

GREEN DINING AT DUKE UNIVERSITY:
FACILITATING LOCAL AND SUSTAINABLE FOOD PROCUREMENT

by

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March 22, 2009

Masters project submitted in partial fulfillment of the
requirements for the Master of Environmental Management degree in
the Nicholas School of the Environment of
Duke University

2010

Signature of Approval, MP Advisor: _____

Date: _____

ABSTRACT

The global food system is responsible for feeding billions of people each day. To accomplish this at the lowest cost, food is produced in a predominantly industrialized manner, causing significant environmental degradation and public health issues, and resulting in social and economic injustices throughout the world. While most chains of food production and consumption are national or even global in scale, some food chains have moved towards revitalizing local and sustainable food systems, which emphasize environmentally responsible agriculture, social justice, and locally-oriented economic structures.

Duke Dining Services oversees more than thirty individually contracted eateries on the Duke campus, monitoring their performance through an innovative quality assurance program called PACE. While some eateries at Duke purchase local and sustainable foods, others do not or cannot, facing financial constraints or restrictions imposed by parent companies, or daunted by a lack of experience.

The objective of this case study is to (a) better understand Duke's local food system – from farm to consumer – and potential roles for the university within this system, and (b) to recommend a means of measuring, stimulating, and celebrating the progress of Duke's eateries towards more sustainable food purchasing. I conducted interviews with individuals involved in the local food system, including farmers, food distributors, eatery managers, and students, among others. I analyzed interview data using NVivo software, performing inductive coding and content analysis of documents, web materials, and previous research at Duke.

Finally, I created recommendations for Duke Dining Services and Sustainable Duke, encouraging them to (1) incorporate food procurement data tracking and reporting requirements into the PACE system, (2) create a Green Dining Award, (3) build and foster a culture of environmental awareness and concern surrounding sustainable and local food issues, focusing on the student body at Duke, and (4) encourage leadership at Duke to make an institutional commitment to sustainable food procurement.

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Acknowledgements

I would like to thank my wonderful advisor, Dr. Charlotte Clark, for her invaluable assistance and feedback throughout the entire research process. In addition, I am grateful to Tavey Capps, Director of Sustainable Duke, for her advice, as well as to Duke Dining Services for providing me with helpful insights into the food procurement process at Duke University. Thanks to Becca Schild for her help with coding and the Nvivo program, and to Kellyn Shoecraft, for being my food and farm partner-in-crime throughout the past year. Furthermore, I am indebted to all of my wonderful interview subjects, whose rich experiences and stories have led to the recommendations found at the end of this report. Lastly, I would like to thank my friends and family for continuously supporting and encouraging me in all of my endeavors, both academic and otherwise.

1. Introduction

The global food system has a significant impact upon the environment, affects human health and social justice, and plays a role in economics. Much has changed in the last century; as the economy has industrialized, so has the agricultural system. Current agricultural practices contribute to pollution, climate change, and the degradation of land, among other problems (Horrigan, Lawrence, & Walker, 2002). Despite the increased productivity of croplands in many areas, hunger is still widespread, in part because of the way food is allocated (Horrigan, et al., 2002). Other issues related to food production include farm worker rights, the marginalization of small farmers and local business owners, and the availability of fresh produce.

Nevertheless, food is a universal connector. Everyone eats, regardless of nationality, economic status, gender, political affiliation, or occupation, and food plays a significant role in cultures worldwide. Many different culinary traditions have formed, based on long histories of hunting, gathering, and farming. In addition to providing essential daily nourishment, food also plays a role in community development. Simply put, food can help to bring people together. People laugh and converse over meals, sharing values, knowledge, stories and experiences. The “family dinner” is a long-standing tradition in American culture, and in the world of higher education, university dining halls and other eateries are favorite gathering places for students.

Today, the American food system includes imports from all over the world. Agricultural inputs are processed into additives, vegetables are transported long distances, and industrial scale farms are the norm. A growing awareness in this country and around the world has raised concerns about the sustainability of such a system (Horrigan, et al., 2002). In some places, the emphasis is shifting towards smaller-scale farms, less environmentally damaging farming methods, and locally-oriented food systems.

As a large and influential institution of higher education, Duke has an opportunity to play an important role in the development of the Triangle's local and sustainable food system. Some eateries at Duke make it a priority to purchase local, sustainable, and organic foods, yet others buy and serve only conventionally produced foods and produce. This project is focused on the food procurement process at Duke University, and specifically, on encouraging and rewarding the use of local and sustainable foods in campus eateries.

In this report, I will provide background information regarding the environmental impacts of agriculture and food production, a description of the study design and methods, relevant findings, and a set of recommendations intended for Duke Dining Services and Sustainable Duke, the office responsible for campus environmental management.

2. Objective

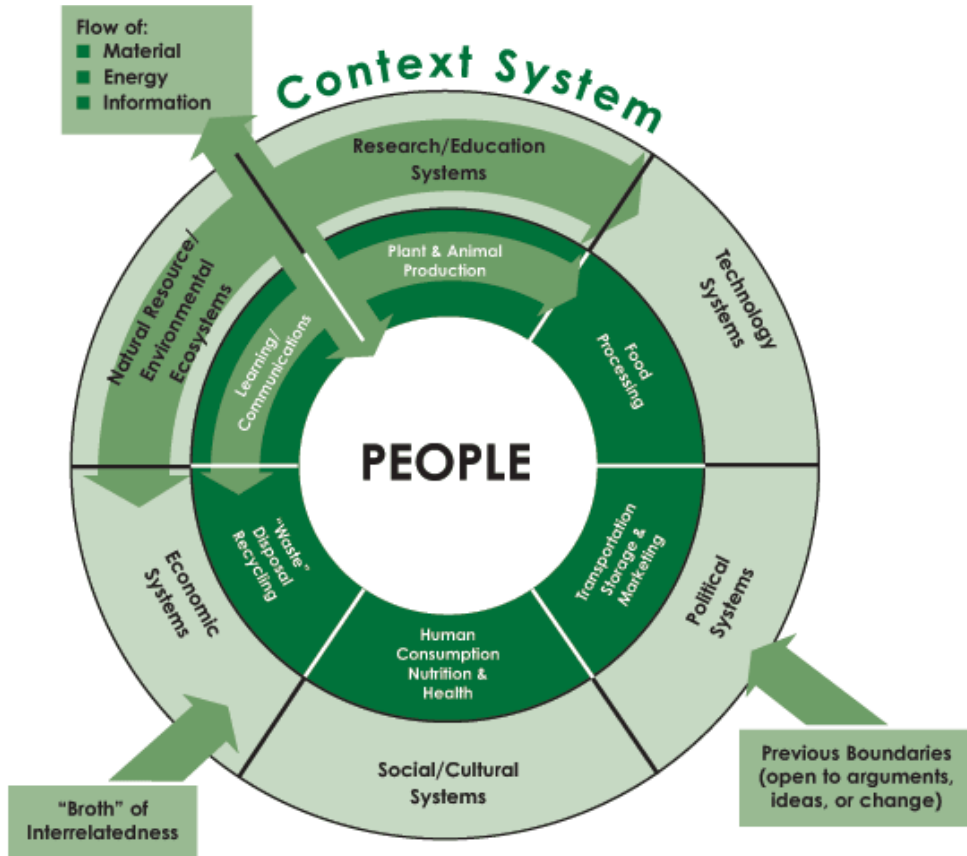
The objective of this master's project is to (a) better understand and comprehensively describe Duke's local food system, and to illuminate potential roles for the University within this system, and (b) to recommend a means of measuring, stimulating, and celebrating the progress of Duke's eateries towards more sustainable food purchasing.

3. Background

3.1 The Food System Model

In today's industrial society, "only a tiny fraction of the population is in frequent contact with the soil, and an even smaller fraction of the population raises food on the soil" (Steinhart & Steinhart, 1974). Most people (and especially children) are more and more removed from the actual cultivation of food. Asking a child where an orange comes from is likely to yield the

response of “from the grocery store,” rather than “from a tree” or even, “from Florida.” Because of our massive food production and distribution process, people “have become passive recipients in a rather homogeneous system of nutrient distribution in which real food is almost considered a luxury” (Feenstra, 2002).



<http://www.foodsystemconsortium.org/foodsystem-model.html>

Figure 1. The Food System Model.

The food system model (Figure 1) seeks to graphically describe this complicated structure. It includes all of the many sectors and actors involved in food production, from educational entities and political systems to farmers and end consumers. People, at the center of

the diagram, interact in many ways with key components of the system, including the production and processing of plants and animals for food and other products; the transport, storage, and marketing of food; the study of food health and nutrition; the food waste subsystem from production and consumption of food; and the educational aspects of the food system as a whole (Food Systems Consortium, 2006). Thus, the complete food system is much more than just the growers, or just the restaurateurs – it includes all of the players, as well as a number of different connections and flows between and among these players.

The field of agroecology – the ecology of food systems – also considers the entire food system, and attempts to provide a “framework that will guide research, education, and actions in the multiple and interacting facets of an increasingly complex global food system” (Francis, et al., 2003). Agroecology encompasses the ecological, economic, and social dimensions of the entire food system, encouraging people to “embrace the wholeness and connectivity of systems,” stimulating a “focus on uniqueness of each place, and solutions appropriate to its resources and constraints” (Francis, et al., 2003).

All food systems, industrial or sustainable, global or local, come with environmental, social, and economic implications. Some systems have larger impacts in certain areas, and there are always trade-offs to consider. In the next sections, I address some of the broad categories of issues associated with food systems today.

3.2 Environmental Impacts: Agriculture

The conversion of land for use in agriculture has been “widely recognized as one of the most significant human alterations to the global environment” (Matson, Parton, Power, & Swift, 1997). While the percentage of cultivated land has risen throughout the last century with the

growing human population, the *rate* of land conversion has decreased in recent decades, largely due to advancements in technology that have greatly increased the yields of existing farmland, including the introduction of high-yielding crop varieties, irrigation, fossil-fuel dependent mechanization, and the use of chemical fertilizers, pesticides, and herbicides (Matson, et al., 1997).

