



SUSTAINABLE FOOD SYSTEMS AT URBAN PUBLIC UNIVERSITIES: A SURVEY OF U-21 UNIVERSITIES

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ABSTRACT: *Urban communities are challenged by the conventional food system in diverse ways. To mitigate these challenges, a growing sustainable food system (SFS) movement mobilizes existing resources—including public institutions—to resolve disparities in access to healthy food, increase economic opportunities, conserve natural resources, and build a stronger, more local food system. Many public universities located in inner cities have adopted missions committing themselves to the improvement of their cities and regions. They also perform anchoring roles to revitalize their immediate neighborhoods, and, in a contemporary extension of their civic purposes, embrace sustainability as an institutional goal. Urban public universities therefore can play many SFS leadership roles, including through links to innovative scholarship, campus dining halls, other food retail such as farmers markets, and civic engagement activities such as community gardens. Through a study of 21 urban public universities, this paper investigates the presence and characteristics of SFS leadership, underlying rationales, and factors that support and oppose leadership.*

The conventional food system presents urban communities with a double-edged sword. It contributes to the local economy in jobs and sales and makes affordable foods abundant. Nonetheless, it also creates disparities in access to affordably priced healthy and fresh foods in impoverished neighborhoods and those of color, leading to obesity and diet-related illnesses at rates higher than national averages. Jobs in urban food retail tend to hover around the minimum wage with few benefits or upward mobility. Finally, as metropolitan grocery chain stores rely on global supply chains, farms everywhere are increasingly vulnerable as they compete with counterparts from lower wage and less regulated contexts.

Contemporary social movements around alternative, more sustainable food systems (SFS) are seeking to respond to these and other challenges posed by the conventional food system. SFS aim to build stronger regional linkages to sectors within the food system and between the food system and communities in order to promote public health outcomes, revitalize local economies, repair ecological systems, and foster social justice and equity. A growing “food justice” stream within this movement—with increasing student participation—seeks to eliminate disparities within the food system through healthy food access in underserved communities, with emphasis on communities of color; support small-scale food and farm enterprises locally and globally; and demand living wages and better working conditions for food workers.

Motivated by the movement’s goals and emerging opportunities, grassroots and nonprofit groups in inner-city communities are putting in place initiatives related to urban agriculture and

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value-added operations, farmers markets, local purchasing by restaurants and stores, and farm-to-school linkages. They are working with schools, colleges, and hospitals to redirect the institutions' substantial spending on food to benefit the region's agricultural economy and support local food enterprises. These efforts sometimes involve university faculty in collaborative activities and offer students volunteer or service learning opportunities.

Public universities in the United States are chartered with explicit and implicit place-related responsibilities. Over the last few decades, public universities located in inner cities have articulated urban missions to respond to the needs of their often decaying and disinvested communities, and to reduce social disparities and foster equity. They also play "anchor" functions related to community and economic development, human and social capital enhancement, and physical improvement of their neighborhoods, while simultaneously creating value for the institution. Additionally, some urban universities have formally adopted a commitment to sustainable development through participation in one or more conventions related to sustainability, such as the Talloires Declaration (University Leaders for a Sustainable Future, n.d.), and the American College and University Presidents Climate Commitment¹ (ACUPCC, a group active since 2007).

Given universities' civic missions, anchor strategies, and the significant potential mutual benefits to be had from links to local food movement activities, how prevalent are SFS initiatives within urban universities? Where are they located, and what forms do they take? To what extent and in what ways are they integrated with the core functions of a public university: teaching, research, community engagement, and campus operations? Given many universities' embrace of sustainability goals, what SFS linkages exist, if any? What factors facilitate such initiatives and what challenges do they face? These questions are addressed through an exploratory study of a group of 21 urban universities referred to here as the *U-21*. This article's premise springs from (a) the complementary nature of the values and place-related missions of public higher education institutions in inner cities and the sustainable food movement, and (b) the practical impact that such anchor institutions could have on the development of SFS.²

The rest of the article is organized as follows. The first section briefly discusses the research to date on university leadership in SFS and possible connections to SFS through its civic, anchor, and sustainability commitments; the next section describes the study's rationales and methods; and the third and final section discusses findings and their implications.

UNIVERSITY COMMITMENTS TO ENGAGED LEARNING, LOCALITIES, SUSTAINABILITY, AND FOOD SYSTEMS

Urban universities are in a good position to provide leadership in sustainable food systems in at least three ways: as civic institutions with a responsibility to prepare students and others for democratic and just social processes; as tools for local area development; and as beachheads for sustainable development given large ecological footprints as well as capacity for creating and disseminating innovations. However, as the following discussion attests, no rationale is entirely unproblematic in the present time.

Universities serve functions besides training young people for future employment, helping them develop their potential, and replicating society and culture; they also have roles in transforming society and creating more just arrangements (Bowen, 1997; Boyer, 1996; Orr, 1991; White, 2000), including within their own neighborhoods (Reardon, 2000). Defenders of the latter vision argue for a view of higher education both as a public good and an autonomous arena for the development of critical, productive, and democratically inclined citizens. Fearing that higher education was increasingly becoming a private benefit rather than a public good, in 1996 Boyer called for a robust scholarship of engagement, in which the academy "must become a more vigorous partner in the search for answers to our most pressing social, civic, economic, and moral problems" (p. 17). He warned that "our great universities simply cannot afford to remain islands of affluence, self-importance, and horticultural beauty in seas of squalor, violence and despair" (p. 32).

This call has been echoed from many directions (Boyer and Hollander, 1999; Carnegie Foundation for the Advancement of Teaching and CIRCLE, 2006; Colby, Beaumont, Ehrlich, & Campbell,

2007). In its recent statement *A Crucible Moment*, the National Task Force on Civic Learning and Democratic Engagement asserts that “full civic literacies cannot be garnered only by studying books; democratic knowledge and capabilities also are honed through hands-on, face-to-face, active engagement in the midst of differing perspectives about how to address common problems that affect the wellbeing of the nation and the world” (2012, p. 3). It further calls on educators and public leaders to advance a twenty-first-century vision of college learning that goes beyond community service to foster democratic engagement with others across differences to collectively solve public problems, develop reciprocal partnerships, and analyze systemic causes of a given issue. Ostrander (2004) identifies some ingredients for cultivating campuses dedicated to civic engagement, including new organizational structures, faculty involvement, and a better understanding of local community conditions. However, as an in-depth study of one urban campus shows, conflicts abound on civic engagement as an institutional priority and require critical leadership to overcome them (United States Department of Housing and Urban Development, 2002).

