as a direct market for local farmers through support of school lunch programs, specifically a salad bar program, something that is still in the beginning stages for Humboldt County. Not only does this type of support promote success of local small farmers, student participants are also able to try new foods and learn about making healthy eating choices from foods from their surrounding communities (CAFF, 2005). As Humboldt County FTS began their salad bar pilot site in May 2005, the program used some of CAFF's recommended strategies and techniques to promote this new choice in school to students, parents and teachers.

CAFF was not alone in helping promote FTS principles across the state, and more specifically, in the city of Davis. A more comprehensive program, the Davis Farm to School Connection, began in 1999 with the help of local farmers' markets, local school districts, the University of California, as well as the California Department of Education. In its initial stages, the program chose three elementary schools as pilot sites for farmers' market salad bars, and later expanded this to all elementary schools in the Davis Joint Unified School District (DJUSD). During its first two years, Davis' program, coined "Crunch Lunch," offered its locally grown salad bars as a separate option to the traditional school hot lunch meal five days per week. By the third year the model integrated both hot lunch meals and a

salad bar together. Consecutively, agricultural education programs were focused on second grade classes, using garden and composting components for hands-on experiences both in and out of the classroom (Graham, H., Feenstra, G., Evans, A.M., & Zidenberg-Cherr, S., 2004).

“Crunch Lunch” was extremely successful during its first two years of operation, with greater than 37.4 percent participation at schools with salad bars during the 2001/2002 school year. This increase in the school lunch program decreased the following school year, 2002/2003, to about 33 percent participation (Graham, et al., 2004). Coordinators of the program relate this decline to model changes of an integrated salad bar with hot lunch in the third year, lessening the focus of the salad as the centerpiece of the meal. As well, since the salad bar was offered every day, newness of the choice may have worn off. Because of this, food service workers at several sites were considering going back to salad bar only days.

Davis’ “Crunch Lunch” conducted several evaluations of food service workers and staff to identify common concerns and achievements. Many participants noted that they saw an overall positive affect on the students’ eating behaviors, including trying new foods and more healthy food choices. Staff also noted that the independence in decision-making caused many students to be excited and eager to assemble their own lunches. Yet many participants mentioned concern about portion sizes and food waste, noting that many students took too much food and others not enough. Further feedback from the Davis evaluations included the recognition that the addition of a salad bar made lunch more of a social environment for students, contributed to less waste and helped make connections between garden curriculum, composting and recycling. However, food service workers

noted that additional preparation was needed for the salad bars, lack of space existed in some schools for leftover foods, and there was a need for salad bar training for employees. Participants questioned if the program was sustainable due to costs, labor and organization (Graham, et al., 2004).

In spite of this, “Crunch Lunch” has been met with great success as it links school gardens, farm fieldtrips and nutrition education into a comprehensive education program. Through this integration of school meals and education, “Crunch Lunch” organizers hope to influence children’s nutrition knowledge and encourage familiarity with fresh foods that promoted healthy eating habits (CAFF, 2005).

Currently there is a need in Humboldt for a more comprehensive marketing program for small farmers who wish to expand their products into surrounding schools. A pilot salad bar program was started in May 2005 in Eureka and serves as a case study for implementation, accessibility and cost. Students at this pilot site had the choice between the conventional hot lunch menu item during lunch, or the salad bar. Evaluation of students and teachers at the pilot site helped assess the program’s impact and success.

Since its inception, the pilot site salad bar has been met with great success. The opening of the salad bar in early May 2005 was preceded by a school assembly that introduced students to the concepts of nutrition, such as the basic food groups, as well as the value of localized agriculture and salad bar etiquette. Demonstrations highlighted the guidelines of the program, which according to federal standards, necessitate each salad bar consumer to select at least three out of the five food groups during each lunch. For

instance, a student must make sure each salad bar visit includes at least three fruits, vegetables, protein, dairy or fiber daily.

Two days after the school assembly, the pilot site salad bar was operating daily. As stated earlier, FTS helped subsidize the cost of many salad bar items. Food service employees placed weekly orders directly with FTS staff members who then purchased produce from the CO-OP. Because transportation remains an issue in the county, the produce was also picked-up and delivered to the pilot site by a FTS staff member.

After one month, the salad bar remained popular with students and school staff members. Conversations with food service workers confirm that their enthusiasm and support of the salad bar remained high into the next school semester. To measure a portion of the school, 34 students and two teachers from two classrooms were surveyed after one month of daily salad bar operation. All surveys were anonymous and conducted at the pilot site (See Appendix E: Salad Bar Student and Teacher Survey). Some of the greatest outcomes of the survey show that the salad bar has increased healthier food consumption at school, including increased fruit and vegetable consumption, and caused students to try new foods. Survey results also showed that the pilot salad bar helped teach students the difference between foods that are healthy and foods that are unhealthy. Although the Spring 2005 school year schedule only allowed two teachers to be surveyed, results from it show that they have an invested interest in expanding nutrition education in their classrooms.