Today, most of the world's food is grown using these modern, high-intensity methods, many of which were developed during the "Green Revolution" (Tilman, 1998). This increase in crop yield (food produced per acre farmed) has helped to accommodate a hungry, growing population and avoided impacts associated with land-use change in many areas. However, studies suggest that the industrial, high-intensity agricultural model operates in an inherently unsustainable manner (Horrigan, et al., 2002; Matson, et al., 1997). Relying heavily upon expensive outside inputs, fossil-fuel usage and a number of environmentally damaging practices, industrial farming causes soil depletion, air and water pollution, decreased biodiversity, and elevated GHG emissions (Horrigan, et al., 2002). The use of pesticides and antibiotics on conventional farms are associated with serious human health impacts, and the current system favors larger farms (driving out small producers), crop monocultures, and the unsustainable use of water resources (Horrigan, et al., 2002). Chemical fertilizers contribute to nitrogen runoff, causing eutrophication in streams and a "dead zone" in the Gulf of Mexico (Horrigan, et al., 2002).

3.3 Environmental Impacts: Processing, Transportation

While food processing can improve the nutrition, taste, and safety of foods, it also uses energy and produces waste products, creating additional environmental impacts (Friedman,

1992; Kroyer, 1995). Wastes from processing can contribute to pollution, and handling and packaging wastes that are not managed properly can lead to disposal problems (Kroyer, 1995).

Food is carried over long distances using many different modes of transport, including truck, rail, air, and ship, among other means. Most of these rely on fossil fuels, leading to increased emissions of GHGs. Recent work has suggested that the proportion of GHG emissions resulting from “food-miles” – or the overall distance food travels – changes with different foods, depending upon the GHG-intensity of the food in question (Weber & Matthews, 2008). For example, life-cycle assessment studies have shown that the transportation impacts of beef are small, compared to the overall GHG emissions released from beef production. However, because vegetables tend to be less GHG-intensive, their profile is different, and transportation emissions make up a larger proportion of their overall footprint. This particular study suggests that “shifting less than one day per week’s worth of calories from red meat and dairy products to chicken, fish, eggs, or a vegetable-based diet achieves more GHG reduction than buying all locally sourced food (Weber & Matthews, 2008).

3.4 Economics and Social Justice

As described by Gail Feenstra, the “dominant food and agricultural system in which we all live, work, and eat, produces the bulk of our food and fiber in an incredibly efficient manner by at least one criterion of efficiency” (Feenstra, 2002). The industrial food system is economically efficient, but very consolidated, and while it is globally integrated, the system is also very energy- and capital-intensive. The economic efficiencies of the current food system also come at the expense of many displaced small family farmers, local businesses, and community processors (Feenstra, 2002).

Additionally, world food cultivation and production creates widespread social justice concerns. These include issues of employment equality, farm worker rights, and access to safe and healthy food (Ikerd, 1997). The fair trade movement has attempted to address some of these issues by “fostering the re-embedding of international commodity production and distribution in ‘equitable social relations’” and furthering a trade system for goods that have been produced “under favorable social and environmental conditions” (Raynolds, 2000).

3.5 Sustainable or Organic?

In recent years, sustainable agriculture methods, organic farming practices and local food systems have risen as alternatives to the widespread industrial model. These three categories of food production have been defined differently, though they overlap in some ways and share similar objectives. According to Horrigan, et al. (2002), “one of the goals of sustainable agriculture movement is to create farming systems that mitigate or eliminate environmental harms associated with industrial agriculture,” giving “due consideration to long-term interests.” As a result, sustainably-managed farms tend to be smaller, less reliant on fossil fuels, and less likely to use environmentally questionable chemical inputs (Horrigan, et al., 2002).

The terms “sustainable” and “organic” are often conflated. Here, the word “organic” refers to foods certified by the U.S. Department of Agriculture (USDA) as organic under their National Organic Program (NOP). The NOP “develops, implements, and administers national production, handling, and labeling standards for organic agricultural products,” as well as manages accreditation of parties responsible for certifying operations that display the USDA organic label (USDA, 2009). Foods that are labeled as organic have met specified criteria under the USDA system, but may have other environmental impacts associated with their production,

including transportation impacts. Organic certification does not necessarily imply “local” production.

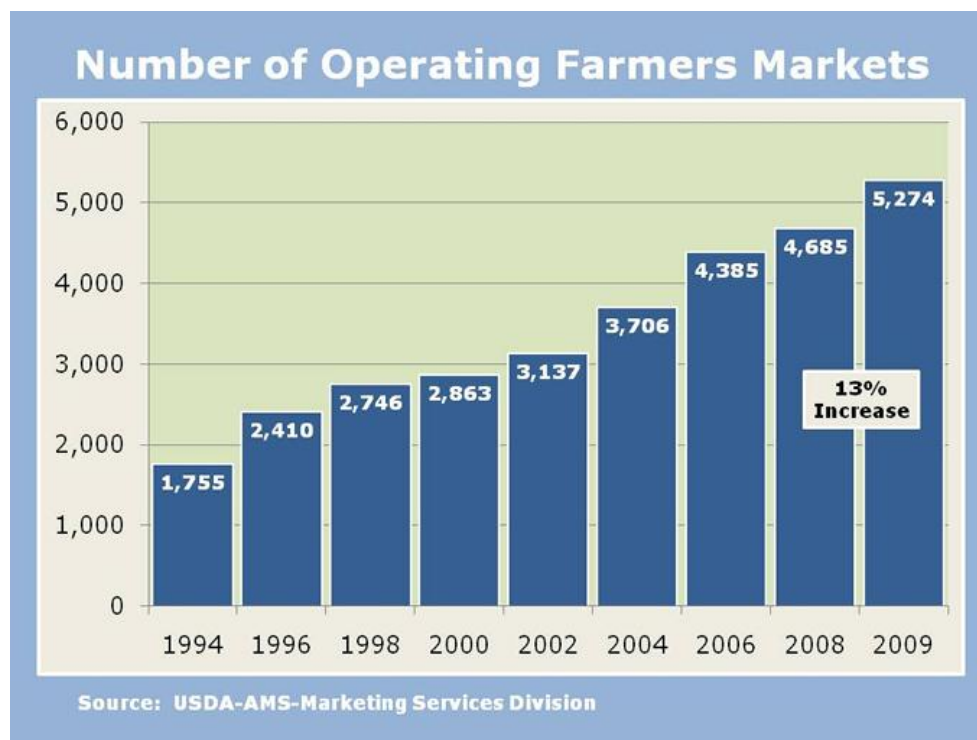
3.6 Local Food Systems

Local food systems, according to some researchers, have developed in response to widespread globalization, representing market alternatives that are re-embedded in their physical, social, and ethical context (O'Hara & Stagl, 2001). According to Gail Feenstra and Dave Campbell, in “Steps for Developing a Sustainable Community Food System,” *Pacific Northwest Sustainable Agriculture: Farming for Profit & Stewardship*, a local food system “is a collaborative effort to integrate agricultural production with food distribution to enhance the economic, environmental, and social well-being of a particular place (i.e. a neighborhood, city, county or region).” Community Supported Agriculture (CSA) operations¹ and Farmers’ Markets, which help connect farmers and eaters within a single region, have increased in popularity throughout the U.S. in recent years, signaling a shift in consumer preferences (O'Hara & Stagl, 2001). According to the USDA, between 1994 and 2009 the number of operating Farmers’ Markets in the U.S. increased from 1755 to 5274, with a 13% increase between the years 2008 and 2009 (Figure 2).

Some scholars have applied the bioregional concept of watersheds to the food system field. In the late nineties, permaculturist Arthur Getz coined the term “foodshed,” to “facilitate critical thought about where our food is coming from and how it is getting to us” (Kloppenborg, Hendrickson, & Stevenson, 1996). While most food comes to consumers today through a global

¹ Community Supported Agriculture (CSA) consists of a community of members or share-holders who pledge to support a farm operation by purchasing “shares” in advance of the season, covering the operational costs of the farm and the farmer’s salary. Members receive a certain portion of the farm’s goods throughout the season, and share in the risks of farming (DeMuth, 1993).

food system, Kloppenburg *et al.* argue that “alternatives are emerging which together could form the basis for foodshed development” (Kloppenburg, et al., 1996). Thinking of a local food system as a “foodshed” can “confer a sense of connection and responsibility to a particular locality” and allow alternative producers, consumers, and small entrepreneurs to play larger roles in the local economy (Kloppenburg, et al., 1996).



<http://www.ams.usda.gov/>

Figure 2. Farmers’ Market growth, 1994 – 2009.

3.7 Sustainability in Higher Education

As institutions for higher education (IHEs), colleges and universities are in a unique position to address the challenge of developing sustainable systems and practices in a changing world (Cortese, 2003; Uhl & Anderson, 2001). Anthony Cortese, of Second Nature, has even suggested that IHEs “bear a profound, moral responsibility to increase the awareness, knowledge, skills, and values needed to create a just and sustainable future” (Cortese, 2003), as

they educate future politicians, policy-makers, teachers, scientists, and other leaders and members of the general public.

In 1990, the Association of University Leaders for a Sustainable Future composed the Talloires Declaration, the “first official statement made by university administrators of a commitment to environmental sustainability in higher education” (“Talloires Declaration,” 2001). The declaration outlined ten actions intended to combat air and water pollution, waste accumulation, climate change, and harmful land-use practices, among other global environmental problems (“Talloires Declaration,” 2001). Since then, many IHEs have started to address the environmental impacts of their operations. The Association for the Advancement of Sustainability in Higher Education (AASHE) provides resources, professional development, and information to member institutions, empowering IHEs to “model and advance sustainability in everything they do” (“About AASHE,” 2005-2009). With the American College and University Presidents Climate Commitment (ACUPCC), many IHEs have also agreed to pursue “climate neutrality” through steps to lower and eventually eliminate GHG emissions associated with university operations (“ACUPCC,” 2007-2009). Currently, there are nearly 650 signatories to the ACUPCC, and in 2008, more than 250 colleges and universities reported on their GHG emissions through the ACUPCC reporting system (Webster & Dautremont-Smith, 2009).

Since 2005, AASHE has published an annual review of stories illustrating the implementation of sustainable practices at IHEs throughout the country. The latest digest includes descriptions of programs in nearly every operational sector, including waste management, buildings, energy, grounds, purchasing, transportation, and dining services. The publication also details curricular initiatives, funding, staffing, and policy (Webster & Dautremont-Smith, 2009). In total, the 2009 document contains over 1350 different

sustainability stories (up from 800 last year), signifying the continued growth of the sustainability movement in universities across the country. Of these stories, one sub-chapter (16 stories) is devoted to campus farms and gardens, while another chapter contains over 50 accounts of dining-related efforts ("AASHE Digest: An Annual Review of Campus Sustainability," 2005-2009).