Another rationale related to urban institutions’ civic responsibilities to their immediate neighborhood relates to the community development, service, and anchoring roles urban public universities can and do play (Perry & Wiewel, 2005; Rodin, 2007; Rubin, 1998). Universities and health care facilities provide and purchase products or services, develop real estate, employ large numbers, engage in workforce development, anchor economic clusters, and build community infrastructure, often mixing profit-making and nonprofit missions (Initiative for a Competitive Inner City [ICIC], 2010, 2011). The Coalition of Urban Serving Institutions (2010) similarly reports that urban universities are engaged in partnerships with public schools, community and economic development agencies, public health and other institutions related to public safety, transportation, sustainability, beautification, and new technology. Rather than conceptualize these contributions simply from a charitable or social responsibility framework or purely from a self-interested perspective (i.e., creating a pipeline for talented local high school graduates, reducing crime, attracting real estate investments that benefit university members, etc.), universities are urged to see the dynamic value they create both for themselves as well as the surrounding communities in a self-sustaining virtuous cycle (ICIC, 2011). The food system has hooks in all categories named above: in wholesale and retail products and services to be purchased by the institution, in its consumption of land for production or retail, in the development of neighborhood-based food enterprises, and in equity-oriented relationships with the community.

Campus sustainability initiatives inherently draw on the civic responsibility of public universities in order to confront challenges facing local communities and the world. Sustainable development is commonly understood as an approach to meeting the needs of the present without compromising the ability of future generations to meet their own needs (World Commission on Environment and Development [WCED], 1987). Sustainability embraces the triple bottom lines of economic vitality, social equity, and ecological integrity.³ Beginning with the Stockholm Declaration of 1972, there has been a steady stream of national and international sustainability declarations relevant to higher education (see Wright, n.d.). A key moment in framing university roles related to sustainability came in 1990 when university presidents from across the globe agreed that “Universities educate most of the people who develop and manage society’s institutions. For this reason, universities bear profound responsibilities to increase the awareness, knowledge, technologies, and tools to create an environmentally sustainable future” (University Leaders for a Sustainable Future [ULSF], n.d., para. 2).

Additionally, the leaders called for higher education institutions to model environmentally responsible behavior in their daily activities. “By practicing what it preaches, the university can both engage students in understanding the institutional metabolism of materials and activities, and have them actively participate to minimize pollution and waste” (ULSF, n.d. para. 3). The resulting Talloires Declaration included actions aimed at increasing awareness of environmentally sustainable development, creating an institutional culture of sustainability, involving stakeholders, educating for environmentally responsible citizenship, collaborating for interdisciplinary approaches, practicing institutional ecology, and broadening service and outreach nationally and internationally.

Experiences with campus sustainability offer many models of practice and lessons (Lidgren, Rodhe, & Huisingh, 2006; Moore, 2005).

Campuses, however, face many barriers to effectively implementing sustainability actions (Gudz, 2004) and rarely take a “whole-of-university” integrated approach to sustainability (McMillin & Dyball, 2009). Noting this, Bosselman (2001) cautions that “a sustainable university needs an open and transparent administration, capable of supporting the necessary changes. At present, administrative structures are not only alien to students, but to some extent, to staff also. They seem to be concerned with the efficient use of resources only, rather than with the needs of the university as a whole” (pp. 174–175). Inner city campus settings potentially offer rich possibilities for emphasizing social equity principles in implementing sustainability. For example, in addition to sourcing local foods produced and transported with minimal ecological impacts, sustainable food system commitments may include purchasing from small-scale and minority producers, supporting living wages and working conditions for food workers, and sponsoring research and engagement on related topics.

Universities and colleges are hardly strangers to SFS activities, although research on the topic is relatively thin. As of September 2012, the Farm to College website⁴ lists 167 such programs with varying degrees of involvement, while the Real Food Challenge⁵ claims that more than 300 institutions have college farms, fair trade initiatives, or farm-to-cafeteria programs, and Slow Food USA lists 26 campus chapters.⁶ Among 100 universities with the largest endowments, Calder and Dautremont-Smith (2009, p. 96) report sustainability gains to be strongest in the “food systems and recycling” category. Included in the category are local food purchase, availability of vegan and fair trade options, trayless dining, composting and recycling, and campus community gardens. Seventy percent of these schools committed a portion of their food budgets to purchasing from local farms and/or producers. A more recent version of the report they cite shows 70 universities out of 87 based in large North American cities earned a grade of B or better in this category (College Sustainability Report Card, 2011).

Some SFS initiatives are demanded by students or led by campus administrators or faculty members; others are designed by community-based nonprofits or businesses representing producers who wish to access the markets represented by the institutions; yet others by food service units or contractors. There is also extensive Internet-based evidence of student activism, through such campus groups as the Student/Farm Worker Alliance, related to the struggles of food and farm workers such as the Coalition of Immokalee Workers (CIW), which, among other things, pressures food retail chains to take steps to improve wages and working conditions for predominantly undocumented immigrant farm workers in tomato production.

Research on university-based SFS activities typically presents single case studies (e.g., Brunetti, 2002; Friedmann, 2007; Parr, Trexler, Khanna, & Battisti, 2007; Perez & Allen, 2007; Pothukuchi, 2012; Valen, 1992), with some notable exceptions. For example, in a survey of 14 college and university food service directors in Iowa, Strohben and Gregoire (2004) found support for purchasing from local sources, primarily to support regional economies, provide fresher and higher quality food, and foster good public relations, among other benefits. Obstacles identified included adequacy, seasonality, and reliability of supply; cost; the effort and delays involved in dealing with more vendors; and getting approval for new suppliers. In an earlier study, Johnson and Stevenson (1998) observed that a focus on profitability, efficiency, and national supply contracts precludes food service operations from considering local food purchasing; they further assert that prospects for local procurement seem better with small, private colleges than with larger, state-supported institutions.

In a more recent survey of university SFS projects in 30 campuses considered to be innovators in the field, Peggy Barlett (2011) found that nearly half had related purchasing goals and guidelines, two-thirds had academic courses or programs related to SFS, and more than four out of five had experiential learning projects related to campus farms or community gardens. Her sample was evenly split among small liberal arts colleges, medium-sized universities, and large universities, and included both private and public institutions. Citing anonymity due to the intensely political nature of food service issues on some campuses, she named only 28 of the 30 studied; of these 15 are private institutions and only two are in the top 50 cities by 2010 population.