Remaining Barriers

Because lunch programs receive commodity and subsidized foods, schools are hesitant to spend precious funds on foods that are above wholesale price. This burdens

small farmers in Humboldt as many of their products sell for higher than wholesale at local farmers' markets and specialty food stores. Initial research comparing conventional salad bar items vs. locally grown items for the pilot site show a small savings with local purchasing. Yet conventional items often include delivery prices which local growers cannot tack onto their prices, leaving the burden of delivery cost on the school. However, local delivery prices would most likely be much lower for schools than the cost of shipping food items across the country or state. A school would have to weigh the added cost of locally produced foods against a separate, lower delivery charge to compare the price difference. Although local food was initially subsidized by Humboldt FTS for the pilot site, a more self-sustaining strategy needs to be sought. Without any precise quantitative data comparing conventional food purchasing vs. local purchasing for other area schools, it is difficult for FTS to "sell" the idea to food service workers, who are already forced to work below budget. A more comprehensive comparison needs to be made to discover if local produce is more affordable for other schools. With rising gas prices in the country as well as substantial increases in the county, localized transportation may be a benefit to area growers.

Distribution Strategies

Currently four distribution models for locally grown produce in schools exist within FTS programs throughout CA. Although all rely on someone making the connection between the farm and the school kitchen, individually they share distinct structures, design and ultimately, implementation. Programs fall under four categories: Farmers' Market Salad Bar, Forager, On-line Ordering and Distributor (Kalb & Borron, 2005; Thomas, 2005; Center for Ecoliteracy, 2004).

Farmers' Market Salad Bar

One of the first school districts to implement a Farmers' Market Salad Bar program in CA was the Santa Monica-Malibu Unified School District (SM-MUSD), in which a member of Child Nutrition Services buys and distributes fresh produce weekly from local farmers' markets. The markets serve as a central distribution and pick-up area, and offer a diverse source of farmers and their products all in one location. Orders are often called in to farmers in advance and ready for pick-up when food service workers arrive on site. In this model, farmers learn firsthand the concerns and needs of the school and food service workers are able to gain knowledge of seasonal produce and build relationships with farmers in a community setting (Kalb & Borron, 2005).

A model like this first assumes that a community has a local farmers' market, and secondly assumes that staff members have the flexibility of going into the field to conduct their shopping needs. Many schools in Humboldt County would automatically be disqualified from this scenario as they are already working in a system that is under-employed and underpaid because of budget cuts. Furthermore, many schools in the county would be at a loss because of their rural location and distance from markets. Depending on how much produce is purchased weekly, arrangements would have to be made to store food for the entire school week.

Forager

The Center for Ecoliteracy's (2004) toolkit, *Rethinking School Lunch*, identified that many school districts use one of the simplest methods of distribution by buying directly from farmers. To coin the Center's phrase, "The forager," is one individual employed within

food services or contracted independently, and is responsible for placing orders from farmers, determining availability, as well as arranges for delivery from the farms to school kitchens (Center for Ecoliteracy, 2004).

The Davis Joint Unified School District (DJUSD) has successfully developed the forager model as one means of procuring locally grown agriculture into their school feeding programs. The forager model has the potential for success in other regions as it is often a familiar system for food service managers who also place weekly orders from larger distributors (Thomas, 2005). The only difference depends on the organization of the farmers involved and whether they can provide weekly lists of availabilities to schools in a timely manner.

If a school has a previously established relationship with a farmer, they may decide to enter into a growing contract which allows a bit more security for both the farmer and school. Within a growing contract, schools identify needs for a certain month or months and the farmer agrees to grow specifically for these purposes. Farmers work cooperatively with the school to identify items they need and may be able to suggest local produce that is unique to specific seasons or their farm. In these contracts, prices are negotiated at the beginning, either by item or for the total contract. But participants of this type of strategy must be aware of problems that can arise based on weather, pests, productivity, equipment failures, etc. In growing contracts, contingency plans are a necessary way to protect both the farmer and the school (Center for Ecoliteracy, 2004).

An immediate problem that exists in Humboldt is lack of funding. Often schools are already over budget, leaving food services with less backing and more demand. Employing

one additional person to organize and implement the program, just as the Farmers' Market Salad Bar model suggests, takes them out of the kitchen and away from the immediate needs of the school. Furthermore, quantity of orders plays an important part of the Forager model as small farms may not be able to handle the demands of certain school feeding programs. If orders are too small it may not be worth a farmer's time to deliver the produce. This has been a regular issue in Humboldt where several farmers have received minimal orders too inconsistently from schools to make them a priority. The large geographic size of the county and distances between farms and schools makes this model even more problematic when delivery requires several hours of driving from one school kitchen to the next.

On-line Ordering

One of the newest models to be developed, On-line Ordering, is one avenue farmers in Iowa are getting their produce from farm to table. In the near future, Sonoma County, CA, will also be implementing this model. Collaboration between farmers has made this model a success in Iowa where producers have created an internet site that lists weekly availabilities. Food service directors, who need to become members of the group, set up private accounts and place orders with GrownLocally.com, who then pack and deliver the produce (Kalb & Borron, 2005).

Because this is a new venture, start-up strategies include coordination, infrastructure-building, advertisement, as well as collaboration, and obvious obstacles to this model include access to technology and ease of use. Once organization and commitment between producers are sustained, marketing to schools is essential. Although the initial stages appear difficult, this model may have potential in Humboldt County. The largest barrier that exists

is the organization of farmers, who at the most recent FTS conference in May 2005, began conversations about collective marketing to schools. Because of the county's rural location and size, business relationships have been complicated and few. New technologies like internet sales may help these partnerships along.

Distributor Model

FTS models utilizing an independent distributor have been implemented in New York, Massachusetts, and more recently, in Ventura, CA. CAFF played an essential role in this development by establishing the Gold Coast Growers' Collaborative (GCGC), which serves as the full-service distribution business for institutional cafeterias near Ventura. In this model, schools place their orders with GCGC, who then locates and delivers the freshest available produce from the surrounding communities twice a week (Thomas, 2005).