Sustainability in higher education has not been limited to American universities. In January of 2010, the International Sustainable Campus Network (ISCN) presented the ISCN-GULF Charter (GULF stands for Global University Leaders Forum) to the public for the first time. The Charter "was developed to support Universities in target-setting and reporting about campus development goals and performance," and participants have also agreed to incorporate the study of sustainability into their curricula (ISCN, 2010). Currently, the Charter has been signed by 25 prominent universities from nine countries in the Americas, Europe, and Asia, including the following U.S. schools: Columbia University, Johns Hopkins University, Georgetown University, University of Pennsylvania, Massachusetts Institute of Technology, University of Chicago, Harvard Kennedy School, Harvard University, Stanford University, Yale University, and Brown University (ISCN, 2010).

3.8 University Involvement in Local Food Systems

IHEs, hospitals, and other institutions across the U.S. are beginning to consider the environmental impacts of purchasing decisions, recognizing that these decisions may drive the "development of more socially and environmentally responsible products and services" (Buck, 2007). In particular, some IHEs like the University of New Hampshire, Bates College, and Iowa State University, have focused upon food purchasing, choosing to support local and sustainable

growers over industrial farms ("AASHE Digest: An Annual Review of Campus Sustainability," 2005-2009). In concert with food procurement changes, many institutions have also moved to reduce the overall environmental impact of their entire dining services operation, implementing trayless dining and food waste composting, and conducting studies of "to-go" containers. Some schools offer hands-on sustainable farming opportunities as well, several of which involve on-site food production for university dining halls (College of the Atlantic in Maine, Warren Wilson College in North Carolina, for example). The Rodale Institute has published an on-line index of IHEs in North America with on-site farms or gardens and sustainable agriculture programs; this list now numbers more than 80 institutions ("Farming for Credit Directory," 2009).

While colleges and universities have made progress in creating more sustainable dining programs, many barriers exist to sustainable food purchasing. IHEs that work with a number of different contractors might experience partner constraints, and certain food service providers might be more or less willing (or able) to meet program objectives (Buck, 2007). Physical limitations on facilities, contract or policy barriers, budgetary constraints, and skills training are other potential hurdles facing some institutions (Buck, 2007). Depending upon an IHE's geographic location, there may be a limited supply of food products, especially during the non-growing seasons of the year. Tracking and monitoring is also a concern, and IHEs must decide how performance will be "measured, evaluated and rewarded" (Buck, 2007).

3.9 Eating at Duke University

Duke has over thirty on-campus eateries, most of which are contracted individually. All of the eateries are supervised by Duke Dining Services, and they fall into several categories, including restaurants, cafes, mobile carts, locally owned chains, and franchises, among others

(see Appendix B). Because all of the eateries are independently owned and operated, they face individual requirements and constraints.

Dining Services, under the direction of Jim Wulforst, uses a unique system called PACE to monitor the quality and measure the progress of Duke's dining establishments ("Duke eateries earn awards," 2009). "PACE" stands for Performance Assessment for Culinary Excellence, and "relies on 'best practice' standards to equitably and constructively measure each dining unit's performance on a fixed (rather than relative) scale" (Duke Dining Services, 2010b). PACE uses a scoring matrix to rate eateries on more than one hundred criteria, in five different categories including kitchen operations, serving and dining operations, personnel, sanitation and maintenance, and management.

The PACE system has five basic components, which are revised annually. Customer Care Review (CCR) involves a two-part form documenting a customer's experience during a meal. Customers include three "mystery shoppers" per month, as well as one member of the Dining Services senior staff. The Periodic Review of Performance Standards, or "PROPS" review, is a comprehensive, biannual, unannounced assessment of eatery operations. The People's Choice Award (PCA) is determined twice per year through an on-line survey of students, faculty, and staff, and awards "bonus points" to the selected eateries. The Monthly Business Review (MBR) is a meeting of the on-site eatery manager, the owner/operator, and a member of Dining's senior staff. During this meeting, the results of other PACE reviews are discussed, as well as finances, sanitation reports, and payroll registers. Lastly, the Recognition and Incentives section rewards eateries for exemplary progress, based upon PACE scores. Rewards may include achievement plaques and award plates, or funds for equipment, uniforms,

signage, or student programming. Contract renewals are also based upon PACE performance, and annual program results are publicly available to the Duke community.

Within the “Management” section of PACE’s PROPS review, points are awarded for “greening” initiatives. These have been identified to eateries by Dining Services as part of the “PACE Top 10 Opportunities,” and include composting, recycling (of cardboard, coffee grounds, grease, bottles, cans, and plastics), office recycling (paper, ink cartridges), and other conservation efforts.

Duke students choose among a variety of meal plan options, based upon their year in school and personal preferences. During their first year at Duke, all students live together on East Campus and are required to purchase a meal plan with food points. The mission of this plan is to “enhance the undergraduate experience and foster a sense of community through dining” (Duke, 2009). The first-year meal plan provides twelve total meals per week in select locations, including the Marketplace on East Campus, the Great Hall, and the Freeman Center for Jewish life, plus a certain amount of food points (1 point = \$1), which can be used at any on-campus eatery (Duke, 2009). After the first-year, students must purchase food points to buy their meals on campus. Upperclassmen also have the option of purchasing food using a “Flexible Spending Account” (FLEX), which (like food points) is accessed through the student’s school ID card.

Because eateries at Duke University are operated by independent contractors, Dining Services cannot mandate a university-wide food purchasing scheme. Instead, efforts to increase sustainable and local food procurement at Duke must rely upon various other motivators, and consider the barriers and obstacles that eateries face in making purchasing decisions.

3.10 Recent Sustainable Dining Work at Duke

Duke has initiated efforts to improve its operational and environmental sustainability. In 2004, Greg Andeck, a graduate student at the Nicholas School of the Environment, performed an environmental impact inventory of dining services at the University in collaboration with the Duke University Sustainability Office. This study was intended to assess the current state of Duke Dining's environmental performance, providing information that could be used as a baseline for further efforts to increase the sustainability of dining operations (Hummel & Andeck, 2005). Andeck conducted interviews with eatery managers and made site visits to several of Duke's dining establishments, focusing on five areas of environmental concern: food ingredients, chemical use, energy consumption, consumer education, and solid waste (Hummel & Andeck, 2005). His final report provided more than thirty recommendations, some of which have been implemented by Duke Dining since 2005. Several of Andeck's recommendations have not yet been addressed, including the suggestion that more rigorous life-cycle assessment studies need to be conducted before the impacts of food purchasing and dining at Duke can be thoroughly understood. Andeck concluded that Duke should create a way for eatery managers to quantify and monitor food purchasing data.

Last spring, students in Professor Charlotte Clark's undergraduate seminar in Food and Energy embarked upon a group project examining the status of local food use at Duke (Hernandez, Mazhirov, McKeever, Piper, & Sandel, 2009). Through interviews with eatery managers and consumers and discussions with local farmers and members of various food-related organizations, the group attempted to answer the following questions:

- (1) What are the barriers for Duke campus eateries to sourcing local food?
- (2) How could Duke award or reward those eateries that source local food?

The students noted several themes that ran throughout their research. They discussed the definition of “local” as a continuum, suggesting that eateries could set a mileage limit for local food, yet be willing to make exceptions in some cases (such as when a certain item is scarce or unavailable). The report cited communication difficulties, price, and seasonality of products as obstacles to local sourcing, and suggested that sustainable practices should be integrated into eatery business models from the outset. The students developed a metric for evaluating and rewarding eateries for using local food, which considered food origin, general sustainability, and outreach/education. The group acknowledged that the implementation of the metric required the eateries to monitor purchases, a task that involved a “detailed breakdown of their food budgets into categories that are likely not currently monitored” (Hernandez, et al., 2009).

4. Methods

I chose to address my objectives using qualitative research methods. Qualitative inquiry involves the study of a “social or human problem,” and employs “collection of data in a natural setting sensitive to the people and places under study,” as well as “data analysis that is inductive and establishes patterns or themes” (Creswell, 2007). This study addresses sustainable and local food purchasing at a large institution, a process that includes many individual actors with unique experiences, who are also part of the larger network of our global food system. Qualitative research methods are particularly appropriate in this case, and have been useful for exploring the existing barriers and potential opportunities related to local and sustainable food purchasing at Duke.

I determined that a case study would be the most appropriate tradition of inquiry through which to address my research questions. According to Creswell, “case study research is a

qualitative approach in which the investigator explores a bounded system (a case) or multiple bounded systems (cases) over time, through detailed, in-depth data collection involving multiple sources of information and reports a case description and case-based themes” (Creswell, 2007). This work is an example of an *intrinsic* case study, in which the focus is on the case itself – here, Duke University’s local food system.

During the initiation of my research process, I set up meetings with my advisor, Dr. Charlotte Clark, as well as members of Duke Dining Services, and Tavey Capps, the Environmental Sustainability Director at Duke University. All of these individuals have been involved in prior discussions of sustainable food use at Duke, and they provided me with access to recent student projects exploring green dining at the university. Because this study includes data gathered from human subjects, I completed the Institutional Review Board process and received an exemption for my work. At this time, I also created a preliminary interview guide, and conducted a literature review of material related to my topic.

I conducted eleven semi-structured interviews with individuals who are involved in Duke University’s local food system. These interviews included eatery managers, local farmers, sustainability professionals, business owners, students, and employees of Duke Dining Services (Table 1). All interviews were conducted in person, and all but two were recorded using a digital voice recording device. The recorded interviews were subsequently transcribed verbatim. The interviews with Dining Services (Tammy Hope and Barbara Stokes) and Eliza MacLean of Cane Creek Farm were not recorded. In these two cases, I took handwritten notes during the meetings, typed them up, and submitted the notes to the interviewees for approval before including the data in my analysis.

Table 1. Interview summary.

Subject	Position	Organization/Company
Laura Hall	Owner	Bon Vivant, The Refectory
Tammy Hope and Barbara Stokes	Quality Assurance Manager and Assistant Director. Ms. Hope has responsibility for green dining activities at Duke.	Duke Dining Services
Richard Holcomb and Jamie Dement	Owners/Farmers	Coon Rock Farm, Hillsborough, NC
Eliza MacLean	Owner/Farmer	Cane Creek Farm, Snow Camp, NC
Nate Peterson	General Manager	Bon Appétit Management Company
Jordan Treacle	Senior undergraduate	UNC-CH (member, FLO; Southeast Organizer, Real Food Challenge)
Stella Dee	Sophomore undergraduate	Duke (treasurer, Duke Community Garden)
Tavey Capps	Environmental Sustainability Director	Sustainable Duke
Sandi Kronick	CEO	Eastern Carolina Organics
Tom Meyer	Owner/operator	Tommy's Rubs & Grubs
Dennis Lane	Owner/operator	The Loop Pizza Grill

I did not interview subjects in any particular order, though I did begin with Laura Hall because her company, Bon Vivant (The Refectory), already does a great deal of local and sustainable food purchasing. Otherwise, I set up meetings as schedules permitted, collecting data between October, 2009 and January, 2010. Because there are more than thirty different eateries at Duke, I chose not to interview all of the managers. Instead, I studied a small subset of eateries that represents a range of eatery types at Duke, from franchises to locally owned businesses.