Barlett details four components of campus SFS projects (2011, p. 113): dining-service innovations in procurement, menus, and kitchen operations; academic and co-curricular programs, including courses, concentrations, and internships; direct marketing opportunities, including farmers markets and community-supported agriculture (CSA); and hands-on experiences in community gardens and campus farms. She finds that most institutions begin with one or two of the above components; developing all four is relatively rare even in this SFS-innovator category. Nonetheless, she worries about the durability and resilience of SFS innovations on campus, due to their reliance on energetic champions, the risks of early adoption, dependence on outside funding, and the real challenges involved in developing sustainable alternatives to a complex and powerful global food system.

Given that public universities everywhere in the United States are hunkering down to more narrowly defined core functions in response to neoliberal fiscal and political imperatives, a broad and integrated approach to SFS likely will be elusive in the present study as well, despite its rhetorical and practical benefits to both town and gown. One may also expect that a focus on SFS, where available, may emerge more from perspectives of cost reduction rather than from broader civic concerns including eliminating social disparities and building a regional food system resilient to global climate and energy shocks. Furthermore, campus food projects can also be greenwashed or co-opted, given the competitive pressures that dining services face; expectedly, cost-saving measures will gain priority over other measures.

THE STUDY

This exploratory study inquires into the presence and nature of SFS activities in 21 urban public universities, listed in Table 1. It explores the institutional context and content of the initiatives, including actors and their rationales, links to core functions of the university and to sustainability commitments, and factors supporting and challenging initiatives. We selected this group following a review of a number of existing lists online, many of which are referred to, informally, as *U-21*, even if the membership usually varies from list to list by one or two entries.⁷ The chosen list is based on the Great Cities' Universities group of 19 universities which itself was expanded from the original Urban 13 informal association formed in the 1980s to share research and pursue urban policy advocacy on common interests.^{8,9} To this list of 19, we added two others that have appeared in lists urban universities¹⁰ have assembled to compare themselves with their peers: the University of Pittsburgh and the University of Toledo. (We do not list Florida A&M, because it is an agricultural school, organized around traditional agricultural fields of study.¹¹) While this "sample" may seem arbitrary—after all, little is known about the rationales for the Great Cities' Universities' assembly in the first place—and many other ways of organizing such a list are possible, we chose to stick with a group that would be recognizable to participating universities as a gathering of peers. Given the exploratory nature of the study, we also wanted to start with a manageable list of campuses.

U-21 is comprised of public universities of roughly similar size, makeup, research commitments, and economic impact which are located in inner cities in the United States. They are primarily nonresidential universities, in that typically fewer than 25 percent of their students live on campus. Members are all classified as Carnegie Research Universities, with high (12 universities) or very high (9 universities) activity. They are among the larger employers in their cities and also create significant economic impact through their spending. U-21s identify a commitment to their city and are engaged in public-private partnerships to address issues related to education, transportation, health care, workforce development, neighborhood redevelopment, and economic stimulation. Fourteen of the 21 campuses are in the top 50 cities by 2010 population, compared with 19 in 1990.

METHODS

To begin, we searched official university web pages for key words—including in varying forms and combinations—related to sustainability, agriculture, food systems, gardens, urban agriculture, dining, and farmers markets, and identified courses, co-curricular activities, engagement projects,

TABLE 1
SFS Leadership in U-21 Campuses

Urban 21 universities	Location	SFS curriculum ^a	Food gardens	Food gardens (community)	Farmers market/other retail	Dining operations ^b	Other notes
City College of New York (CCNY)	New York, NY					Some local sourcing; adopted local produce (150 miles) sourcing policy	One-off farmers market events organized by CCNY Green
Cleveland State University (CSU)*	Cleveland, OH				North Union Farmers Market runs an "Earth to U" market on campus FIU Organic Farmers Market		
Florida International University (FIU)*	Miami, FL	Agro-ecology certificate in the School of Environment, Arts, and Society	FIU Organic "People's Garden"				
Georgia State University	Atlanta, GA						
Indiana University-Purdue Indianapolis (IUPUI)	Indianapolis, IN		DIGS Gardens (Developing IUPUI Gardens Sustainably)			Links to campus gardens, other local/sustainable sourcing	
Portland State University (PSU)*	Portland, OR	Several campus-wide senior capstone courses on SFS themes (including with the Learning Garden Lab)	Residence Hall Association Garden	Learning Garden Lab	Portland Farmers Market runs Saturday market on campus	Some local sourcing	Students run the Food for Thought Café on campus
Temple University*	Philadelphia, PA	Undergraduate minor in SFS (Ambler Campus)	Temple Community Gardens	Temple Community Gardens; Philadelphia Urban Creators	The Food Trust runs a farmers market on campus		
University of Alabama	Birmingham, AL						

Continued

TABLE 1

Continued

Urban 21 universities	Location	SFS curriculum ^a	Food gardens	Food gardens (community) market/other retail	Dining operations ^b	Other notes
University of Houston*	Houston, TX		Campus Community Garden as part of CLASP			CLASP offers activities in gardening, composting, urban harvest classes, a discussion group, and community partnerships
University of Illinois, Chicago*	Chicago, IL					Hull House Museum's Kitchen Project offers SFS educational activities (museum is located in College of Architecture and Arts)
University of Cincinnati*	Cincinnati, OH	Major, minor in horticulture; certificate in urban agriculture	Soiled Hands Learning Garden			Center for Community Design is involved in SFS community collaborations
University of Massachusetts at Boston	Boston, MA	Urban landscape and garden development certificate				A student-dining services collaboration rescues food for hunger relief
University of Memphis*	Memphis, TN		Tigers Initiative for Gardening in Urban Settings—4 locations			Green fees helped pay 5 students in 2012; students eligible for course credit
University of Missouri-Kansas City*	Kansas City, MO		UMKC Community Garden Collective			2009 cross-campus student project helped establish South Memphis Farmers Market
University of Missouri-St. Louis*	St. Louis, MO		UMSL Community Garden at Technology & Learning Center			
University of New Orleans	New Orleans, LA					Links to campus garden; serves cage-free eggs

