Applied Solutions

Local Foods: From Farm to College and University Foodservice

Catherine H. Strohbehn, Ph.D., RD, CFSP
Adjunct Assistant Professor
Hotel, Restaurant and Institution Management Program
Iowa State University

Mary B. Gregoire, Ph.D., RD
Chair, Department Apparel, Educational Studies and Hospitality Management
Iowa State University

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ABSTRACT:

Reasons college and university foodservice directors are considering purchasing food from local sources include declining numbers of family farms and increasing concerns about food safety as well as providing education to students about food production while providing nutritious meals. Results from a survey of college and university foodservice directors in an agriculture-based Midwestern state show support for purchasing from local sources, primarily to support regional economies, provide fresher and higher quality food, good public relations, availability of safer food and the ability to purchase smaller quantities. Obstacles identified were adequacy, seasonality and reliability of supply, cost, dealing with more vendors, and getting approval for new suppliers. An overview of farm to college and university foodservice projects around the country and a profile of this state's college and university foodservice operations are presented.

INTRODUCTION

Agriculture, food and communities are three systems that interact in many ways. While these interactions are beneficial to human health, they can also compromise it, as four of the ten leading causes of death are related to dietary and lifestyle factors (Community Food Security Coalition, 2002). In addition, food transportation miles can have a detrimental direct impact on the environment and indirect impact on human health (Pirog, Van Pelt, Enshanyan, & Cooke, 2001).

Declining numbers of small- to medium-size farms and vertical and horizontal integration along the food chain are concerns for rural communities and the family farms that support them. The latest USDA Census of Agriculture reports that just 3 percent of the nation's farms (those with sales of more than half million dollars a year) are producing more than 60 percent of America's agricultural goods. It was also reported that there were 18,000 fewer middle-sized farming operations than 5 years ago (Dreyfuss, 2004).

The U.S. farmer's share of retail food expenditures was 40% or higher in the 1940's and 1950's. However, by 1980 it had fallen to 37%, declined to 30% in 1987, and dropped further in 1997 to 21% (Elitzak, 1999). This decline can be partly explained by the increasing share of the food dollar spent on processing with increased convenience for the consumer, marketing, and corporate profits, and even by the concentration of power in food retailing. Direct marketing of food products to end users, be they consumers at home or foodservice operations, is one strategy to shorten the food chain between producers and consumers, thus increasing the farmer's share of the profit.

In recent years, direct marketing of farm products has increased as an important sales outlet for agricultural producers. The number of Farmer's Markets has increased 79% from 1994 to 2002 (USDA, 2002) and play an integral part of an urban-farm linkage while meeting the needs of farmers with small- to medium-size operations. Farm sales direct to consumers grew 36% between 1992 and 1997 and topped $812 million in sales in 2002 (USDA, 2002). Direct farm sales to retailers, groceries, restaurants and other foodservices likely have seen similarly dramatic increases, although there are no data to support this.

The purpose of college and university dining services is to provide healthful and nutritious meals to students and others on campus. These campus foodservices have an important influence over students' eating habits as the dining center will typically provide the majority of a student's meals. Residence hall meal plans, special event caterings, convenience stores, mobile carts and a la carte are just a few of the dining options provided by foodservice departments on campus. Because campus foodservices are part of an educational institution, a mission to help student better understand food production practices and products can also exist.

Foodservice operations can be administered by the college and university or outsourced to a contract management company. Regardless of administrative origin, the college and university dining sector is a potential market for local farmers' products. Some higher education institutions are building partnerships with local food producers and, as a result, strengthening their communities and providing a learning experience to students (Valen, 1992; Nadeem Sidiqqui, former director of dining services at Cornell University, personal communication, April 2001; Santora, 2003).

Inclusion of locally produced foods in college and university dining services offers the opportunity to increase students' awareness of food growing and processing systems. As our family farm society has changed to an urban lifestyle, consumers in general have less knowledge about the origin of their food. Knowledge of where and how food is grown and processed can help allay concerns about the safety of the food consumed, particularly in light of concerns about food security and terrorism. This awareness of where and how food is grown has been an important theme in the Team Nutrition curricula targeted to school-age children with such lessons as "We Can Grow a Garden", "Food Grows", and "Where Do Foods Come From?" (USDA, 1995).