Interview types used by qualitative researchers can range from “highly structured/standardized” to “unstructured/informal” (Merriman, 2001). In this study, I chose to use a “semi-structured” interview form, which falls in between these two extremes. Highly structured interviews contain questions with predetermined wording and order, and can be described as an “oral form of a survey” (Merriman, 2001). In contrast, unstructured interviews are composed of open-ended questions and are flexible and exploratory, rather like a conversation. My choice of semi-structured interviews allowed me to ask a mix of both structured and unstructured questions. While I created individual guides for all of the interviews, each one was based upon a template specific to a particular category of interviewees. The template interview guide for eatery managers contained the following sections:

- Eatery manager introduction
- Eatery description
- General food purchasing at eatery
- Local and sustainable food purchasing at eatery
- PACE program
- Tracking/monitoring purchasing data

Each interview guide contained questions within these six categories, as well as questions that remained the same for all of the interviews. With the semi-structured interview form, I was able to change and shift my questions as the study went on, adding questions as new issues came to my attention, and exploring interesting tangents during individual interviews.

My research questions changed slightly as I gathered more information. My original objective involved the creation of a PACE metric that would require eateries to purchase a certain percentage of sustainable and local foods. After interviewing Dining Services, I learned

that this strategy would not be fair to all eateries, and I moved away from the development of this metric as a main focus of the project. As interviews progressed, I broadened my research somewhat, and turned towards the following two questions: (a) how does the local and sustainable food system function in our region, and what is Duke’s role in it, and (b) what is the best way to encourage eateries at Duke to purchase sustainable and local food?

In an attempt to inform an overall “green dining” plan at Duke University, I also informally investigated best practices of other successful dining initiatives, and performed content analysis of text documents and website material. During site visits and interviews, I collected observation data, which I incorporated into my final analyses.

Table 2. Coding structure: node group headings.

Node Group	Description
Connections	Nodes representing relationships and associations between different groups
Drivers	Information coded to different motivating factors, such as “money,” “mission-driven,” and “PACE”
Food Topics	General group of nodes related to food issues (i.e. “GMO,” “obesity”)
Ideas	A collection of ideas for the “Recommendations” section of this study
Major Players	Nodes related to each of the main parts of the food system
Obstacles	Barriers and challenges faced by major players in the local food system
Processes	Nodes that represent different general processes, like “buying in bulk” or “transportation” or “recycling”
Standards and Labels	Contains the nodes for food standards and labels mentioned by interviewees, like “USDA Organic” and “Fair Trade”
Values	Nodes representing values held by food system participants, like “consistency” or “freshness” or “health and safety”

I completed data analysis using NVivo8, a qualitative analysis software program that assists researchers in handling, organizing, and sorting large amounts of information. I imported all of my interview data into NVivo, as well as data from documents and websites. Using NVivo, I coded inductively, or “from the ground up,” exploring my data without any predetermined theories or themes in mind, and with the aim to “discover themes and eventuating theory by allowing them to emerge from the data” (O’Leary, 2005). This is also called “bottom-up” coding (Auerbach & Silverstein, 2003). After coding the data, I grouped my nodes as shown in Table 2 (see Appendix A for complete node structure). I wrote memos throughout the study, keeping a research journal and writing notes and ideas continuously as I gathered information.

4.1 Research Bias

Due to the nature of qualitative work, some amount of research bias is inevitable, and the researcher must accept and acknowledge the existence of this bias. As an environmental management student with a strong interest in local and sustainable food systems, I have a clear predilection for policies that support small-scale farmers and environmentally-sound agricultural practices. In choosing my interview subjects, I mostly focused on people and organizations who were participating in the local food system in some way. I only spoke to one eatery manager who was not doing any local and sustainable food purchasing, and I did not speak to any industrial producers or large-scale food distributors, for example. My biases also may have influenced the way I interpreted my subjects’ comments and answers to questions. Despite this, I attempted to remain aware of my own partiality throughout the course of this study, and I believe that I was able to keep an open mind both when collecting my data and interpreting the results.

4.2 Problems with Study

I did not encounter very many technical or logistical problems throughout this study, but I did lose several minutes of questions and responses from two separate interviews, due to battery problems with my digital recorder. In both cases (interviews with Stella Dee and Tavey Capps), I noticed that the battery had died, and was able to switch to a back-up system for the rest of the interview. While I was not able to recover the lost data entirely, I did write down the ideas that were discussed while the recorder was not functioning, though I did not end up using any of this information in the final report.

As mentioned, I did not record my interview with Eliza MacLean, though I had intended to. Instead, we took an informal, working farm tour, and I asked Eliza questions along the way. After the interview, I wrote down the main points and re-confirmed the content with Eliza before using the data in my analysis.

5. Findings

In this section, I will attempt to describe how Duke's local and sustainable food system functions within the context of my case study. Using the stories of my interview subjects, I will also discuss the role (and potential roles) of the university.

5.1 Case Study Setting

This study is geographically focused on Duke University, and includes both Duke and its associated regional food system. Duke is located in North Carolina's "Research Triangle," which is in the Piedmont region of the state and contains the cities of Durham, Raleigh, and

Chapel Hill. In addition to Duke, the Triangle is home to several other universities, including North Carolina State University and the University of Carolina at Chapel Hill (UNC-CH).

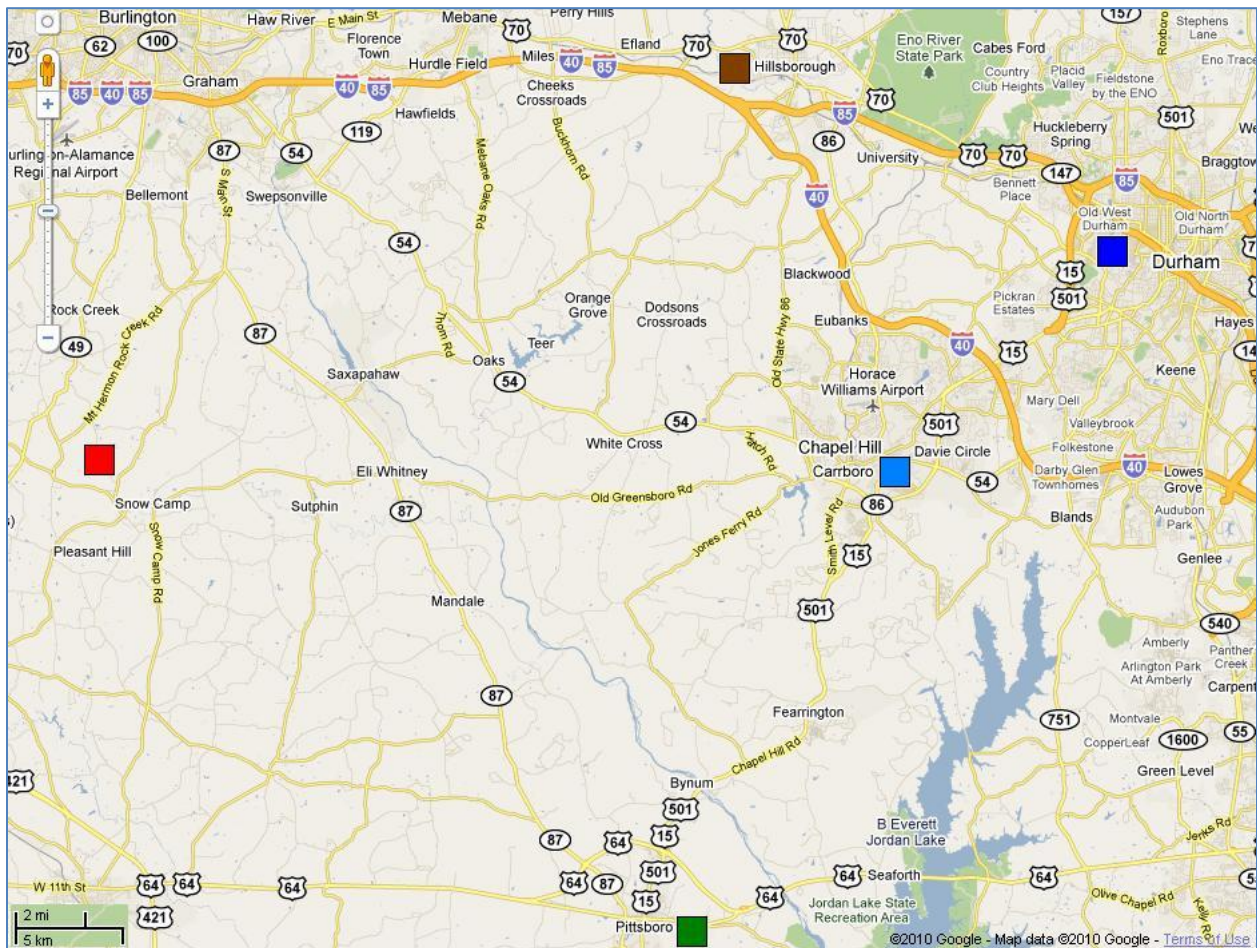


Figure 3. Map of central North Carolina, including portions of Alamance, Orange, and Durham counties. Squares show case study participant locations, as follows: red square, Cane Creek Farm, Snow Camp; green square, Eastern Carolina Organics, Pittsboro; brown square, Coon Rock Farm, Hillsborough; light blue square, UNC-Chapel Hill; and dark blue square, Duke University, Durham.

Duke’s current food system is global in scale – the university purchases food from all over the world. However, this study only considers Duke’s local and regional food systems, and the farthest I traveled to conduct an interview was to Cane Creek Farm in Snow Camp, North Carolina, a small town in Alamance County about a forty-mile drive from Duke. Figure 3 shows the general case study setting, with the locations of study participants indicated by colored

squares. This map does not include the entirety of Duke's local food system, by any means; it merely shows the location of the farms, businesses and other entities with whom I spoke throughout the course of the project. The Duke University Square represents all four eatery locations, as well as the offices of Sustainable Duke and Duke Dining Services.