Continued

TABLE 1

Continued

Urban 21 universities	Location	SFS curriculum ^a	Food gardens	Food gardens (community)	Farmers market/other retail	Dining operations ^b	Other notes
University of Pittsburgh	Pittsburgh, PA		Plant to Plate garden		Oakland Farmers Market, operated by Oakland Ave. Business Association near campus Farms to Pitt—a CSA-type operation run by a private vendor—6 drop off sites		Farms to Pitt initiative is publicized on the university's wellness website.
University of Toledo*	Toledo, OH		Outdoor Classroom Garden				Garden linked to 16 courses on campus
University of Wisconsin—Milwaukee	Milwaukee, WI		Sandburg Rooftop Garden; Sustainable Gardens			Locally sourced milk (100%); produce (29%); other local sourcing 28% of "food substances" sourced from farms within 200-mile radius	
Virginia Commonwealth University*	Richmond, VA						
Wayne State University (WSU)	Detroit, MI		3 campus gardens	SEED Wayne helped build a 4,000 sq. ft. hoophouse at Earthworks Urban Farm SW sponsors healthy corner store project	SEED Wayne, a university program, runs 22-week WSU Farmers Market	Links to campus gardens. Food service contractor AVI participates in Source Detroit; other local sources	

Notes: Activities are included only if at least two iterations of a seasonal or academic-cycle activity were documented by the end of July 2012. CLASP = Community Learning Agricultural Sustainability Program; ACUPCC = American College and University Presidents' Climate Commitment.
^aThe university is an ACUPCC signatory.
^bMention is made of only those universities in which SFS curricula are offered for an undergraduate major/minor; a degree, a certificate, or a campus-wide capstone course.
 Dining hall programs with composting or other resource efficiency programs are not included in this table (e.g., trayless dining, compostable dining ware, meatless Mondays, etc.)
 CSA = Community Supported Agriculture.

operations, and people and units associated with the activities. These were supplemented by searches of social media such as Facebook, aerial maps on browsers, and community/public media for groups and projects identified in the initial search. Finally, we talked to at least one informant at each university—for a total of 43—to confirm preliminary findings and obtain new information and qualitative responses to study questions, with more informants at universities with greater density and diversity of activities. Informants included administrators of sustainability or community engagement programs; faculty members who led curricula or partnered in specific engagement activities; students who led SFS co-curricular activities, campus or community gardens, campus retail activities; and representatives of dining services operations or contractors.

Universities with a specialized SFS curriculum, related engagement or service learning projects on or off campus, informal SFS educational activities, sustainable dining activities, farmers markets or other alternative forms of retail, campus chapters of groups such as Slow Food¹² or Campus Kitchens,¹³ or other examples of institutional or student leadership in SFS were selected for in-depth study. When programs were offered with the help of community partners, such as, for example, a campus farmers market or horticultural project, details of the partnerships including roles and resources were also obtained, including through interviews with market managers. Interviews consisted mostly of open-ended questions to understand SFS initiatives in the context of university functions and the challenges they faced. Attempts were made to reach all individuals identified with particular activities, but some respondents failed to respond despite multiple attempts to contact them.

Student leaders and their roles in SFS activities were emphasized throughout even when they were not our primary respondents in some places. Notes from phone interviews, including with six students, and countless media reports of activities (which included interviews with leaders) and related documents, were analyzed.¹⁴ SFS engagement activities are included in the study (see Table 1) *only* if they provided evidence of continuity across *at least two* academic calendars or growing seasons as of July 30, 2012, our cutoff date. The 2-year criterion was identified as a safeguard against including one-off efforts organized as class projects or by energetic student organizers who were unable to sustain activities beyond an initial year.¹⁵ Sporadic or charitable efforts such as food donation drives or student groups volunteering at a soup kitchen, a nearby farmers market, or at a community garden build that was led by a community organization, were excluded from consideration given the article's emphasis on sustainability *leadership* by campus members. Also, efforts exclusively focused on efficiency and cost savings (such as those that save water or reduce waste in dining halls) without linkage to a broader sustainability approach, were also given less attention.

FINDINGS: URBAN MISSIONS AND SFS LEADERSHIP

All U-21 universities uphold as part of their missions core activities of teaching and learning, knowledge production and innovation, and creative endeavor. They also define to a greater or lesser degree of specificity the geography of their constituent base as well as impact, identifying a special responsibility to the inner city and metropolitan region in which they are located.¹⁶ Although mission and goal statements are at varying levels of detail, most affirm a commitment to diversity and access to educational opportunity, with a few institutions identifying specific targeted population groups: low-income, women, racial and ethnic minorities, first-generation college attendees, recent immigrants or their children, or part-time students. Virginia Commonwealth's mission is noteworthy in that it includes a commitment to "addressing disparities wherever they exist." Some institutions also identify goals related to the improvement of urban quality of life and the resolution of pressing urban problems, and the ability to contribute specifically to urban economic development, stronger K-12 education, and, in four cases, sustainable development. University of Illinois–Chicago has the most detailed listing of topical areas, but it excludes food systems. Portland State's statement about community engagement (PSU, n.d.) is striking for its articulation of mutuality:

PSU values its identity as an engaged university that promotes a reciprocal relationship between the community and the University in which knowledge serves the city and the city contributes to the knowledge of the University. . . . We embrace our role as a responsible citizen of the city, the

state, the region, and the global community and foster actions, programs, and scholarship that will lead to a sustainable future.

Twelve universities are ACUPCC signatories, although fewer have sustainability offices or paid coordinators.¹⁷ Therefore, given U-21s' goals and actual involvement in their communities, as well as the growth of community food movements in these urban areas, one might expect to find at least the beginnings of (a) such SFS-related academic and engagement activities and (b) an awakening university SFS leadership, spurred by its own institutional commitments. These expectations are partially borne out in the study, as discussed in the following paragraphs.

In general, although sporadic smaller scale SFS activities of interest do exist in a majority of U-21, little evidence exists of a comprehensive and integrated approach to campus SFS that combines academic activities with dining operations–related initiatives, retail activities such as farmers markets or CSA, or student- or institution-led community engagement activities such as community gardens (see Table 1). Nine universities—Florida International, Portland State, Indiana University–Purdue University at Indianapolis (IUPUI), Temple University, University of Cincinnati, University of Pittsburgh (Pitt), University of Toledo, University of Wisconsin–Milwaukee (UW–Milwaukee), and Wayne State—have activities addressing at least two elements of the four main categories identified previously, with at least two seasons/academic calendars observed by July 2012, the cutoff date adopted for our documentation.