Often, the distributor is familiar with local farmers and is able to make connections fairly easily. Also, distributors can receive and make deliveries as well as store food for schools during these times. To avoid extra work for the farmer and schools, distributors may also bargain special prices with farmers so that the price schools pay is not too far above the farmer-direct price (Center for Ecoliteracy, 2004).

This model may be the route FTS will take in its northern schools in Humboldt County. Once construction of the CO-OP's new store in Eureka is complete, they have committed to act as the receiver, price-fixer and distributor of FTS produce. This promises to be a powerful and sustainable partnership in the community because of the CO-OP's

reputation for quality and many years of service in the county. Only the future will tell what direction this program will take and if the CO-OP will be as influential as the GCGC has been.

2005 FTS Conference

The 2005 FTS Conference in Eureka, California gave many community members the chance to engage in dialogue that is often difficult in a large county such as Humboldt. Breakout sessions organized regionally-based producers, educators, food industry representatives and activists into small groups concerned with issues of marketing, access, need and sustainability. Insights from those groups follow below.

In the producer small group, farmers discussed the benefits and opportunities of a farmer collaborative in the county, as well as looked at existing ways to build capacity that include local sources for cold storage and distribution means for their products. In addition, farmers discussed the prices they receive from schools, which is often contracted at wholesale prices, as opposed to retail prices they receive from restaurants. Although schools are sometimes difficult to enter into contracts with, participants highlighted potential for expanding to area restaurants, realizing the need to build relationships with local government and schools as a way to increase future impact. Many participants felt that markets still held potential and room to grow.

In the education small group, teacher and student participants highlighted the need for expanded education programs to reach consumers, school staff and the local university. In addition, participants in this group thought community education could teach the benefits of localized agriculture and its impact on surrounding communities. Many participants also

agreed there was a need to increase food security in the county and to secure more funding to make healthier foods more accessible to the general public.

In the community leaders small group, participants discussed using existing facilities to expand local produce in schools such as a local community college, College of the Redwoods' culinary kitchen for storage, a community center for preparing fresh foods, as well as Eureka City School's centralized kitchen for distribution. Participants highlighted that youth will educate their parents about localized agriculture through the development of FTS programs at schools.

In the buyer small group, kitchen managers, grocery store managers and food buyers discussed what they needed to access local food for their various places of establishment. Participants noted that there needs to be assurance in buying relationships with producers, as seasonality is usually a large barrier. Buyers also highlighted the need for simple coordination, streamlining ordering and distribution, small sizes and good prices. Participants added that once produce arrives at their facility, they have no problem using it, so marketing "value-added" products is not required.

After specialty-group discussion, conference participants were divided once again by regions. These small groups included: northern Humboldt, central Humboldt including the greater Eureka area, and south central Humboldt including the cities of Fortuna and Ferndale. The Klamath-Trinity region of the northeast was under-represented so one participant joined the Northern Humboldt region, and Southern Humboldt had no representatives. Within these small groups, participants discussed establishing food

communities in their various regions, or collectives of concerned community members, producers and buyers.

Conference Evaluation

By and large “Local Food for Local People: Farms and Community in Partnership” was a success. (See Appendix C: 2005 Conference Evaluation). Of the 60 evaluations distributed, 24 were returned. From the collected evaluations, the largest group in attendance was local farmers, followed closely by individuals identified as students and college lecturers, consultants, and writers. Participants also included food-based businesses, community based organizations, and individuals from government, including the city, county, and state. Attendees noted that they had various reasons for attending the conference. Some responses included: to support local growers, to become educated about local food systems, to network and make connections, and an interest in community food security. Of those that returned the survey, 23 participants said they planned on taking action. Responses varied on what these actions would be, but some included: encouraging FTS partnerships, buying local produce, building grower and institutional relationships, contacting local schools about gardening and funding for local produce, as well as continued community food system education. As a whole, participants felt the information presented was useful and they enjoyed the presentations and small group discussions.

Future Questions from Program Evaluation Design

Future Research

Future activities of FTS may involve the use of the program evaluation that was developed during this project. Many questions still exist on how to measure long-term outcomes of FTS programs such as long-term behavior as a result of eating nutritional foods, the impact of agricultural literacy programs on youth, as well as the long-term impact on the local agricultural community. Ideally, a program evaluation to measure both qualitative and quantitative data would need to monitor a pilot program during an entire school year, or even longer. Although I was able to actively participate in FTS' educational program, more research is needed on other FTS programs, such as the effects of marketing to large institutions like public schools or hospitals.

Because of the scope of this project, it was impossible to evaluate all five FTS program areas in the present time. However, the logic models serve as an example of the future types of evaluations FTS may want to implement in order to continue to assess short-term objections, as well as longer-term successes and impact. For example, future evaluation of the FTS' agricultural education program could measure how much information students retain about local agriculture through a series of classroom assignments and quizzes. A longer-term evaluation may track student eating behavior throughout elementary, junior high and high school. Future evaluation of the FTS' salad bar program may measure if student food choices improve over one school year by interviewing students. A longer-term measurement of sustained nutrition education could evaluate student eating behaviors outside the classroom. Future evaluation of the grower/school enterprise FTS program may

track how much money school cafeterias' spend locally over one school year. From these results, an evaluation could measure the increased health benefits locally purchase foods provide to students. Longer-term measurements of FTS' community building program may evaluate the different types of relationships that are built from FTS activities and what those relationships accomplished. Additionally, future evaluation of FTS' school garden program may track student success rates related to alternative programs in school like gardening programs.