Because of its climatic diversity and range of growing conditions, North Carolina is uniquely placed to host a thriving local and sustainable food community. Sandi Kronick, CEO of Eastern Carolina Organics, described it this way:

"...we're lucky here, that we can grow a fair amount of variety with the climate that we have. And having the mountains all the way to the coast we can actually do – in the same month – a fair amount of diversity from different regions. So, couple that with the fact that there's a really good knowledge base of organic farmers who have been working for decades to try to figure out how to do broccoli in the summer or lettuce, over-wintering...North Carolina is a good spot to be. Again, the proximity of farms to a really strong urban core demanding the product is pretty important too" (1/21/10, interview with Sandi Kronick).

Sandi's company benefits from the sustainable agriculture and organic farming experience in this region, as well as from the high demand for local and organic produce coming from the "progressive consumer community" (1/21/10, Interview with Sandi Kronick). Because of this fortuitous combination, the region is home to a thriving local and sustainable food system, which is growing stronger each year.

Additionally, due to its southern location, North Carolina's growing season extends through the winter. Of course, supplies are much lower during the cold part of the year, and the variety of available items decreases. Despite this, Durham is still able to support a year-round Farmers' Market, though it is smaller in the winter months.

Some farmers use special techniques to lengthen their growing season. Richard Holcomb, from Coon Rock Farm in Hillsborough, explained one of his methods – the use of double-insulated hoop-houses.

“...it gives us about 20 degrees more temperature, particularly at night. So if it gets down to 20 here, the plants would either die or not grow. Inside the hoop-house, it’s going to be 35 – 40. So it really gives us a couple more growing zones. It makes us more like Jacksonville, FL” (11/13/09, Coon Rock Farm interview).

Richard’s hoop-houses allow Coon Rock Farm to produce almost as much food in mid-November and in the winter as they do in the summer (11/13/09, Coon Rock Farm interview).

All of my interviews were conducted within Duke’s potential local food system. In the next section, I will discuss the food system in more depth, drawing from the perspectives of my interviewees.

5.2 Duke’s Local Food System: The Players

Duke University belongs to a complex and dynamic web of food system participants, from farmers and growers to processors, distributors, and chefs, to consumers who purchase and eat the food at home and at Duke. Figure 4 is a graphic representation of some of the main components of the food system I studied, and shows the flow of food among participants (directional arrows). Duke Dining Services and Sustainable Duke are shown here as a circle, with associative connections with both eateries and consumers within the Duke community.

In this study, I explored the diverse ways that people and institutions within this system make decisions about food. During interviews, I asked subjects about their roles in this local food system, individual motivations, and challenges they’ve faced when interacting with the other components of the system. Here I will present some of my major findings. I will proceed “from farm to fork,” beginning with the people who cultivate food, and ending with the ones who eat it.

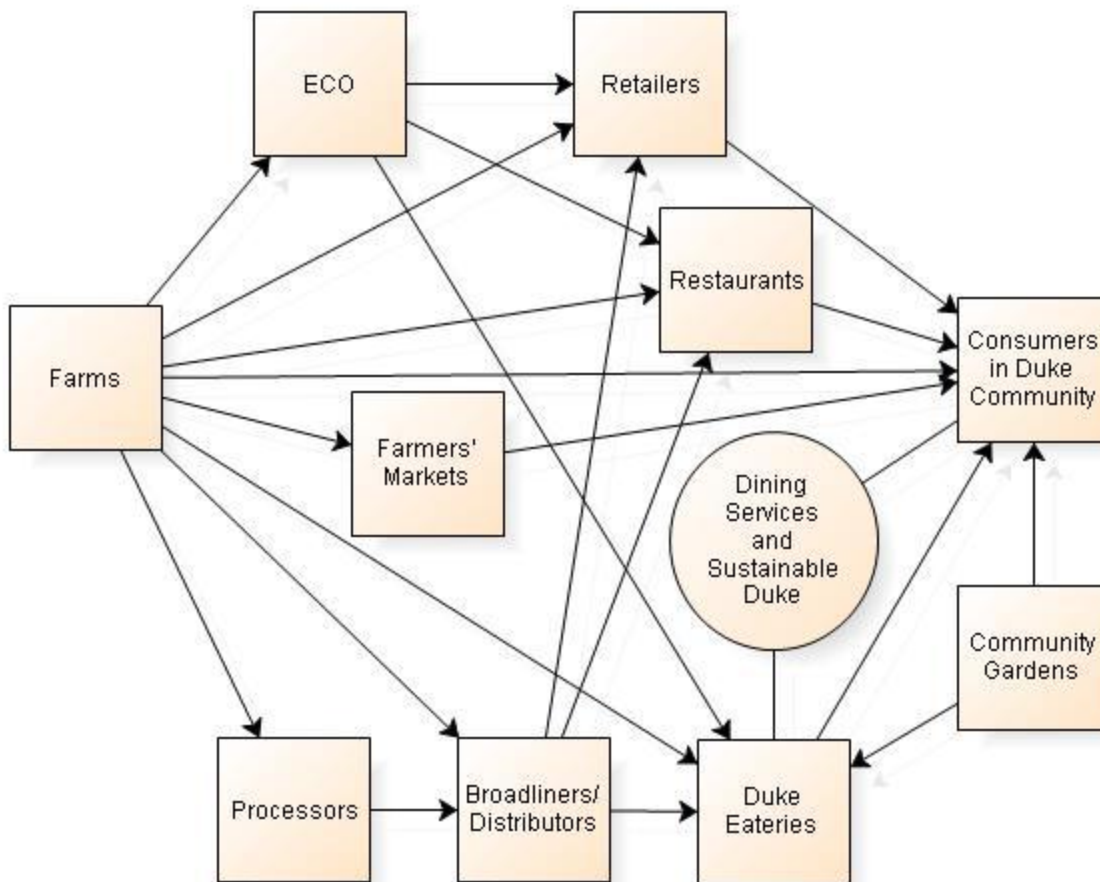


Figure 4. Food web map showing the major players in Duke’s local food system and the flow of food among them. Arrows indicate the direction of travel of food, and the circle and non-arrow lines show the associative connections between Duke Dining Services, eateries, and students.

5.2.1 Farms

I was fortunate to be able to speak with three farmers, who own and operate two different farms in this area. Richard Holcomb and Jamie Dement are the farmers at Coon Rock Farm, in Hillsborough, NC, and Eliza MacLean runs Cane Creek Farm in Snow Camp, NC. Both farms are sustainably managed and market their products to local purchasers. I connected with Coon Rock Farm through Farmhand, a Nicholas School sustainable agriculture student group, and I was introduced to Eliza MacLean through Dr. Charlotte Clark, my master’s project advisor.

Richard and Jamie are just beginning their sixth year at Coon Rock, a sustainable family farm that grows both vegetables and animals. The main farm is sixty-five acres, plus nearly one hundred additional acres of grass to feed the sheep, cows, and goats. They also raise heritage breed chickens (for both eggs and meat), hogs, ducks, geese, rabbits, and turkeys, and cultivate approximately ten acres of vegetables. All of their animals are pasture-raised without antibiotics or hormones. The vegetables are mostly heirloom varieties and are grown without the use of any chemicals, including fertilizers or pesticides. On the Coon Rock website, the farmers describe their philosophy in this way: “We concentrate on sustainably and bio-dynamically taking care of the land while letting it take care of us” (Coon Rock Farm, 2007).

While Richard and Jamie practice sustainable agriculture, Coon Rock Farm is not USDA certified organic. When I asked them why they decided not to pursue organic certification, Richard said,

The government owns the word organic...And organic isn't necessarily sustainable, particularly the way it's practiced now” (11/13/09, Coon Rock Farm interview).

Later in this report, I will discuss the USDA organic standards in greater detail, as well as the Coon Rock farmers’ perspectives on the subject. In short, Jamie and Richard are very committed to the health of their land and animals. Because they have worked hard to build trust and strong personal relationships with the people in their community, they feel that they do not need organic certification. They said,

“For us, it's more important that we know what we're doing is the right thing, and that our customers know” (11/13/09, Coon Rock Farm interview).

I asked Jamie how they communicated their practices to consumers. In her words:

“We explain the process, we explain how we grow things, why we grow them that way, and why we feel like going through the organic certification process is unnecessary and arcane” (11/13/09, Coon Rock Farm interview).

Richard and Jamie find that current demand exceeds supply – which, in Jamie’s words, “is nice.”

The farmers own two farm-based restaurants: Zely & Ritz, in Raleigh, and the Eno Restaurant and Market, soon to open in Durham. In addition, they run a 150-person Community Supported Agriculture (CSA) co-operative in the winter and a 250-person CSA in the summer. They sell at several local farmers' markets each week as well, including markets in Carrboro, Cary, Raleigh and Durham. Coon Rock also has a large internet presence, sending out a weekly availability email to three or four thousand people. On average, and depending upon the season, the farmers package and deliver several hundred orders per week.

Jamie and Richard also discussed several of the challenges they have faced as a small sustainable farm attempting to supply a local food system. One such challenge is associated with meat production. As Richard explains it,

“The other thing they’ve gotten real used to doing is just ordering prime cuts. Everybody wants lamb chop. Everybody wants steak. Who wants shank? Who wants backbone? Who wants leg of lamb? There tends to be an overlap between the higher end restaurants and the ones that are making the effort to do the local sustainable purchase. And those restaurants tend to serve prime cuts and not whole animal” (11/13/09, Coon Rock Farm interview).

The way our food system is constructed today, small meat farmers face difficulties when selling to restaurants or other customers that might not be used to working with the whole animal. One way the Coon Rock farmers have gotten around this challenge is to partner with chefs that are interested in using whole animal, and familiar with the additional planning that this sometimes requires.

“...most of the restaurants we work with are more amenable to the whole-animal approach. They don’t call up and ask for lamb-chops. They say, “Richard, can we have three more lambs? We need one next week, the week after, and the week after that.” Okay fine, got ‘em. And that works. And they make their own sausage...they use that entire animal to do soups and broths and stews, and not just lamb chops or leg of lamb or whatever. The prime cuts make up only about fifteen percent of an animal” (11/13/09, Coon Rock Farm interview).

Richard went on to say that restaurants must understand that they can't call the farm with short notice and expect to be able to buy a large amount of meat. Instead, chefs need to plan ahead, with the knowledge that smaller farms produce a limited quantity of supply.

The farmers also offered some useful advice regarding Duke's role in the food system. They emphasized the fact that Duke (or another similar university) has the potential to influence and support the local food system in positive and powerful ways. Richard gave the example of Duke choosing to purchase more regularly and on a larger scale from Eastern Carolina Organics, a local organic food aggregator:

"If all of a sudden, Duke became a customer of ECO, and ECO went from needing one case of kale a week to two hundred cases of kale a week, then ECO would go out and look for people to grow more kale" (11/13/09, Coon Rock Farm interview).