Concerns about food safety have increased dramatically, particularly after the terrorist attacks of September 11, 2001. One outcome of this concern has been passage of the Bio-Terrorist Act by Congress in 2002, which mandated trace-back capability along the food chain to within a four hour period of time. Final details of the legislation are currently in committee.

College and university foodservice operations are faced with many challenges in fulfilling their mission to provide safe and nutritious foods to students. Increasing budget constraints may influence administrators in educational organizations to contract with foodservice management companies, contract out meals to quick service chains that offer brand recognition to students, or increase use of processed or pre-prepared foods to decrease labor costs and in-house food handling of product as a means of ensuring safety. Yet, some institutions have successfully initiated changes in purchasing methods to include use of local suppliers.

Purchase of locally grown and processed foods provides a way for the educational institutions to better connect with their communities, serve fresh food to their patrons, and offer support for local food growers and processors (Gregoire & Strohbehn, 2002; Strohbehn & Gregoire, 2001, 2003; Sanders & Ancev, 2003; Starr, Card, Benepe, Auld, Lamm, Smith, & Wilken, 2002). Additionally, transportation miles and fuel use are reduced, thus providing an environmental benefit (Pirog et al, 2001). For smaller colleges, additional benefits include negotiation of purchase units smaller than wholesale packs or specific varieties of produce.

Characteristics of the college and university, such as whether the institution is public or private, large or small, urban or rural, and self operated or contracted managed, will influence purchase methods, quantities, quality, supplier and delivery availability, menus and selection of suppliers. For example, a contract managed college foodservice may have a set menu and set list of suppliers, who have reached a purchasing agreement with the contract company for all colleges that are serviced by the company. Public institutions typically are required to use a competitive bid process for purchasing of foods or items and require board approval for payments. These institutions may also have a minimum dollar value of purchases that can be made without the governing boards' approval. Policies may dictate the number of suppliers that must be informed about potential sales from the institution, or a specific geographic region for the supplier may be identified.

A recent survey of public institutions in Oklahoma (Sanders & Ancev, 2003), including colleges and universities, found that a majority of respondents would be willing to purchase local foods if institutional practices and policies supported such decisions.

Two-thirds agreed that local foods would be purchased if price and quality were competitive, and a local supply was available. In addition, respondents to this survey indicated there is some confusion as to health and safety information on local foods (19%) and regulatory information (19%). This finding is consistent with previous work by Strohbehn and Gregoire (2003) in which foodservice operators expressed uncertainty about whether local producers are considered "approved suppliers". Food buyers must adhere to local, state and federal regulations when selecting food suppliers. Regulations are clearly defined with regards to inspection and supplier criteria for meat, poultry, dairy, and processed/packaged foods, but less clear for fresh produce (*Food Code*, 2001; Hamilton, 1999). Most of the institutions (75%) used a prime vendor from whom the majority of food items are purchased.

Previous research among other sectors of the foodservice industry (schools, healthcare and independently owned restaurants) indicates that obstacles to local food purchasing include reliability, adequacy and consistency of supply; year-round availability; safety of product; cost; knowledge of sources; and increased ordering, receiving, product processing and payment procedures (Strohbehn & Gregoire, 2003; Gregoire & Strohbehn, 2002; Starr et al, 2002; Johnson & Stevenson, 1998). In 1998, producers noted concerns about provision of liability insurance and quality control measures, both likely issues today as bio-security threats to safe food have increased (Johnson & Stevenson, 1998; Hamilton, 1999). College and university foodservices wishing to educate students about food sources and production practices will likely face these same challenges when purchasing from local suppliers.

Because characteristics of the institution and the campus culture will vary, each farm to college and university foodservice project will be unique. A review of farm to college and university foodservice projects around the country is helpful in understanding what factors contributed to the successes of these projects. A survey to assess what college and university foodservice directors in one state think and know about local food purchasing, and a composite of the campus characteristics can add to the body of knowledge, and provide useful information as action steps are taken on individual campuses.

DESCRIPTION OF THE SOLUTION

There has been increased interest in farm to college and university foodservice projects in all types of higher education institutions in different parts of the country. These projects have begun and have been successful due to a variety of factors. Information about farm to college programs at the national level is available from the Community Food Security Coalition (see www.foodsecurity.org/farm_to_college.html).