In the next chapter, final conclusions about the Humboldt County Farm-to-School program are noted. The history, literature review, methods, areas of program evaluation and design, and comparative programs and implications for Humboldt County chapters of this project are examined for existing barriers in the FTS program. In addition, suggestions are made for the future of FTS in Humboldt. Impending federal policies are also examined as a method for local change.

VII. CONCLUSIONS

No matter what direction Humboldt FTS takes, many important strategies can be learned from the existing FTS models that are used throughout the state. Most importantly, by analyzing these current models, Humboldt FTS may find a program that will best address the economic, social and environmental food needs of the county. Since there are advantages and disadvantages to many of the strategies, it may be up to individual schools to decide what best fits their meal programs.

Initially, food service directors need to realize that locally grown foods have specific seasonal fluxes. What may be prevalent on farms in June most likely won't be available for school lunches in December. Being flexible with breakfast and lunch menus and adjusting these meals dependent on local seasons increases a school's chance of incorporating more fruits and vegetables from the surrounding community. Although monetary problems are not an easy fix, organization and planning are key components for FTS success. If food service managers are able to track the costs of conventional foods vs. locally grown produce, they may be able to petition school boards, parent groups and school nutritionists for change.

Although food service staff play an essential role in FTS activities, farmers play an even larger one. Unless schools know what food is available during the school year, they will be less likely to be open to change. Establishing relationships between schools and growers is an important first step toward collaboration. For example, educational visits to farms and classroom presentation from farmers have the potential to leave lasting impressions on the

school staff, parents and students. A follow-up farm visit may be established for food service directors to introduce them to seasonal produce, capacity and quality of food. Once this education takes place and food service directors witness the potential, strategies for implementing local foods could slowly be evaluated. Although change may be slow and limited, relationship and capacity building are important skills for the future when new tools, such as internet ordering or independent vendors exist.

Currently in Humboldt there is much support for local food systems, not only with FTS, but with improvement of county residents' access to healthy food, affordability and other issues of food security. Food-related discussions have included the North Coast Growers' Association (NCGA), a group that organizes five area farmers' markets and who is currently in the process of establishing their collaborative, and Friends of Humboldt County Farmers' Markets (Friends), a non-profit organization. Key to their agenda is the promotion of local agriculture, raising awareness around agricultural issues and local food systems, improved food security, exploring new marketing opportunities for farmers, and collaboration with the agriculture, health, and food system communities to strengthen one another's work (Wylter, 2005). Other concerned groups include the Humboldt County Office of Education (HCOE), Humboldt State University (HSU), the Humboldt County Health Department, and the University of California Cooperative Extension.

The FTS program within Humboldt County needs to take into consideration all of the issues and resources involved in this complex system of agricultural markets, education and nutrition policies. Nutrition education programs conducted through HCOE as well as education programs at HSU may play a large role in future FTS activities, including increased

capacity building and improved resources such as expanded funding opportunities. In addition, FTS coordinators are discussing the possibility of establishing a CAFF chapter for the county, which would also help build Humboldt FTS capacity and add to its resource base. Included in CAFF's resources for Humboldt is their "Buy Fresh, Buy Local" campaign that attempts to promote regional markets for locally grown foods.

Policy

Recent developments in government policy concerning issues of child nutrition and localized farming systems may take FTS one step closer towards this goal. The California Farm to School Child Nutrition Improvement Act, also known as the AB 826 (Nava), is a recent attempt by the California Food and Justice Coalition (CFJC) and the Community Alliance with Family Farmers (CAFF) to improve both the nutrition and health of California children and also improve the economic viability of farmers. The bill, which creates a statewide FTS program, collaboratively brings together the California Department of Education, the California Department of Food and Agriculture and the California Department of Health Services to encourage the purchase of fresh fruits and vegetables from both local and California producers for the school meal program. Other aspects of the California Farm to School Nutrition Improvement Act include the training of public schools to link up with local farmers to make fresh and seasonal produce a priority in school meals, the training of farmers on strategies for marketing to large institutions like public schools, promotion of the purchase of California produce by the Department of Defense's Fruit and Vegetable Program, and the creation of FTS seed grants that would provide schools the resources needed to implement local agriculture into the school environment (Fenny, 2005).

Most importantly, the AB 826 (Nava) declares that it is California state policy to encourage the promotion of FTS principles within public institutions like schools, universities, hospitals and correctional facilities. Implementing this act as state policy is extremely important as it would support FTS as a priority in government and give it legislative backing that may allow it to grow into a statewide initiative. As of September 2005, the AB 826 (Nava) was passed in the California Assembly Committee on Agriculture, the California Assembly Committee on Higher Education, and the California Senate on Agriculture California Senate Education Committee in late June and the California Senate Education Committee by bipartisan support (Fenny & Price, 2005). Now that the bill has passed, Congress needs to fund the provisions of it and California Governor Arnold Schwarzenegger needs to sign it. This comes at a difficult time as new provisions to the bill were passed in the middle of Congress' appropriations process, meaning AB 826 (Nava) most likely will not be funded until October 2005. Although this is a small setback, it is a significant achievement for both CFJC and CAFF, as well as their supporters.

Humboldt County FTS need to thoroughly examine opportunities provided by these new state and federal policies and the potential opportunity for implementation throughout the county. Policies like the California Farm to School Nutrition Improvement Act would not only make fresh and seasonal produce a priority in school meals, but would provide a structure for school food directors and farmers to enter into a working relationship. In addition, policy such as this would not only provide technical assistance, but also financial backing to bring local agriculture into schools, something desperately missing at the moment.