But, Richard also made it clear that transitioning towards more local food use would take time and understanding from the institution, especially at first. Furthermore, Duke would need to be committed to making the partnerships and relationships work – something that requires both funding and sustained effort.

"It would take time, it would take some understanding on both sides. And, it wouldn't be that hard, if one of the dining halls looked, and said "Here's what we bought for the last year," and went to someone like ECO and said – so next November, we're going to need this much of this, can you do that? Okay. Yep. This November probably not. But, with some planning, to next November...and it's not that much risk, because if it all broke, you could still call Sysco and get your kale. So they would have to want to do it. It would cost more, it would be a little more work, and it would take time to put it in place. So it would definitely be something they wanted to do" (11/13/09, Coon Rock Farm interview).

Jamie added, when asked why Duke might decide to make a move towards increased sustainable food procurement, "Their clientele has to encourage them." This idea was repeated by multiple interviewees in different roles, who each felt that the consumers needed to demand this type of food in order to encourage Duke to commit to it.

More specifically, one of the main difficulties for Duke would involve “going from making one phone call to a wholesaler to having to make ninety phone calls to individual farmers, who may often be flaky” (11/13/09, Coon Rock Farm interview). Currently, the food system is set up so that the least sustainably grown food is also the cheapest and most convenient to obtain. As Richard said,

“I think what you need is a more complete sustainable food system. It really doesn’t make sense for a chef to have to call 18 people to figure out if he’s going to have enough pork chops for dinner. So, there’s nothing wrong with a distribution channel. The problem we have right now is that the distribution channel is industrial” (11/13/09, Coon Rock Farm interview).

I also asked Richard and Jamie for their opinion regarding the higher cost of sustainable food. Richard offered this insight:

“Depends what you factor in – if you factor in the health care costs of eating the chemical-laced poisonous food, then it’s cheaper to buy local/sustainable” (11/13/09, Coon Rock Farm interview).

He continued with an example involving two pork chops.

“I mean if people saw me take two pork chops, and I told them “This pork chop’s five dollars, and this one – this one right here – they look alike, right? Well, I’m going to take this one and I am going to put it on the floor, I’m going to rub it around, and I’m gonna pee on it, and put it back on the table. It’s a dollar. No one would pay the dollar for that one – they’d pay the five. Well, that’s what they’re getting when they get factory food” (11/13/09, Coon Rock Farm interview).

To conclude, Richard again stressed the fact people would make different choices if they were more aware of the hidden sides of food production:

“So if people actually understood where the food came from, how it was raised, and where it came from – particularly meat – they just wouldn’t eat it. Because they would know it’s likely to make them sick. And then price isn’t an issue” (11/13/09, Coon Rock Farm interview).

My “interview” with Eliza (11/16/09) was more of a hands-on farm tour than an interview. Unfortunately, I wasn’t able to record our conversation, because we spent most of our time riding around the farm on a golf cart, herding baby calves and checking on the piglets.

Eliza explained that it was nearly Thanksgiving; things were extremely busy for her and the rest of the farm crew. Nevertheless, she passed along a wealth of information about her farm and her involvement in the local food system.

Eliza, who has an MEM from of the Nicholas School of the Environment, runs Cane Creek Farm with her business partner, Charles Sydnor. Charles and Eliza joined forces in 2007, combining Cane Creek with Charles' property, Braeburn Farms. Together, they raise unique breeds of pigs and cattle, as well as goats, chickens, turkeys, sheep, donkeys, and ducks. All of the livestock animals are raised on grass, in rotation through pastures and woods, which minimizes the need for antibiotics and increases the flavor of the meat, according to the farm's website (Cane Creek Farm, 2010). Eliza's intention was to create a mid-sized sustainable farm, with the feel of a much smaller operation (11/16/09, interview with Eliza MacLean).

Cane Creek supplies over twenty restaurants and provides beef weekly to the University of North Carolina at Chapel Hill. The farm also participates in four different farmers' markets in the area. Eliza emphasized the nature of her farm as a business – she made it clear that it was essential for her to be able to sell enough product to support farm operations, first and foremost. She explained that it has also been important for her to both market her products effectively and “be good for her word” (11/16/09, interview with Eliza MacLean). In a working farm-institution partnership, the purchaser must be able to depend upon the farm to come through with the right quantity of high-quality products.

Eliza's partnership with UNC Chapel Hill came about in part through the work of an active student activist group on campus at the university, called Fair, Local, Organic (FLO). Later, I will discuss the role of student activism and involvement in more depth.

5.2.2 Community Gardens

Currently, there are two student-run community gardens at Duke: the Honey Patch and the Duke Community Garden. The Honey Patch is located in the Sarah P. Duke Gardens, and was created jointly by the Duke Apiary Club, an undergraduate group, and Farmhand, a sustainable agriculture-focused graduate student group at the Nicholas School. The Duke Community Garden is next to the Smart Home, a LEED platinum live-in laboratory and dormitory, and was started by a group of undergraduate students at Duke.

I had the opportunity to interview the treasurer of the Duke Community Garden, Stella Dee, who is a sophomore at Duke. Stella's interest in sustainable agriculture began in high school, when she worked on an organic farm that belonged to family friends. Her family has always had a large garden providing much of the family's food in summer, and after arriving at Duke, Stella became involved in SEEDS, an urban garden in downtown Durham (1/13/10, interview with Stella Dee).

The Duke Community Garden came about during Stella's freshman year, when several different groups joined together around the project in the winter of 2008 – 2009. Stella and two other students had expressed interest in starting a community garden on campus, but they were in need of land. They connected with Rabbi Goldman at the Freeman Center for Jewish Life, and Scott Steinberg, the manager of the Smart Home at the time. Scott and Rabbi Goldman had also been talking about planting a garden – on land behind the Freeman Center and adjacent to the Smart Home. Neither of them wanted to lead the project, however. So, with the students' enthusiasm and leadership and the connections and experiences of Rabbi Goldman and Scott, the group began making plans. The Community Garden members started meeting in December, and

construction was initiated in January. According to Stella, it all “moved pretty quickly” (1/13/10, interview with Stella Dee).

Right now, the club receives funding from several sources, including general club funding for undergraduate student groups and Duke’s Green Grant fund. They have also applied for a grant from STARS – Students Taking an Active Role in Sustainability – which provides funding for students, faculty members, student groups and academic departments working on sustainability-related projects. Stella explained that they grow all of their food using organic and sustainable practices, and have been learning about gardening from many people and organizations, who have “been very nice,” in offering their expertise and advice. The garden also had a paid intern last summer, funded through Sustainable Duke (1/13/10, interview with Stella Dee).

When I asked Stella if the Community Garden had a mission, she explained that the unofficial motto of the garden was “Know what you eat, grow what you eat.” In her words,

“So really, we want to foster skill-sharing, on a practical level, and sort of awareness-sharing on a higher level within the Duke Community. And then from that, foster Smart Home-style kind of innovation, so say if an engineer (we have a lot of engineers involved) – if an engineer wants to try something, either with growing things, or with watering – then they have a place to try” (1/13/10, interview with Stella Dee).

Along with the hands-on lessons that students hope to share with others in the garden, Stella also intends to plan outreach activities and educational programming in the garden’s name. She is especially interested in bringing speakers to campus and using different forms of media to begin a conversation with her fellow students about “fair food” issues at Duke (1/13/10, interview with Stella Dee).

Last year, the Duke Community Garden group ran a number of volunteer workdays, inviting other campus organizations, fraternities and sororities, and individual volunteers to come and help with garden projects, large and small. While the students donated most of their produce

to food banks, they also gave some away to regular volunteers and members. In the fall of 2009, the group met with Bon Appétit, a management company that runs several on-campus eateries, to explore the possibility of selling some of their produce at the “Farm Stand,” a new Bon Appétit initiative in the Great Hall. Unfortunately, insurance and liability issues have slowed this process considerably.

The Duke Community Garden represents another potential supply – though a small one – of sustainable, fresh, and very local food for Bon Appétit’s Farm Stand. Perhaps most importantly, however, the garden is a place for students to engage with their food – to learn to grow things, dig in the dirt, and hang out with friends. Michael Pollan, in an editorial in the New York Times, describes one of the garden’s most important lessons: “The single greatest lesson the garden teaches is that our relationship to the planet need not be zero-sum, and that as long as the sun still shines and people still can plan and plant, think and do, we can, if we bother to try, find ways to provide for ourselves without diminishing the world” (Pollan, 2008).

5.2.3 Food Processors

In today’s industrial food system, produce, grains and meat usually travel from farms to a number of different places before arriving on the table of the consumer. Much of the packaged food sold in grocery stores has been processed in some way; in fact, many foods contain several ingredients that were changed from their original state (animal, vegetable, mineral) into something else. Furthermore, most meat is processed in large, automated factory-style facilities.

Within a locally-oriented food system, vegetables are not usually processed into another kind of product before they reach the kitchen – in other words, they are sold “whole,” whether directly from the farm, as a CSA share, at a Farmers’ Market, or through some other channel.

Most locally grown meat, however, does have to be butchered and packaged before it is sold to customers. I did not speak to any food processors during this study, primarily because “processing” plays a smaller role in the transition from farm to table in a local (as opposed to within an industrial) food system. Despite this, I would have been interested in conducting an interview with a local butcher, baker, cheesemaker, or other such “middle-person,” but my study scope was time-limited, and I had to forego this particular perspective.

Sandi Kronick, of Eastern Carolina Organics, was able to offer (second-hand) some ideas on the role of “processing” in a local food system. She recounted a recent conversation with the owner of a farm and brewery in coastal North Carolina, who purchases meat locally and sustainably and does all of his own butchering. Sandi spoke of her friend’s views on the word “process,” as it is applied to food in today’s world:

“And he...went off about how awful it is that we use the word “processing” for animals, because with a local, organic perspective in a sustainable food system, it has nothing to do with “processing.” It has everything to do with the fact that no one is butchering – there is no neighborhood butcher anymore. The whole thing is this huge mass-process system. If we want to move towards an organic or a sustainable system, we have to get away from the word processing, and away from that awareness, and kind of pedagogically move everyone towards the realization that it needs to be...butchered on a small scale, with care, with integrity, et cetera. And the very word “process” is the entire reason why we cannot achieve a sustainable food system” (1/21/10, interview with Sandi Kronick).