Cornell University in the state of New York has a self-operated foodservice department and for several years has successfully purchased from local producers. Cornell is part of a pilot project for a state-funded effort to develop and strengthen farm to college connections. (See www.cce.cornell.edu/farmtoschool/.) Nadeem Sidiqqui, former director of dining services at this university, was very committed to purchasing food products from local sources, and student groups have been active in ensuring this practice continued. Thus, external funding, a foodservice director advocate, and active stakeholder groups have demonstrated commitment to ensuring the success of this project.

At the University of Wisconsin (UW)-Madison, a project to encourage food purchases from local farms and farm cooperatives is now in place at six of the UW campuses. The project began with Sustainable Agriculture Research and Education (SARE) funding to investigate the potential for colleges and universities across the country to purchase local, sustainable food products. The report, "Something to Cheer About: National Trends and Prospects for Sustainable Agriculture Products in Food Service Operations at College and Universities" (Johnson & Stevenson, 1998) highlighted that local food purchasing initiatives begin and are sustained for a number of reasons. Two colleges in the UW study are religious institutions with strong principles of agricultural stewardship. At other schools in the project, students were responsible for initiating inclusion of local foods, typically organically grown, on menus. Again, an external funding source and support from multiple stakeholder groups contributed to the success of the colleges and universities in the UW project.

A similar project at Middlebury College in Vermont was initiated solely as a result of a senior seminar in Environmental Studies. Students learned about a specific topic (the college's food purchasing policy) and then applied it to a real world situation (purchasing locally grown foods and educating the college community about sustainable agriculture). Students identified prospective food growers and suppliers and developed profiles of these for display in campus dining centers. (See www.cr.middlebury.edu/es/localfoods/LocalFoods.htm)

External advocates have helped change the college and university foodservice at Yale University. Famed chef Alice Waters is working with one of Yale Universities' dining halls to transform it into a showcase for use of locally grown products and a

platform to educate students about the importance of what they eat (Santora, 2003). Aramark, a contract management company, is the foodservice provider for the university. To address increased food and labor costs, fewer menu items were offered at each meal.

Successful local food projects had been conducted in Iowa in several sectors of the foodservice industry, including schools, hospitals and long term care facilities, and independently owned restaurants. These projects used case studies and mail surveys to gather empirical data among the foodservice decision makers in each group to determine perceived benefits and obstacles to local food purchasing (Strohbehn & Gregoire, 2003; Gregoire and Strohbehn, 2002). Grant support was available to help fund a broker for sourcing of local food products.

Because Iowa's economy is based heavily on agriculture and food processing industries and has a well-earned reputation for the quality of education, we reasoned foodservice directors in this state would be interested in local foods initiatives. While there are fewer numbers of farms in the state, and consequently fewer students being raised on farms or with an awareness of food production, there is still a strong agricultural heritage.

A mail survey was sent in September of 2003 to all college and university foodservice directors at all higher education institutions in Iowa that offered dining services (N=28). After two follow-up efforts, responses were received from 12 of the 28 institutions, for a response rate of 43 %. In two returned surveys, only partial sections of the survey were completed, thus a more realistic response rate of 36% was achieved. The survey consisted of 7 sections: perceived benefits (12 items) and obstacles (16 items) to purchasing of Iowa foods; information about the college or university foodservice;

purchasing policies and procedures; important supplier selection factors (14 items); level of importance students place on various issues (18 items); and attitude statements about food purchasing and local support (22 items). A 5-point Likert type rating scale (5 = Strong benefit or Most Important) or multiple choice options were presented.

Findings indicated high interest and many benefits to purchasing food from local growers and processors. Responses were analyzed using SPSS for Windows (Version 11.0, Chicago, Ill). Means, medians and frequencies were calculated.

Data from this survey, although limited to operations in one state, can provide a picture of “the current thinking” among college and university foodservice administrators about food purchasing practices and policies, their perceptions of student interests on their campuses; and establish a profile of institutional characteristics in an agricultural state. Characteristics of responding institutions are shown in Table 1.

Table 1. Characteristics of responding colleges and universities in Iowa (N = 12).