Currently, schools have the ability to make policy changes themselves that may affect greater change than statewide programs. Policy development concerning school meal programs may be a positive route schools can implement if existing school guidelines do not seem effective. In June 2005, the Urban and Environmental Policy Institute (UEPI) at Occidental University in southern California identified many current policies schools around the country have adopted to improve school foods. This comes at an important time as the reauthorization of the Child Nutrition Act in 2004 included a new federal mandate that requires each educational agency that participates in federal school meal programs to establish a school wellness policy by the beginning of the 2006-7 school year (Vallianatos, 2005). At a minimum, the law requires that wellness policies must include goals for nutrition education and physical activity, the establishment of nutrition guidelines for all foods available at school, assure that new school guidelines are not less restrictive than federal requirements, establish a measurement strategy, and involve the public (Fenny, 2005).

Some of the policy options that UEPI collected include: restricting unhealthy competitive foods and offering more healthy food items, restricting advertising and vending contracts in schools, improving food preparation, service and eating environments in schools, increase participation in school nutrition programs, better integrate food service with school educational, health, and environmental missions, purchase and serve food in a manner that supports community economic development and local farm livelihoods, and provide opportunities for public input (Vallianatos, 2005). With the upcoming wellness policy requirements, schools may find that the adoption of FTS programs is a positive

solution that not only resolves the mandated law, but also supports the future health and well-being of its students and surrounding communities.

Humboldt County is ripe for these types of policies to take root. One of the largest components that is currently limited in FTS activities is the movement of localized food into the school. Although there has been great success from farm fieldtrips and classroom presentations, many schools still do not have the financial capacity or know-how to bring fresh produce into school lunches. Shrinking budgets and limited human labor in school cafeterias do not allow local agriculture to be a priority. The efforts of agricultural literacy and environmental education out of the classroom need to be followed up with live examples in the classroom, such as school salad bars, fresh fruits, and other alternatives to conventional hot lunches. A fieldtrip to a local farm may teach students about the importance of agriculture in their community, yet they may not be able to make the connection to their own lives if they are unable to see evidence in their own environments, such as the school cafeteria. It is for that reason that FTS goes beyond an alternative education program. It challenges the whole food system--environmentally, economically and socially. Implementing school food policies concerned with these issues is essential to not only support health and education, but also community economic development and local farm livelihoods.

It is this author's belief that FTS is a community effort, involving those people and organizations that view issues of food insecurity as an economic, social and environmental problem with multifaceted solutions. The expansion of FTS principles goes beyond nutrition education solely. Social issues related to globalized food systems cause complex

problems of hunger, poverty and can negatively impact people's quality of life. Addressing issues of economic and environmental justice goes beyond a one-step solution. Recognizing the interrelatedness of the issues and striving for systematic changes may provide a stronger foundation for change. Participants should comprise a diverse group of stakeholders including parents, students, teachers, farmers, business leaders, community activists, and food service directors. As noted earlier, more extensive marketing research for the county is needed to increase FTS' outreach and effectiveness. This would not only help expand agricultural outlets for local farmers, but would assist schools in meeting the increasing demand for nutritious, fresh foods.

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APPENDIX A: EUREKA CITY SCHOOL FOOD POLICY

Eureka Food & Nutrition Policy

The Governing Board recognizes that students need adequate, nourishing food in order to grow, learn and maintain good health. It further recognizes that significant research indicates a positive relationship between adequate nutrition and learning resulting in academic success. (*cf. 6142.81 - Nutrition and Health Education*)

The Board will commit that all schools will participate in available child nutrition programs, including breakfast, lunch, after school snacks, childcare and summer food service. The District will provide adequate resources (personnel, equipment, ongoing maintenance, technology) to implement the Nutrition Policy. The implementation of the Nutrition Policy and related Health Education Policy will be supported by all employees of the district. Parents/guardians will be encouraged to support the district's nutrition education efforts by considering nutritional quality when selecting any snacks, which they may donate for occasional special events. A District Nutrition Advisory Committee (students, parents, community members, staff representing all school sites) will meet a minimum of twice annually to review implementation of these policies and regulations and provide an annual report to the Board.

Quality of Food

The Superintendent or designee shall ensure the meals offered by the district's food service program meet all legal requirements for participation in the National School Lunch and School Breakfast Programs. The Superintendent or designee shall ensure that food sales by school-related groups and the use of vending machines are in compliance with state and federal law and do not impair student participation in the district's food service program. Sanitation and safety procedures shall comply with the requirements of the California Uniform Retail Food Facilities Law as set forth in Health and Safety Code 113700- 114455. BP 3550(b)

NUTRITION/POLICY (continued)

All food available to students on school premises during school hours, including food sold by the Food Service Department, through vending machines and by student sales will meet or exceed nutritional standards established by the District. All foods available to students during school hours shall be:

- Selected so as to contribute to student's nutritional well-being and the prevention of disease.
- Prepared in ways that will appeal to students, retain nutritive quality and foster lifelong healthful eating habits.
- Provided to give a variety of healthy choices at all sites including ethnic and cultural favorites.

- Students will be involved in the selection, tasting and marketing of healthy foods that appeal to students.
- Healthy food choices (fresh fruits and vegetables, whole grains, dairy products) should be promoted in school activities involving staff, students and community.