5.2.4 Eastern Carolina Organics: An Organic Produce Aggregator

Sandi Kronick, CEO of Eastern Carolina Organics (ECO), explains the origins of her business this way:

“Eastern Carolina Organics was started in 2004 as a pilot project, to basically see if people were going to put their money where their mouth was. And when I say people, I mean, the growers who complained about not having any consistency from the buying community, and the buyers, who complained about not having any consistency from the suppliers” (1/21/10, interview with Sandi Kronick).

ECO markets and distributes wholesale organic produce to retailers, restaurants and other buyers, enabling farmers to profitably sell their products, and providing a source of fresh, local, and environmentally friendly produce to customers. As a farmer-owned company, 80% of sales go back to the growers. ECO started originally with a pool of organic tobacco farmers in North Carolina, and expanded to include a number of other organic growers, including new converts to the organic farming system. It has been profitable since it was launched as a for-profit business, and Sandi believes strongly in operating without debt, “in the black, all the time.” She also feels that farmers should be in tune with their farms as businesses, and thinks that the monitoring and reporting requirements embedded within the USDA organic standards are often helpful to the farmers.

You know that’s sustainability right there – it has nothing to do with soil, if you’re not making sure that you’re gonna have a business next year. You know, good for the soil, but if you’re gonna have to sell your farm to a housing development, there’s nothing sustainable about that (1/21/10, interview with Sandi Kronick).

ECO works with Duke in a number of ways, most notably through Bon Appétit, the management company that runs The Great Hall and the East Campus Marketplace. ECO sells produce to several off-campus Duke-connected facilities, such as the Duke Diet and Fitness Center, and the Center for Integrative Medicine. They also supply the Refectory on a limited basis, though the volume of orders from that particular eatery has fluctuated. As Sandi says,

“...there’s never any judgment involved, and you know – we want to be that system that’s there for people as much as they can use it” (1/21/10, interview with Sandi Kronick).

Partnering with universities is challenging for a company like ECO for other reasons as well. In Sandi’s words,

“And of course, working with the college system, you’re missing out on some of the most critical months of produce, so that’s kind of a bizarre challenge, in some ways. Just when we’re ramping up and getting ready to sell some really affordable stuff, is when the cafeterias are closing up” (1/21/10, interview with Sandi Kronick).

As I will discuss later on, this growing season-demand mismatch is also a problem for eateries, which tend to lose their customers in the summer, and struggle to find a steady supply of fresh food in the winter.

In general, ECO is focusing on how to maintain relationships with higher volume customers, like universities and other institutions. Within the local food system, Sandi says, “the crowd brings the crowd,” and

“We’re here to help bring the crowd, but not at all compete with the farmers market type of grower. And therein lies our key to try to really figure out how to work with institutional customers like Duke and things like that. Because those are the very same customers that would have a very hard time buying from ten different farmers for ten different items. You know, that consolidated type of feature is really important to a lot of customers” (1/21/10, interview with Sandi Kronick).

Food liability insurance is also very important to institutional customers like Duke. Regulations require that all food served to students be protected by a certain level of insurance, which covers the institution in the event of food-induced illness. While many small farms do not have the types or amount of insurance needed by universities, ECO holds liability insurance that covers all of their growers. This is convenient for IHEs, because it means that they can purchase and sell ECO’s products directly without violating regulations.

When I asked Sandi about her biggest challenges in beginning ECO, she mentioned three main issues, including access to capital, post-harvest handling, and seasonality. She also said that while ECO’s management had a lot to learn early on in the process, people were extremely open, helpful, and supportive. While ECO didn’t necessarily try to “gain access to capital,” they did need expensive post-harvest handling equipment, both on the farms and in their warehouse.

As Sandi explained,

“We only hold the product for twenty-four hours – it goes right back out, but if we can’t hold it in various different temperature zones, and we’re making a sacrifice a degree or two in one direction here, and a degree or two in one direction here to marry it onto one

cooler, one temperature zone, then you're gonna have an impact on shelf life and quality" (1/21/10, interview with Sandi Kronick).

At the beginning ECO had one truck and one cooler, which held about four pallets. The business grew rapidly, and within a month they were too big for their equipment. Since they added two more temperature zones (now they have three total), their quality has grown tremendously. Now, ECO's main challenge is post-harvest handling. Because all of the growers can't afford very expensive equipment for washing, packaging, and storing the produce, they are all doing it differently. Sandi described the problem:

"...some super high-tech, some low-tech, and the bottom line is – the very basis of our company is to be able to receive orders from the customer and then tell the growers what to harvest. And then it needs to come to us that same day. You're not giving anyone the right amount of time to bring the temperature down on those items. So either they're gonna have to harvest it the day before knowing that we're good at selling everything that they want us to, or...we're going to have to pull the temperature down in our cooler..." (1/21/10, interview with Sandi Kronick).

She went to explain that there were a lot of technical issues involved in this part of the process, which are difficult to deal with when all of your growers are using different systems.

When I asked Sandi about how seasonality affected ECO, she instead spoke about what happens to her customer base when weather affects the produce supply:

"You lose a customer completely. You supply them with collards for four months, and then, you know, a deep frost freeze comes, and we lose our collards. And I, I'm like calling the guy back – 'our collards are bouncing back, our collards are bouncing back!' – and I'm sure we've lost him for six months or more" (1/21/10, interview with Sandi Kronick).

She went on, however, to explain that ECO has a number of trusted partners that understand their challenges, and do their best to support them:

"We have certain relationships with certain buyers that are so good to us, that they'll jump back in. They'll say, oh, I'm sitting on a load of collards right now, but good to know yours are back in action, and I'll be able to pull from you next week. But those are very few. Those are the companies that are just... Whole Foods Market is just one hundred percent committed to making us successful, and so for them, it's a lot easier for us to just sneak back into their system" (1/21/10, interview with Sandi Kronick).

5.2.5 Duke Dining Services

Early in this study, I met with Barbara Stokes, the Assistant Director of Duke Dining Services (DDS), and Tammy Hope, the Quality Assurance Manager for DDS. Dining Services is responsible for overseeing over thirty individually-contracted eateries on the Duke Campus. Staff members complete annual contract reviews, administer the PACE program (Performance Assessment for Culinary Excellence), and respond to student requests and concerns. According to their webpage, their goal is to provide “a healthy and enjoyable experience” for all Duke students who dine on campus (Duke Dining Services, 2010a). The comprehensive dining program features a great variety of options and choices (including vegetarian and allergen- and gluten-free meals), available at convenient times and many locations on both East and West Campus.

During this meeting, I explained my original objectives to Barbara and Tammy. Initially, I had hoped to develop a new section for the PACE system, focused on local and sustainable food purchasing in Duke’s eateries. However, Tammy and Barbara brought up a number of important issues that I had not initially considered. My final recommendations take the concerns of Dining Services into account.

Both Barbara and Tammy emphasized the importance of keeping cost in mind when working with the PACE system. PACE requirements must be fair to all of the eateries, and DDS made it clear that some eateries would not be able to afford the additional expense of purchasing local or sustainable food. In addition, each location has a different contract and a different commission, in part based upon their overall food expenditures and the types of food they are sourcing.

Barbara and Tammy cited several other obstacles that Duke eateries might face when attempting to increase their local and sustainable food purchasing. They mentioned liability insurance, the issue of supply volume and regularity, and the fact that many local suppliers do not deliver with the regularity of the more common purveyors, such as U.S. Foods or Sysco.

Dining Services also spoke about the fact that most of the eatery managers do not know where their food was coming from, and don't have any sort of system in place to track this information (11/13/09, meeting with Duke Dining Services).

5.2.6 Sustainable Duke

Another important player in Duke's local food system is Tavey Capps, the Environmental Sustainability Director at Duke. While food is not one of the main issues addressed by Sustainable Duke, Tavey has led a number of projects and initiatives that have greatly improved the sustainability of dining operations at Duke. She described her general responsibilities in this way:

"... my role is really to help Duke decrease our environmental footprint as much as possible, as far as operations, student education – and there's lots of different pieces to that. One of the big things we've been focusing on recently is Duke's greenhouse gas footprint – the overall climate commitment we've set up – with a target of 2024 for climate neutrality" (1/20/10, interview with Tavey Capps).

In June, 2007, Duke President Richard Brodhead signed the American College and University Presidents Climate Commitment (ACUPCC), agreeing to (1) initiate the development of a comprehensive plan to achieve climate neutrality as soon as possible (including the completion of a GHG emissions inventory), (2) initiate two or more of a list of "tangible action" to reduce GHGs while the plan is being developed, and (3) make the action plan, inventory, and progress reports publicly available through AASHE ("ACUPCC," 2007-2009). Sustainable Duke published Duke's most recent Climate Action Plan in October of 2009, called "Growing Green:

Becoming a Carbon Neutral Campus” (Campus Sustainability Committee, 2009). The plan contains the following five specific focus areas: transportation, energy, offsets, education and communication. While some of the environmental impacts of dining services are addressed in the energy section of the plan, food procurement is outside of the scope of the emissions inventory and not included in the Climate Action Plan.

Despite this, Tavey and Sustainable Duke work regularly with DDS on projects related to the “greening” of dining services. Because of the unique structure of the Duke dining system – with many independent contractors who are organized by Dining Services – Tavey and DDS have tried to find ways to encourage different eateries to improve their environmental sustainability without setting mandates:

“The philosophy I have seen has been more to provide incentives to the different contractors to implement more sustainability elements, as opposed to dictating ‘you will do X, Y, and Z.’ You know, there’s a lot of differences in terms of capacity and size of establishments, types of food and where they are, and I think there’s not really a one-size fits all way of doing things. So they want to try to make it fit for the different contractors in the space that they’re in” (1/20/10, interview with Tavey Capps).

Since arriving on campus four years ago, Tavey has seen a lot of positive changes at Duke, including the hiring of Bon Appétit Management Company to run the Great Hall, East Campus Marketplace, and several other eateries. As she explained it,

“I think Bon Appétit coming on campus a few years ago has been a really good change. They...part of their overall business philosophy is focused on sustainability. Aramark, the contractor before – I didn’t have as much interaction with, because they were leaving as I was starting at Duke – but they didn’t seem as proactive as Bon Appétit in many ways. And I think that’s been really good – Bon Appétit has brought a lot of their own enthusiasm for this. It’s not just students pushing for it, or Dining Services or others trying to push for it; they brought it themselves” (1/20/10, interview with Tavey Capps).