Characteristic	Value		
Community population	Median = 10,000 (range 1,800 – 120,000)		
Student enrollment	Median – 1,200 (range 525 – 13, 926)		
Private Institution	n = 10		
Contracted managed foodservice	n = 8		
Number of contracts with vendors	yes = 10		
Established policies regarding:			
Payment procedures	yes = 7	no = 3	missing = 2
Food quality	yes = 7	no = 3	missing = 2
Solicitations	yes = 7	no = 3	missing = 2
Selection of supplier	yes = 6	no = 4	missing = 2
Food production practices	yes = 6	no = 4	missing = 2
Supplier approval	yes = 6	no = 4	missing = 2
Campus access	yes = 6	no = 4	missing = 2
Awarding of contracts	yes = 5	no = 5	missing = 2
Procurement methods	yes = 5	no = 5	missing = 2
Delivery procedures	yes = 5	no = 5	missing = 2
Location of food sources	yes = 4	no = 6	missing = 2

The majority of responding colleges were private institutions (n = 10), contract managed (n = 7) and all offered room and board plans to the median enrollment of 1200

students. A median of approximately 2000 meals was served each day during the academic year. A la carte meals and catering services were offered by the majority of the foodservice departments with 4 of the 12 foodservices operating convenience stores. Vending services were operated by 6 of the 12 foodservice operations. Approximately 90% of respondents (n = 9) estimated “from scratch” cooking was used for 75% or more of menu items and that production kitchens were located in each dining hall. Seasonal foods were featured in all of the institutions.

Procurement systems were described in one of three ways. Each kitchen/service center contacted suppliers with orders (n = 5); a prime vendor was contracted with deliveries to each service center (n = 5) or a central purchasing center contracted with vendors and then delivered to service centers (n = 1). Two of the 12 schools participated in a purchasing cooperative while the total number of vendors used to supply food ranged from 4 to 20. Contracts were in place with some of these vendors for a typical period of one year. The maximum number of vendors reported that a foodservice director could reasonably purchase from was either 10 or 15. For most of the reporting institutions, established policies were in place for many purchasing functions, such as selection of supplier, food quality, payment procedures, and solicitation. The extent these policies were reported is somewhat surprising considering that almost all schools were private and thus not bound by state and federal accountability regulations. The existence of such policies is considered best practice and provides guidance to foodservice directors and information to producers or other potential suppliers. Even more surprising was that 6 of the 10 institutions indicated a policy existed with regards to food production practices, and 4 had policies regarding location of food sources. Perhaps because of these policies,

typically it was the director and/or foodservice managers who established contracts with vendors. It was these same individuals who were involved in selection of suppliers as well. However, 7 institutions reported that the contract management company was also involved in selection.

With regards to purchase of local foods, food safety was either the "most important consideration" (n = 7) or "a somewhat major consideration" (n = 4) for all schools responding. Respondents rated the importance of specific factors in selection of a food supplier for college or university foodservices using a 5-point Likert type scale (5 = Very Important). Food safety assurances and certification of food production practices were considered the two most important of the factors listed, with mean ratings of 4.8, respectively. Reputation among other foodservice directors and length of time in business were considered the least important with mean ratings of 3.7. Mean ratings of importance for factors in selection of supplier are shown in Table 2.

Table 2. Mean ratings of importance of factors in selection of supplier.[a]

Selection Factors	Number of respondents	Mean rating
Food safety assurance	10	4.8
Certification of food production practices	9	4.8
Quality of products	10	4.7
Resolving conflicts	10	4.6
Reliability of vendor	10	4.6
Prices	10	4.5

Ease of ordering	10	4.4
Ability to help out in a jam	10	4.4
Delivery schedule	10	4.3
Ability to locate specific items	10	4.1
Relationship with vendor	10	4.1
Package forms and size	10	4.0
Reputation among other directors	10	3.7
Length of time in business	10	3.7

[a] 5 = Very important; 3 = Somewhat Important; 1 = Not Important

While the Middlebury farm to college project in Vermont was initiated by students, it is the opinion of college and university foodservice directors in Iowa that the students would place greater importance on increased menu options, flexible meal plans, food costs and nutritional issues than on production practices of foods, such as organically grown or non-genetically modified. Table 3 shows the assessment made by directors of students' level of importance of 18 food related issues. Directors used a 5-point Likert type scale with 5 = Very Important. A soon to be published survey of college and university foodservice directors in New York with similar food issues will allow for determination of geographical differences.