Student Access

All school campuses will ensure that each student will have access to healthy food choices through:

- Universal breakfast offered in the classroom to at least K-5 students
- A variety of venues at the high school that offer the highest quality foods for the lowest possible cost
 - Access to fundraising through food and flower sales will be equitable for all classes and/or student organizations.

Maintenance of a Healthy Environment

All school sites will provide an environment where healthful eating behaviors are the norm and are modeled and reinforced. BP 3550(c)

NUTRITION/POLICY (continued)

Adequate space in a pleasant surrounding will be provided to eat meals as well as appropriate time to eat, relax and socialize. The Superintendent or designee will ensure practices are in place to foster mutual respect between service providers, school personnel and students.

Legal Reference:

EDUCATION CODE

38080-38103 Cafeteria, establishment and use

45103.5 Contracts for management consulting services; restrictions

49430 -49436 Pupil Nutrition, Health, and Achievement Act of 2001

49490-49493 School breakfast and lunch programs

49500-49505 School meals

49510-49520 Nutrition

49530-49536 Child Nutrition Act

49540-49546 Child care food program

49547-48548.3 Comprehensive nutrition services

49550-49560 Meals for needy students

49570 National School Lunch Act

CODE OF REGULATIONS, TITLE 5

15500-15501 Food sales by student organizations

15510 Mandatory meals for needy students

15530-15535 Nutrition education

15550-15565 School lunch and breakfast programs

CODE OF FEDERAL REGULATIONS, TITLE 7

210.1-210.31 *National School Lunch Program*

220.1-220.21 *National School Breakfast Program*

Management Resources:

CSBA PUBLICATIONS

Healthy Food Policy Resource Guide, 2003

CDC PUBLICATIONS

School Health Index for Physical Activity and Healthy Eating: A Self-Assessment and Planning Guide for Elementary and Middle/High Schools, 2000

NASBE PUBLICATIONS

Fit, Healthy and Ready to Learn, 2000

USDA PUBLICATIONS

Team Nutrition, Food and Nutrition Services, Changing the Scene, Improving the School Nutrition Environment: A Guide to Local Action, 2000

WEB SITES

CSBA: <http://www.csba.org>

American School Food Service Association (ASFSa): <http://www.asfsa.org>

CDE, Nutrition Services Division/ SHAPE California: <http://www.cde.ca.gov/nsd>

CDHS, School Health Connections: <http://www.mch.dhs.ca.gov/programs/shc/shc.htm>

(continued on next page)

BP 3550(d)

NUTRITION/POLICY (continued)

Management Resources: (continued)

California Project LEAN (Leaders Encouraging Activity and Nutrition):

<http://www.californiaprojectlean.org>

California Healthy Kids Resource Center: <http://www.californiahealthykids.org>

National School Boards Association: <http://www.schoolhealth@nsba.org>

National Association of State Boards of Education (NASBE): <http://www.boards@nasbe.org>

U.S. Dept. of Agriculture, Food and Nutrition Information Center (FNIC):

<http://www.nal.usda.gov/fnic>

Centers for Disease Control and Prevention: <http://www.cdc.gov>

Policy EUREKA CITY UNIFIED SCHOOL DISTRICT

adopted: July 16, 2003 Eureka, California

Business and Noninstructional Operations AR 3550(a)

NUTRITION/POLICY

Quality of Food - Nutritional Standards

All food available to students on school campus during school hours must be from one or more of the following categories:

- Milk and dairy products, including cheese, yogurt, frozen yogurt and ice cream

- Full-strength fruit and vegetable juices and fruit drinks containing 50 percent or more full-strength fruit juice, and fruit nectars containing 35 percent or more full-strength fruit juice
- Fresh, frozen, canned, and dried fruits and vegetables
- Nuts, seeds, and nut butters
- Non-confection grain products including crackers, bread sticks, tortillas, pizza, pretzels, bagels, muffins, and popcorn
- Any food receiving prior approval by Food Service Department

In addition, the food items must meet the following criteria:

- Not more than 35 percent of the total calories of the food item, excluding nuts or seeds is from fat
- Not more than 35 percent of the total weight of the food item, excluding fruits or vegetables, is composed of sugar

The Food Service Department will provide a list of foods that meet these criteria.

A production system will be developed and implemented to reduce the use of processed foods and increase the use of basic fresh foods that emphasize fruits, vegetables, whole grains and dairy foods which are low in fat, added sugars and sodium. The use of fresh fruit and vegetables will be encouraged by making fruit and vegetables available at all points where food is sold and promoting the intake of 5 servings of fruits and vegetables per day. During school hours, food sales, including vending machines, that are accessible to students shall not sell or dispense: AR 3550(b)

NUTRITION/POLICY (continued)

- Sodas or drinks that contain caffeine or a high concentration of sugar
- Candy
- High fat chips or similar products that do not meet the above nutritional standards

Beverages that may be sold to students are water, milk, 100 percent fruit juices, sport drinks or fruit-based drinks that are composed of no less than 50 percent fruit juice (or 35% for nectars) and that have no added sweeteners.

During school hours, home-prepared products will not be allowed to be sold on campus due to the potential of food borne illness. However, site approval may be requested for special occasions involving foods that may not meet these nutritional standards. These foods and service methods must meet food safety standards as specified by the Food Service Department. (i.e. multicultural events)

Annually food service staff will be provided training in food safety, marketing, preparation and service of healthy menu items.

The District will provide to parents information on safe and healthy foods that would be acceptable for special events (i.e. classroom parties).