Campuses vary greatly in the existence and intensity of SFS linkages to curricular, engagement, and operational components of the university. For example, at the high end of number of types and intensity of linkages and their integration with academics is Florida International, whose agro-ecology certificate program was founded in 2007 with the help of a 5-year U.S. Department of Agriculture grant. The grant included the development of an organic garden operated collaboratively by faculty and students; soon thereafter, a student-led mini–farmers market was established based on this initial infrastructure. Linkages between courses and SFS community engagement also exist.¹⁸ At the other end of the spectrum, where several activities of interest coexist but without much involvement of the institution or linkage to academics or even to each other, lies the University of Pittsburgh (Pitt). Simply, but not trivially from an economic development perspective, Pitt allows outreach by a private, local vendor who runs the farm subscription and delivery *Farms to Pitt* program, as well as to a farmers market run by a community-based organization on city parks property nearby; little ongoing faculty or student engagement (curricular or extracurricular), or significant resource contribution by campus units in their operations, was documented. Indeed, this “hands-off” approach was lauded by the Farms to Pitt vendor, David Eson, “just giving access and staying out of the way is the most important thing a large institution can do. Access is never given away freely and the university represents a huge market for local farmers.” A garden, Plant to Plate, led by students supported partially with university funds, was also documented at Pitt.

Florida International University (FIU), Portland State University (PSU), and Wayne State University (WSU) showcase related faculty and student leadership and collaboration across campus units and connections to the institution's functions. For example, FIU's integration of SFS academic, engagement, and operations activities on campus and in the community may be credited almost entirely to their agro-ecology certificate program in the School of Environments, Arts, and Society; curricular links exist to almost all engagement activities, including the campus garden, the student-led farmers market, and community partnerships in which students and faculty collaborate. PSU's Leadership for Sustainability Education Graduate Program offers cross-campus capstone courses linked to sustainable food systems and urban agriculture, with engagement opportunities at the Learning Gardens Lab (Burns & Miller, 2012); courses on SFS topics are also taught in the urban planning program. Student-led engagement activities at PSU include the Food for Thought Café, the Food Action Collective, and the Residence Hall Association which allots garden plots and helps coordinate gardens on campus intended primarily for the use of resident students. Similarly, at WSU, SFS academic, operations, and campus and community engagement activities are integrated within a program called SEED Wayne, to offer campus community gardens, a 22-week farmers market,

a healthy corner store initiative with related nutrition education and outreach, a variety of service learning projects through the Cities and Food course, and other activities.¹⁹

Both PSU and WSU also have some local sourcing and other SFS components in their dining services even as they are engaged in efforts to expand these. WSU's food service contractor, AVI Foodsystems Inc., participates in the Source Detroit initiative and works with an independent local distributor, through which it sources foods from locally based producers.²⁰ Although PSU had developed a sustainable food purchase policy and related goals in 2007 and some progress was documented subsequently, the Office of Campus Sustainability is only now starting to institutionalize these sustainability goals through contracts and other accountability mechanisms.²¹ The office also plays an outreach and connection function for the gardens and other activities initiated by student groups.

Of the two universities, Portland State offers a better resourced institutional environment for sustainability activities in general and SFS activities in particular (although even here SFS gains are not without their challenges, as discussed later in the article). For example, PSU has several units related to sustainability, in addition to the one in charge of implementing the institution's ACUPCC mandate. These include the Institute for Sustainable Solutions and, in their business school, the Center for Global Leadership on Sustainability. Both campuses also benefit from an active grassroots SFS movement in their respective metros, although Portland has put into place more municipal policies and actions advancing SFS goals than has the city of Detroit. Although all three universities' food-related programs link explicitly to their respective institution's broader urban mission, they are born out of faculty or student initiative and rely crucially on informal networks. Indeed, respondents at several universities express ambivalence about the extent to which the institutional mission serves to guide the everyday decisions of campus administration, especially if respondents experienced denial or withdrawal of support for their SFS activity.

As of July 2012, thirteen campuses of U-21 had at least one community garden led by students or staff over *two or more* seasons, with WSU, UW-Milwaukee, IUPUI, and University of Memphis showing multiple campus locations, the first three linked to their respective dining halls at varying levels. At UW-Milwaukee a rooftop garden at Sandburg Residence Hall, maintained by the university's restaurant operations, produced enough potatoes to serve a side dish in 4,000 meals in 2012. Students were engaged in initiating and maintaining community gardens off-campus with related outreach to neighborhood groups at Wayne State and Temple University, with the latter having at least two such student groups—the Temple Community Garden and the Philadelphia Urban Creators. Gardens involve students and others in large or small numbers and varying levels of intensity, depending on the size and complexity of operations, presence of paid staff, and type of activity. A handful had links to classroom activities; for example, University of Toledo lists at least 16 courses related to the garden, including those related to environmental sciences, recreation, engineering, and gender studies. At University of Missouri–St. Louis, the garden was developed by staff in one unit as a form of personal expression and an informal social network.

Five universities also showed evidence of farmers markets on or near campus that were season-long (as opposed to those organized as one-off events): Cleveland State, Portland State, Temple, Pitt, and Wayne State. Only at the last, however, is the farmers market a program of the university, led by SEED Wayne. The farmers market on PSU's campus is operated by Portland Farmers Market, which pays the university for costs associated with maintenance of restroom facilities at the Student Center which are made available to market customers. At Temple and Cleveland State, community organizations operate the farmers market in part with financial support from the university. The Oakland Farmers Market in Pittsburgh is operated by the Oakland Avenue Business District, in partnership with the city's parks department, University of Pittsburgh Medical Center, and Pitt. Pitt's Health and Wellness office offers outreach related to the Farms to Pitt subscription program, which drops off boxes at six points throughout the university. Relatedly, the Urban Affairs Center of the University of Toledo offers its parking lot for members to pick up their shares from the Riehm Farm CSA. The Byrd House farmers market located near the campus of Virginia Commonwealth University (VCU) has no institutional connection to the university. However, the market benefits from university members' patronage, and, in turn, offers a subsidized box for \$10 to students who show

ID. Although a side note in this category, worth mentioning is the Renaissance Farmers Market in south Memphis, an off-campus farmers market that came about thanks to a service learning planning project implemented by a cross-campus group of University of Memphis students in partnership with community organizations.^{22,23}

Only a handful of institutions showed no web-based evidence at all of an SFS-related academic, dining, or engagement activity—these also challenged us greatly in obtaining responses to research queries—although we documented a couple of projects that came on line after the cutoff date adopted for this study.²⁴ No university in our list has a campus chapter of Slow Food, although, at a couple of universities, there is evidence of discussion groups and special events that were held in partnership with the organization.