Table 3. Perceptions of college and university foodservice directors (N = 10) in Iowa of the level of importance issues are to students on their campuses.[a]

Issue	Mean rating
Flexible meal plans	4.6
Increased menu options	4.5
Lower prices	4.1
Low fat options	4.0
Vegetarian options	4.0
Organic food	3.7
Nutritious food choices	3.7
Nutrition information	3.7
Environmental considerations	3.6
Production practices	3.4
Vegan options	3.4
Use of additives/preservatives	3.4
Recycling of waste products	3.3
Fair trade coffee	

[a] 5 = Very important; 3 = Somewhat Important; 1 = Not Important

In the final section, college and university foodservice directors rated their level of agreement with attitude statements that were positively and negatively phrased using a scale from 1 to 5 with 5 = Strongly Agree. It was clear from responses that there is a strong sense of responsibility to help support Iowa farmers (mean rating of 4.1) and help

the economy (mean rating of 4.4). Respondents indicated a willingness to ask suppliers to source locally (mean rating of 3.9) with the caveat that dealing with more vendors is a concern (mean rating of 4.0) as was a willingness to pay more for local foods (mean rating of 2.3). Payment procedures were also cited as a concern for directors (mean rating of 3.6). However, respondents did note that if students requested locally grown foods, these would likely be served (mean rating of 3.2). Respondents also noted that payment procedures of the institution may be a concern for local purchases (mean rating of 3.6). In addition, the lack of year round availability (mean rating of 3.7) and readily available, dependable sources of locally grown foods (mean rating of 2.9) were also concerns. Respondents disagreed that imported produce is safer (mean rating of 1.8) and that is not the responsibility of colleges and universities to help keep local farmers in business (mean rating of 1.9). There seemed to be some confusion with regards to institutional and state regulations allowing purchase of locally grown foods (mean ratings of 3.6 and 3.5, respectively). Package materials were less of a concern (mean rating of 2.7). These findings mirror those found in previous assessments of foodservice directors in other sectors of the industry in Iowa (Strohbehn & Gregoire, 2003; Gregoire & Strohbehn, 2002) and of the study in Oklahoma (Sanders& Ancev, 2003).

CONCLUSIONS AND APPLICATIONS

Qualitative projects and quantitative research has concluded certain factors are critical for successful food supply chains to operate. These are based on trust, mutual understanding and satisfaction. In order for foodservice buyers in all sectors of the industry to work successfully with local food producers, certain factors such as consistent high quality; assurances of a safe food product; adequate and consistent supply;

competitive pricing (more for institutional markets); ease of ordering, delivery and payment procedures; standard size packages; and supply dependability are all important. Consistent messages from buyers in all sectors about benefits and willingness to work with local producers indicate that foodservices are a very feasible new market for producers to consider, yet time issues for the director or buyer have to be addressed. College and university foodservice directors across the country, and in Iowa, appear willing to support their local economies and respond to student requests for specific foods, if safe and nutritious foods can be served.

Strategies to overcome identified obstacles and ensure an efficient and effective food supply chain include formation of cooperatives by producers and foodservice buyers to streamline ordering, receiving and payment processes. Promoting when local foods are used (on printed menus, web sites or table tents) can result in good public relations for the institution and increased student awareness about food sources and production practices. Institutions can adopt policies that encourage purchases from local sources.

Buyers need to know what and when products are available and want assurances about food safety. Multiple responsibilities for the foodservice buyer are common so producers need to understand the many demands they face and regulations of compliance. Producers need to avoid time and temperature abuse of items and instruct employees handling products to use good hygiene. Packages materials need to protect the integrity of the food. In addition, producers need to ensure food safety practices before, during and after harvest are adhered to (See http://postharvest.ucdavis.edu; http://www.gaps.cornell.edu ; http://www.extension.iastate.edu/hrim/localfoods

While successful projects often have received support from grants or other in-kind aid, there are low and no-cost action steps that can be implemented for non-funded projects. Recognition of the buyer-seller needs and strengths by both parties is critical to establishment of successful long-term relationships based on mutual satisfaction of objectives.

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