To the extent permitted under the National School Lunch and School Breakfast Programs, students in all grades shall be allowed to decline a certain number of meal items they do not intend to consume.

Student Access

An efficient and cost effective system will be implemented for preparing and distributing healthy foods to all sites including the use of carts, vending machines and classroom service. Marketing of the school lunch program will include a wide variety of school resources such as students, special food promotions and PTSA's. High school administration will evaluate a closed campus and its effect on food services, attendance, school spirit, community relations, etc. Vending machines that contain beverages that do not meet the District nutritional standards shall remain locked or be rendered inoperable during the school day. AR 3550(c)

NUTRITION/POLICY (continued)

The Food Service Department will enter into partnerships with interested student groups to provide food-selling opportunities while sharing labor and profits from such events. The Food Service Department will work with administration at each school site to establish a nutrition committee that will develop a process for approving sale of food by all groups during the school day and to provide equitable access and distribution of revenues for appropriate uses.

Maintenance of a Healthy Environment

Advertising of food and beverages on vending machines should promote healthy food choices. All primary school administrators should evaluate schedules and if possible, promote playtime before eating lunch.

Regulation **EUREKA CITY UNIFIED SCHOOL DISTRICT** approved: July 16, 2003
Eureka, California.

APPENDIX C: CLASSROOM PRESENTATION

Cities and Farms

We'll be visiting the Arcata Educational Farm, which is located in Bayside Park in Arcata. Students at HSU run the farm and use it as an outdoor classroom. It's a special treat for us to go visit them. Typically in the spring, farmers are planting crops for the rest of the season, however, Humboldt is a mild climate where some crops can be grown all year round. Why do think we're visiting the farm? What can we learn? Make sure to look and ask what's being grown when you're out at the farm so you know what's in season right now. Does anyone have a garden at home? Do you know what grows in it?

Humboldt is a rich agricultural area. In fact, we have some of the best pastures and rangeland in the United States due to our temperate climate, fertile soils, and abundant rainfall. Dairy, timber, flowers and food crops are produced in our beautiful location near the sea and inland along the rivers. Although we won't visit any cows on our farm tour, the Arcata Educational Farm is special because it has been around since 1993—12 years-and was made for people just like you! It's a special farm practicing Community Supported Agriculture (CSA). A CSA is where members pay for their produce at the beginning of the year and come to the farm once a week during the harvest season to pick up their produce. People like you and me can even volunteer their help on the farm and receive fresh fruits and veggies in return-YUMMY!! Why do you think a CSA is a good idea? What are some other ways farmers can sell their products? What are some important components of farming? Who or what else besides the farmer is involved in growing food?

Places like the Arcata Education Farm and other farms around us are important- why? What would happen if there were no farms? Well in fact, there are a lot less farms than there used to be, both in the United States and around the world. In the late 1800's and early 1900's 60 percent of the nation was agriculturally based, but today, only 2 percent of people farm!! That's a big difference. Because of that, there aren't too many farms around anymore or even people to live and work on them. That means that lots of the foods we eat everyday come from all over the world. Did you know that the dinner you eat tonight at home probably came from almost 2,000 miles away?! That's like going all the way from here to Alaska to eat dinner!! Now doesn't that seem silly?!

But it doesn't have to always be that way. Humboldt County is a great place to live because we have many small farms that grow all kinds of fruits and veggies that are not only good for us to eat, but also help prevent diseases that make us sick. How many servings of fruit and vegetables do you want to eat everyday? What are some of your favorites?

We also have lots of farmer's markets where farmers can bring their food to sell to the public. Have you ever visited a farmer's market or a farm to buy food? What sorts of things did you see there? Some people like going to farmer's markets just to see and smell all the interesting and unusual fruits and veggies that grow right in our own backyards! Some people also like to go because it is fun to meet the farmers who actually work so hard to grow food-its like putting a face on a tomato-knowing where your food comes from! And that's why we are so excited to invite you to the Arcata Ed Farm and show you all the beautiful things that grow there. Make sure you thank the farmers when you see them!!

APPENDIX D: SAMPLE LESSON PLAN

HOWDY PLANT!

Grade Level: 2/3

Subject Area Focus: Language Arts

General Topic: Students use all of their senses to explore and “interview” the life of a plant

Relation to Grade Level Curriculum Requirements: Students will partake in reflection activities including observation, sensory detail, and oral presentations.

Knowledge:

- Create an imaginative story
- Use descriptive details to recall a sensory-detailed narrative
- Become aware of senses

Skills:

- Develop sensory-awareness skills
- Sharpen vocabulary and use of descriptions
- Interpret narrative as an oral presentation to classmates

Values:

- Recognize the value of sensory awareness
- Creatively express themselves
- Recount their individual experiences to a group of peers
- Distinguish similarities/ differences between their life and that of a plants'

Materials and Equipment:

- 2 Large tarps or blankets
- Writing paper/notebooks and pencils
- Colored Pencils/Watercolors

Overview of the Lesson:

Students will use many of their senses to explore plants found on the farm. When the students have located a plant that they are drawn to, they will have the opportunity to “get to know the plant” by interviewing it. After their interview, students will compose a brief narrative about their plant including detailed descriptions of their plants life, the plant’s likes/dislikes, habits, etc. Personal sketches of their plant will also be used to enhance detail and imagination.

After their narratives are complete, the students will recount their stories to the rest of the group, highlighting specific details and descriptions that makes their plant “special.”