SFS-specific curricula also were rare, present only at three universities—Florida International, PSU, and University of Cincinnati. Temple's Community and Regional Planning program (which is located at the Ambler campus, rather than the inner-city one being studied) offers a minor in community food studies; Florida International's agro-ecology certificate program was discussed previously. Additionally, University of Cincinnati offers both a major and minor in horticulture studies as well as a certificate in urban agriculture, and the University of Massachusetts at Boston offers an online certificate in landscape/community garden development. An exhaustive inventory of SFS-related courses was impossible to obtain given the great diversity of ways to organize such a course, possible titles, and campus units in which they may be offered.

In six U-21 campuses, sustainability offices were involved in SFS, although they tended to play minor and supportive rather than initiating roles. Priorities for these units tended to be energy and resource efficiency, where real monetary savings for the university are to be had; their SFS roles tended to be limited to providing information, connecting students to activities, and coordination only at modest levels. Dining services' sustainability activities in U-21 also tend to be predominantly focused around energy and resource conservation through, for example, trayless dining (to prevent waste and conserve water), recycling and composting food wastes (with composts benefiting campus gardens where relationships existed), and meatless Mondays, with six specifying local sourcing defined as in-state or within a 100- or 200-mile radius, typically of produce, meat, and dairy. For example, UW-Milwaukee claimed to source all milk and most of its cheese from within the state; PSU and Temple, all dairy from within the state; and Virginia Commonwealth claimed that 28% of its raw materials are sourced from within 200 miles. Few informants could verify these claims, as contracts with dining services providers rarely insist on such information-sharing.

Community links to SFS activities also exist and were noticed in both curricular as well as extracurricular activities, with several linkages already mentioned in the article. The Learning Gardens Lab at PSU is a notable example of a campus–community partnership involving the school district, county extension, and a particular school. SEED Wayne's (Wayne State) partnerships are reflected in all activities, including the "Cities and Food" class, in which term projects are designed with the help of community food leaders. The class also features a seminar series in which 10–12 community-based food experts lecture on a variety of SFS topics.²⁵ Other examples of partnerships include those between CLASP (Community Learning and Agricultural Sustainability Program) at University of Houston, and Urban Harvest, which offers urban agriculture workshops at the university; the Community Design Center at the University of Cincinnati and the Findlay Market Farm; and UW-Milwaukee and Growing Power, a nationally renowned SFS organization in Milwaukee.

RATIONALES FOR SFS LEADERSHIP, FACILITATING FACTORS AND CHALLENGES

Expectedly, students and faculty tend to drive the creation and ongoing implementation of SFS projects on campus and in the community, although some level of institutional blessing and active support has to exist in order to sustain efforts over time. Connections to courses, community engagement offices, and campus sustainability offices were also documented. Student SFS leadership tends to focus mostly though not exclusively on community gardens and informal education through seminars, discussion groups, and workshops outside of existing curricular structures. At PSU and Florida International, student-led projects span food system–related education, community

engagement activities, and food retail/service. At Wayne State, student leadership both on campus and off manifests in different ways supported by SEED Wayne, with some activities such as the healthy corner stores project subsequently adopted as a program activity and supported by external funding.

For universities with SFS activities, substantive rationales for SFS leadership among those interviewed—at least as they were articulated—were varied and many. These fall into five major, albeit overlapping, categories related to food, and one related to the university’s social and civic purposes:

1. Local food system and related economic development, including themes related to increasing regional food self-reliance; supporting producers and revitalizing rural communities; and capturing multiplier effects from support for local businesses.
2. Public health, including increasing the availability of fresh/healthy food in campus and neighborhood settings, increasing the adoption of healthier diets, and encouraging agricultural production practices that use fewer petrochemical based inputs.
3. Community and food equity goals, including eliminating disparities in access to healthy food and entrepreneurship opportunities, supporting smaller scale agri-food businesses, and raising awareness of social inequalities in the food system.
4. Food systems as a link to broader sustainability issues, including responding to global shocks related to climate and energy, reducing food miles, and conserving natural resources and habitats.
5. Links to the university’s mission, including developing innovative solutions to problems faced by the city and region, supporting engaged learning, and modeling sustainable practices for the community and other institutions.

While it is not possible to associate any of the above categories neatly with a particular type of respondent—student, faculty, dining services representative, or community engagement or sustainability administrator—the last was mentioned explicitly or implicitly in all interviews, the first two categories tended to predominate in expressions by student leaders, and sustainability personnel invariably used the fourth to explain their related involvement. Although all respondents volunteered challenges confronted within the university in their accounts, they tended to elaborate on why it was important to engage in SFS work as university-based actors in the first place only in response to a prompt. Presumably, because they were doing this work from within the university, they found the university role to be self-evident. While access to fresh and healthy food came up often, it was placed in the third category when it was mentioned within the frame of eliminating disparities, which was less often. Notably, critiques of the industrial food system manifested across all categories.

In addition to the intrinsic motivations involved in contributing to the betterment of their own health and that of the community and the environment, SFS leaders were aware of being a part of the broader social movement around food. Students noted the practical value of these themes in terms of a greater ability to organize other students and partner with community-based organizations in activities. Dining services staff recognized the attractiveness of SFS themes to students and many of their campus websites had references to sustainability, even if activities tended to focus more on cost savings rather than activities that reflect a broader definition and require greater investment, such as enhancing local food system capacity. All SFS activities found modest financial support from their respective universities, with student groups generally able to obtain seed money for their activities, including through wages. In more practical terms, at least two leaders also linked SFS activities to the need to retain students (many of whom come from disadvantaged backgrounds) on campus by helping create a sense of community and linking them to meaningful social activities on campus and in the community.

Merely allowing activities to develop unhindered, connecting activities to university members, and offering in-kind institutional support are often as important as more “proactive” forms of support given the typical barriers put up by universities, as identified later in this section. In campuses with sustainability offices that are actively engaged, these offices provide an outreach and linkage

function to students generally and to elements of campus administration and operation but typically little else; only in three cases were gardens initiated by the sustainability office. At no university did the campus provide support to SFS at a level comparable to other sustainability commitments, where these existed, in terms of staff salaries or other forms of support. Grants and other external funds, rather than administrative budgets, are what sustain SFS activities. Community partnerships help leverage these resources.

SFS leaders also identified small and big challenges related to both university and food system characteristics. Administrators tend not to see SFS as a significant issue by itself or as an arena for student leadership or contribution to the community, and tend, instead, to be concerned with narrower bottom-line issues and risk and liability in their reactions to requests for support. Leaders also identified both perceived and real barriers to local sourcing. Local food was perceived to be more expensive and difficult to obtain in the quantity and quality needed; real barriers included large institutions' requirements for insurance and certifications (which are usually onerous to small farmers), lack of suitable land on campus for gardens and farms, and low levels of kitchen and staff capacity for scratch cooking. Students are challenged by continually needing to recruit and maintain participation. "We get a small grant from the university as a registered student group," said one, "and I try to educate my fellow students that this is part of their tuition and they need to know where their money is going and what benefits it is creating." For their part, administrators in schools with low or no SFS engagement expressed skepticism about the longevity of projects started by students.

Invariably, SFS leaders complained about disciplinary and administrative silos within academics, segmentation of responsibility for campus functions, fragmentation and lack of coordination among SFS activities and between SFS and other sustainability activities, and a disproportionate emphasis within sustainability activities on cost savings and efficiency. SFS leaders of bigger, more integrative activities are already self-financing or, as in the case of PSU's Learning Garden Lab, are asked to find other ways to support activities that previously received institutional funding. Projects also rely day-to-day on more tenuous informal networks of friends and supporters rather than institutional mandates or enabling structures.

Given the experiences of SFS leaders recounted here, what are less expensive approaches for universities to support them, or low-hanging fruit that may be had through SFS actions? One, simply allowing SFS activities to be initiated within any given university function—academics, engagement, operations—with minimal bureaucratic interference is key. This approach includes encouraging students to find faculty advisors who can provide guidance and institutional connection and continuity; "marketing" ongoing SFS initiatives and leadership and showcasing their benefits to the university and surrounding community; and offering facilitative frameworks to help shape new activities so that projects take off smoothly and pose minimal risk and disruption to the university's functions. In-kind support through staff time; use of university grounds, facilities and equipment; and access to official websites and networks also helps activities get off the ground and creates benefits to groups on and off campus.

Of all food system activities, community gardens offer excellent, low-cost possibilities for community engagement, service learning, curriculum development, and even research, among other social benefits for students and staff. Gardens on campus grounds or rooftops are relatively easy to develop even if sustaining them year after year can be a challenge, one that committed student leaders are usually willing to take on. Gardens can also start small and grow with interest and involvement. Faculty might offer course credit for projects related to garden activities; of course, some courses lend themselves more easily than others to this proposition. Campus and sustainability administrators might encourage student engagement in community gardens on or off campus and even support them—as several do already—with resources and connections to students and faculty to help them evolve.

SFS also can originate at diverse sectoral starting points, thereby giving faculty members from different fields an opportunity to offer engaged learning through class projects related to food retail, entrepreneurship, and the economy; nutrition and healthy eating; ecology, soil health and plant biology; zoning and land use implications; policy analysis and development; and others. Community engagement offices could connect interested faculty members with related food system organizations

to identify community-based food system experts, develop curricular and co-curricular projects, and bring together teams to write proposals bridging research and innovative program development.

Universities could also explore links, through their wellness programs, to local food retail through farmers markets and community-supported agriculture shares for their members. The subsidized student shares offered by the Byrd House Farmers Market near VCU are an interesting illustration, and similar programs could explore partnerships with nearby universities to create benefits for students and local farmers, all at little cost to the university. Such efforts could also involve faculty and students in the design and development of these efforts and as volunteers to help implement them.

Finally, campuses could encourage engaged education about the local food system through their dining services. While many challenges exist to sourcing cafeterias locally or directly from farmers, dining units or contractors could nonetheless feature seasonal farm products specific to the region, or host a state agriculture week or month during the semester to highlight locally derived products or connections with particular local farms or businesses. Campus administrations might also, as a start, require locally sourced products during special occasions or events that showcase their urban mission commitments.

CONCLUSION

Urban public universities have missions identifying a special responsibility to the improvement of their city and region; increasingly sustainability is seen as integral to this responsibility, with more than half of the campuses studied adopting climate-sustainability plans. A majority of U-21s—two out of three—also show evidence of low-level engagement with SFS, representing initiative on the part of students, faculty members, dining service providers, or campus administrators. However, substantial and at least partially integrative SFS leadership is present at only a handful of campuses, and even this is continually challenged.

SFS activities offer rich connections across academic disciplines and fields, between academics and campus operations, between campus and community partners, and between the university's everyday operations and its strategic mission. They provide opportunities for hands-on and community-engaged learning to address real-world problems in creative ways. They embody diverse commitments: from valuing local agriculture, increasing access to fresh and healthy food, eliminating social and health disparities, fostering ecological integrity and a resilient regional agri-food system, and embodying sustainable development in general. SFS activities provide many tangible benefits to the campus and surrounding community.

As such, a U-21 university holds different forms of civic capital potentially useful for SFS: location in an inner city and a pre-existing commitment to its neighborhood, the university's functions in developing and disseminating knowledge and innovation, its own food system footprint and potential to create significant local multipliers, its neighborhood anchor effect, and the powerful resource constituted by student and faculty initiative independently and in tandem with an existing grassroots movement. This civic capital stands to make a significant impact on the metropolitan food system if a comprehensive and integrated approach to SFS can be developed. This key factor, integration, is practically nonexistent in U-21, although seed beds for such an approach have sprouted at many places.

Where they exist, SFS efforts tend to cover only a small range of possible activities, and are heavily dependent on particular individuals and their personal commitments and networks. These leaders perceive a fragile future for SFS when they note incongruence between stated missions and actual institutional practice, and because they are unable, by themselves, to transcend age-old barriers of disciplinary and academic-administrative partitions, and more recent fiscal belt-tightening. Universities that lack SFS activities also lack people and units with related commitments, capacities, and internal and external support. Narrowly defined institutional sustainability mandates explain why SFS leadership is absent even when universities have sustainability offices. Nonetheless, this study offers differing outlines of what SFS integration may look like on campuses. A lasting institutional commitment to SFS would include systematic and integrated linkages to core functions,

mandates embedded in plans with related benchmarks, job descriptions, contracting and reporting mechanisms, incentive structures, and accountability processes including community partners. A significant advantage of SFS leadership is that it can begin at any of a multiplicity of sectoral openings, start small, and be inter-, multi-, or even trans-disciplinary.