Detailed Plans:

Opening:

- Gather students into a circle on the tarps
- Explain what it means to use our senses
- Highlight the importance of personal imagination
- Explain briefly what an interview is and how they will conduct it
- Give them examples of what an interview with a plant might sound like

Main Activities:

- After explaining the activity, break students up (possibly into pairs) and show them the area they should explore. At this time, students should have a pencil and piece of paper to jot down ideas and key words.
- Allow students about 3-5 minutes of alone time to explore, find a plant and interview it. Although this could last a long time, encourage them to ask questions like:
 - Name/Age of plant
 - Likes /Dislikes
 - Things that are important to them (ex. Family, friends, sunlight, water, animals, etc.)
 - If they could be anything in the whole world, what would they be?
- While the students explore and talk to their plants, monitor safety and participation. If a student seems confused or uninterested, suggest some sensory awareness actions that will help them with their imagination (ex. What does your plant smell like? If you were to eat your plant, what would it taste like? Does your plant have an accent-are they from Humboldt County? What does your plant feel like? What is a special detail about your plant? What does your plant remind you of? If you had one name to give your plant, what would you choose?).
- After students finish their interviews, have them gather on the tarps. If there is some wait-time, bring out the colored pencils/watercolors and encourage them to draw something about their plant's life. (This activity could also take place if the group finishes early).
- Begin storytelling with the students. If someone is hesitant about sharing, let them share in their own time. Lead the group through as many stories as time will allow. Encourage them to share on the bus ride home if you run out of time.
- During the stories, encourage the students to be good listeners and participate by saying, “Ahhh!” or “How interesting!”

Closing:

Allow time for a 2-3 minute debrief of the activity. This is a good time to applaud them for their creativity and use of their senses. Highlight the connection between their own lives and the lives of their plant. How are they similar/different? Why is it interesting to find out a plant's story? Why is it important to share with each other? Ask students: How can they "listen" to different parts of nature everyday.

Follow-up Activities:

Encourage students to share their stories with their families and friends. If they didn't get a chance to finish a sketch or drawing, suggest they do so at home. Let them know how special their interviews were, and how neat it would be if they had someone help them write their interviews into a story with pictures.

Lesson Evaluation:

Student should take away a sense of creativity and good use of their imagination. They have had the opportunity to explore the life of a plant through their own eyes, which gives them quite a bit of flexibility and ownership of their finished product. There aren't many expectations for what this final product will look like, since each child will have their own interpretations and perspectives. An important aspect of this lesson is that everyone sees the world a bit differently-and boy, isn't it wild and beautiful! By spending time alone with their plant in conversation, each student may experience a sense of connection with the natural world. Connections between the students' own lives and that of their plants' is an excellent way to highlight diversity in the world, and the importance of everything around us-even if we have to get on our hands and knees to discover it!

APPENDIX E: SALAD BAR STUDENT SURVEY

1. Please check the box that fits for you.

Because of the salad bar ...

- | |  |  |  |
|--|---|---|---|
| a. I eat the school lunch more often..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. I like the choices for school lunch better | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. I eat healthier foods at the school cafeteria..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. The food tastes better at the school cafeteria..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

2. Please check the box that fits for you.

The salad bar has helped me to eat ...

- | |  |  |  |
|---|---|---|---|
| a. More fruits and vegetables..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. More foods that are grown around here..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Less fast food (like McDonald's) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. New kinds of food..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Healthy snacks more often..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Food that is good for me at home more often..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g. Food that is good for me at school more often..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

3. Please check the box that fits for you.

Because of the salad bar

- | |  |  |  |
|---|---|---|---|
| a. I know more about which foods are healthy
and which foods are not healthy | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. I make healthier food choices..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

8. Are you ... a boy a girl? 9. What grade are you in? _____

List some things you would like included on the salad bar:

If you don't eat the salad bar, why not?

APPENDIX F: SALAD BAR TEACHER SURVEY

This survey is being used to gather information on the students served by the salad bar and your opinions about it so we can improve it for you and for other schools. We are interested in your honest answers.

Background Information

Name: _____

Position: Teacher

Name of School: Pine Hill

Project Start Date: May 2005

Current enrollment of your class: _____ students

Grade level(s):

Kindergarten

3rd grade

6th grade

1st grade

4th grade

7th grade

2nd grade

5th grade

8th grade

a. Are your students expressing interest in the salad bar?..... Yes No

b. Are you participating in the salad bar?..... Yes No

c. Is the salad bar encouraging food related conversations that you're able to weave into your lessons?..... Yes No

d. In addition to the salad bar, would you be interested in...

Farm tours and/or farm-based field studies

Agriculture related curriculum

Nutrition and food related curriculum

Classroom cooking

Farmers' market tours

Farmer presentations in the classroom

Taste tests of local products

School gardens and/or greenhouses

Community garden tours

Other _____

e. Comments or suggestions

APPENDIX G: LIST OF COMMONLY USED ACRONYMS

ASD= Arcata School District

CAFF= Community Alliance with Family Farmers

CFSC= Community Food Security Coalition

CO-OP= North Coast Cooperative

CSA= Community Supported Agriculture

DJUSD= Davis Joint Unified School District

FNS= Food and Nutrition Service

FTS= Farm-to-School

HCOE= Humboldt County Office of Education

HSU= Humboldt State University

KTJUSD= Klamath Trinity Joint Unified District

NCGA= North Coast Growers Association

NSLP= National School Lunch Program

PU= Pacific Union School District

USDA= United States Department of Agriculture