Public universities undoubtedly are in a state of flux. As austerity compels an obsession with the bottom line and dependence on private revenues, their obligations are also shifting away from broadly defined civic purposes and toward those who are able to pay to play. A greater adoption of distance learning by institutions of higher education and the development of remote satellite locations further threaten to unmoor these institutions from place, so that any place-based roles increasingly are defined in terms of benefits to the institution rather than as creations of broader social value. Consequently, universities' commitment to sustainability is destined to become even more fractured. Sustainability cannot just be about reducing costs by consuming resources more efficiently: such a narrow definition is akin to a stool that teeters on two legs, if it doesn't also include a social equity dimension. Increasing access to healthy food in urban communities; sourcing more locally and sustainably produced food; resolving the disparate impacts of the food system on communities; securing decent wages and working conditions for food and farm workers; increasing opportunities for smaller scale, new, and hitherto disadvantaged producers; and conducting scholarship and engagement on these themes—all require thinking differently about costs and benefits. A fight for social dimensions in food, furthermore, cannot be isolated from equity concerns internally and in the institution's relations with the surrounding community. Therefore, embracing sustainable food systems could help universities both bolster their sustainability agenda as well as sustain their urban commitment even if in modest ways.

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ENDNOTES

- 1 <http://www.presidentsclimatecommitment.org/>, accessed December 15, 2012.
- 2 SFS is an amorphous concept, with differing views related to its structure, boundaries, and priorities. In this paper, a practical definition of SFS includes increased local self-reliance in food provisioning with closer links between producers and eaters; greater access to fresh and healthy foods in hitherto underserved areas; greater access to food system entrepreneurship and economic opportunity to small-scale operators and disadvantaged segments of the population; and production and other food system activities conducted in ways that sustain and regenerate the natural resource base upon which life depends.
- 3 Although some people add “just” to the word “sustainable” to emphasize the notion of equity, this practice is not followed in this paper. The definition of sustainability used in this paper emphatically embraces social equity in outcomes and processes.
- 4 <http://www.farmtocollege.org/survey#profiles>, accessed September 3, 2012.
- 5 <http://realfoodchallenge.org/about/whatwedo>, accessed September 3, 2012.
- 6 http://www.slowfoodusa.org/index.php/programs/sf_campus_detail/slow_food_on_campus_chapters/, accessed April 19, 2013.
- 7 The principal purpose of such lists derived from several university websites is to compare themselves with peers. Such comparisons include the adoption of electronic records systems (O'Rourke, n.d., p. 10), depth and breadth of degree programs (IUPUI, n.d.), and a student-led study of transportation pass programs (Farncomb, Wagner, Dauphin, Jordan, & Abe, 2012). Huttner and Gooding (2002), CSU (2009, n.d), and Wayne State University (n.d.) are other sources of such comparative lists.
- 8 Source: http://en.wikipedia.org/wiki/Great_Cities%27_Universities, accessed December 15, 2012. The Great Cities' Universities coalition was disbanded a few years after it was incorporated in 1998; its members came

together to form a successor coalition called Urban Serving Universities or USU. USU is a dues-based membership organization that currently consists of 43 member institutions; a handful of the Great Cities' Universities members dropped out soon after USU was constituted: University of New Orleans, City College of New York, University of Alabama–Birmingham, and University of Missouri–St. Louis. Members are self-selecting and diverse in size and metropolitan location (Source: Shari Garmise, Ph.D., Vice President, Urban Serving Universities/American Public and Land Grant Universities Office of Urban Initiatives, phone interview, April 24, 2013).

- 9 The study selects only those universities that were original members of the Great Cities' Universities consortium rather than all universities in a particular university system. For example, for University of Missouri, Kansas City and St. Louis campuses are both members of the U-19; however, the Columbia campus is not and is therefore excluded from the study.
- 10 For example, IUPUI (n.d.), Temple (O'Rourke, n.d.), and CSU (Huttner & Gooding, 2002; CSU, n.d.).
- 11 In considering Florida A&M, we found that, although it expectedly has curricular activities in the form of an agro-ecology certificate, it somewhat surprisingly lacks other leadership activities of interest in this article.
- 12 <http://slowfoodoncampus.wordpress.com/>
- 13 <http://www.campuskitchens.org/>
- 14 For Wayne State University's SFS efforts, we relied as much as possible on information already published in quarterly newsletters, archives for which are available from the program's website: www.clas.wayne.edu/seedwayne
- 15 For example, on March 31, 2012, a student group, Green Unity, at Virginia Commonwealth University started the campus's first community garden on the east side of Larrick Student Center on their medical campus. Later that year, they also started the Rams Farmers Market nearby. These are not included in Table 1. Similarly, while one-off farmers market events on campus individually or as part of larger environmental or health fairs were recorded in our notes, they are not considered a significant SFS activity.
- 16 No attempt is made to offer counts in these categories given the diversity of documents from which they were obtained, breadth of statements, and the existence of similar commitments at lower levels, even if not in the university's mission and goal statements. These findings nonetheless serve to showcase a more recent commitment to urban community and policy goals that are congruent with the goals of SFS initiatives.
- 17 Sustainability programs are in a state of flux reflecting institutional ambivalence about sustainability as a priority when universities are forced to cut budgets. Cleveland State University, for example, appointed their first sustainability coordinator in 2010, but eliminated the position very soon thereafter. On the other hand, University of Missouri–St. Louis, an ACUPCC signatory since 2009, hired their first sustainability coordinator in 2013.
- 18 <http://agroecology.fiu.edu/campus-garden/>. Links to dining services at Florida International, however, are limited to the donation of food scraps to produce compost for use in the gardens.
- 19 www.clas.wayne.edu/seedwayne, accessed December 15, 2012.
- 20 In 2010–2011, AVI sourced more than \$30,000 worth of baked goods from Milano Bakery, based in and operating out of Detroit; this was a tenfold increase over their previous year's local sourcing (Susan Schmidt, presentation at SEED Wayne Harvest Dinner, November 4, 2011).
- 21 PSU sustainable food purchase policy, 2007: <http://www.sustainablefoodpolicy.org/example-policies-and-plans/portlandstateuniversity>
- 22 http://www.memphis.edu/planning/SoMe_RAP/SoMe_RAP_Fact_Sheet.pdf
- 23 An occasional farmers market offered during the spring and fall terms started out as a project of the University of Cincinnati's student government in 2008, and was later taken on by its sustainability office. It was discontinued in 2011, suggesting the tenuous nature of student-led projects.
- 24 A student group at VCU started a garden and a farmers market in 2012; a rooftop garden was also started the same year at University of Alabama at Birmingham.
- 25 http://www.clas.wayne.edu/multimedia/usercontent/File/seedwayne/Seminar%20Series022012_Rev.pdf, accessed December 15, 2012.

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