In addition to Bon Appétit, Tavey mentioned the Refectory cafés at Duke Law and Divinity Schools as standout operations with respect to sustainability and local food purchasing. She pointed out the fact that sustainability is part of the business philosophy at the Refectory, and mentioned that purchasing characteristics vary a great deal from eatery to eatery, noting that “It

really depends on who you are and who the vendor is, and what the focus is” (1/20/10, interview with Tavey Capps).

Sustainable Duke runs a program called Students for Sustainable Living, or SSL, which employs undergraduates to work on “building a more sustainable campus culture through new and innovative initiatives and outreach” (Duke Sustainability, 2008). SSL has an active green dining committee, which is currently focused on developing post-consumer food waste education in the dining halls.

5.2.7 Duke Eateries

Duke has over thirty different eateries, all of which are contracted separately and supervised by DDS. Due to time constraints, I did not conduct interviews at all of the eateries. Instead, I chose four establishments that I felt represented the range of options available to students at Duke.

The Loop Pizza Grill

Dennis Lane is the owner of The Loop Pizza Grill on Duke’s West Campus, in the West Union building. Dennis has been with The Loop for fifteen years, and at the Duke location for ten, ever since it was opened. When I asked Dennis about his role as owner of The Loop, he said simply, “We serve kids lots of food” (1/26/10, interview with Dennis Lane). He believes that the students choose his restaurant for the variety and consistency of food. The Loop serves a large range of standard American fare, including pizzas, sandwiches, salads, desserts, and milkshakes, among other menu items.

The Loop is part of a regional chain of franchise restaurants, all of which are located in the southeast, in Florida, North Carolina and Georgia. Like several of the other chains and

branded concept eateries on the Duke campus (McDonald's, Chick-Fil-A, Panda Express, etc.), The Loop purchases food according to requirements set forth by the parent company. As Dennis explained, all of the individual franchises use the same food distribution company, in part because it's easier to track food "if there is a recall" (1/26/10, interview with Dennis Lane).

Additionally, as Dennis noted,

"It also is buying power. When you buy for – I think we're thirty stores – when you buy for thirty stores you can get your items greatly discounted because you're buying in bulk. And that's the reason people have franchises – they can reduce their food costs..."
(1/26/10, interview with Dennis Lane).

Currently, The Loop's foodservice distributor is Institutional Jobbers Company (IJ), which was recently bought out by Reinhart Foods. As a "back-up," Dennis also sometimes buys through U.S. Foodservice, the second largest distributor in the country. He explained that he used to use U.S. Foodservice for everything, but six years ago The Loop company owners decided to bring all of the franchises together under one distributor, saving 20-30% of food purchasing dollars, according to Dennis (1/26/10, interview with Dennis Lane).

Companies like U.S. Foodservice and IJ are called broadline distributors, or broadliners, meaning that they deliver a wide variety of items to a range of different account types. They operate on a national level, though in some cases they also offer regional or local products, depending upon the company and location. When I asked Dennis about local food purchasing at The Loop, he said,

"We have nothing on the menu that is a local item. I would guarantee that ninety-nine percent of our lettuce comes from California. Um, tomatoes are probably California or Florida, one of the two, sometimes, maybe even Texas – not positive on that. I think there's a few tomato growers down there. And, you know everything else seasonally rotates around the U.S. Whoever can sustain the supply. Um, that's the main problem with franchises – when we buy something, we don't just buy some lettuce, we buy an entire field of lettuce. Then we use that field for the year, when it's out, we move to the next one. Um, and that's – I'm pretty sure McDonald's does the same thing; a couple of the other places probably do it – that's the nature of the business these days" (1/26/10, interview with Dennis Lane).

All of The Loop stores offer the same options and use the same recipes and menus, though Dennis has two things that none of the other Loops have – mozzarella sticks and fresh fruit, neither of which affect The Loop’s concept. As he explained,

“Actually, Duke asked me to carry the fresh fruit. And, um, I actually buy it locally when it’s available. During the winter time in North Carolina, the only thing you can have here locally is apples, and um, people get tired of apples at some point. But...you know, normally I would not have the fruit, but Duke, they wanted another healthier option there for the kids, and we sell a lot of it. I don’t mind doing that” (1/26/10, interview with Dennis Lane).

While The Loop doesn’t have a lot of flexibility in its food purchasing decisions, the eatery has always done well on PACE’s “Greening” section, recycling and composting both pre- and post-consumer waste. Dennis was enthusiastic about the new re-useable clamshell program (run by Dining Services and Sustainable Duke), though his eatery was not chosen to participate in the limited pilot program.

Dennis thinks that PACE’s “Greening” section has made a big difference since it was implemented, but feels that the students at Duke need to do more to match the efforts of the businesses. Dennis explained that The Loop is one of the locations at Duke that has a dishwasher on-site, meaning that eat-in customers are served food on re-useable cookware. To-go meals, however, are served in disposable containers. Dennis described a trend in student behavior that he has noticed this year:

“I hate it when I see kids get food to go and eat here, and throw it away. It makes no sense to me...I’m getting off track, but – they need to start with the students and the way they look at things, versus the businesses. The businesses are doing probably seventy percent more than a student is. The students are...it’s amazing. I actually just talked to Jim Wulforst on the way in...this year, our sells are probably fifty-fifty for here and to go. And, of the fifty percent that is to go, probably thirty to forty percent of ‘em actually eat here and throw it away. So, it’s uh...it could be something that could be looked at” (1/26/10, interview with Dennis Lane).

In my opinion, this would be an ideal opportunity for an education or behavior change campaign, perhaps as a specific project for an undergraduate committee, like the Students for Sustainable

Living Dining Team. At the moment, however, Dennis doesn't communicate directly with any Duke offices except for Dining Services. While DDS is very responsive, Dennis doesn't feel like eatery managers have much connection to the rest of the Duke community:

"We're basically Dining Services employees, if you look at it. And we don't have a whole lot of say within the Duke community. Now within Dining Services, they will try to make things right. But outside of that...it's interesting that Dining Services is almost like its own entity. And it's really not that much part of Duke sometimes. They actually rent their spaces from Duke – so it's kind of an interesting model, from that standpoint" (1/26/10, interview with Dennis Lane).

Tommy's Rubs & Grubs

Tommy's is located in McClendon Tower, in the Keohane quadrangle of Duke's West Campus. Owner Tom Meyer, a Duke alumnus, also runs the Q-Shack, a local barbeque restaurant, and Green's, an eatery at the UNC hospital. All of Tom's restaurants serve barbeque and source food from local farmers and ranchers. Everything is cooked to order, fresh on property and from scratch, although the barbeque is prepared in larger batches in Tom's Raleigh restaurant and delivered to the other locations. At Duke, Tommy's is open for dinner only, and serves undergraduates and graduate students, as well as second and third shift workers.

When Tom was a student at Duke, there were "a bunch of different kinds of eateries on campus that were just fun" (1/26/10, interview with Tom Meyer). After returning to the Triangle from California, where he spend about ten years working in the wine business, Tom noticed that there weren't any eateries like that on campus any longer. As he put it,

"You know, there were tons of great eateries, and there still are, but there was no place for kids to hang out, have a beer, watch the game, have a hamburger, and be cool. So we decided to do that. And that was three and a half, almost four years ago" (1/26/10, interview with Tom Meyer).

I asked Tom why he came back to Duke, and Tom continued, explaining his motivation further:

"One, I just, I love Duke, and I love the energy that's here. It was immediate for me when I was an undergrad – I knew I wanted to be here. But the second reason is – I think it's a great opportunity to introduce foodservice and the world of farming and the world

of agriculture to students in a way that is personal. And it was personal for me when I was here, it was a career decision for me. I managed bars and restaurants on campus and off campus. And I made a career out of the wine business and the food business and that kind of thing. And it started here. So I kind of wanted to give that part of it back without...pushing it on people. I didn't want to be aggressive about it, but I wanted people to be able to come and see how it's possible to have a career without being a waiter for the rest of your life" (1/26/10, interview with Tom Meyer).

At Tommy's, Tom uses a foodservice company called Pate-Dawson to supply all of his staple products – his “canned goods, and Splenda and sugar and all that” (1/26/10, interview with Tom Meyer). Tom explained that Pate-Dawson is different from U.S. Foodservice or Sysco because they're a fourth generation North Carolina owned independent distributor from Goldsboro, N.C. Pate-Dawson has access to a buying group called Pocahontas, which

“...enables them to buy canned goods and packages of ketchup, and all the different things that we would use, um, in a large format – enables me to buy like a chain restaurant without having to act like a chain restaurant. So that's particularly cool” (1/26/10, interview with Tom Meyer).

Tom works with a specific local farmer for his hogs, which he buys “whole animal.” All of the meat served at Tommy's is raised naturally, without hormones, steroids, or antibiotics, and slaughtered fresh. Pate-Dawson also acts as a procurement agency, receiving Tom's meat deliveries at their dock, and putting it on their truck to be transported to Tom's restaurants directly.

Tom also described how he interacts with the poultry market:

“...the poultry market is vastly different from the pork or the beef market. The distinction is I'm buying from small family farmers who are the production arm for large packers like Tyson, and House of Raeford, and all of those other processors. And Pate-Dawson prefers Tyson, because their quality-control is so much better, and because they have regional farms and factories. So they recently made the switch from Raeford to Tyson. And, um, I like the quality pretty well, and I like the fact that I can talk to the Tyson folks to let them know what spec I want, and also what I don't want. I don't want a junked up bird. I want it fresh, not frozen. I want it hormone and steroid free, and I want to know its providence – I want to know where it came from” (1/26/10, interview with Tom Meyer).

Tom considers several factors when making his meat purchases, including the origin of the meat, and whether or not it was naturally produced. He clearly prioritizes North Carolina purchasing, and seems proud of the fact that he is able to work with so many North Carolina producers.

Currently, Tom is working with a rancher at Apple Brandy Farm in North Wilkesboro, N.C., testing the meat for quality at his Raleigh location. Apple Brandy Farm is a third generation family farm run by an N.C. State alumnus farmer, which produces all natural, pasture-raised beef. By mid-February, Tom hopes to have Apple Brandy beef at Tommy's. Tom explained that while the cows are grass-fed, they are finished for three or four months on North Carolina-grown corn for marbleization. Tom highlighted the lower environmental impacts of this meat, explaining that this ranch contributed less to "the CO₂ problem."

"So the impact on the environment is twofold in a good way – one, all the methane that's released in the excrement is stamped into the ground, that causes the grass to grow and the chickens to be fed behind them, but at the same time, they're not using – uh, they're a – they're not a contributor to the CO₂ problem, they're actually a consumer of CO₂ on the ranch" (1/26/10, interview with Tom Meyer).

The specifics of climate change science can be difficult to fully express, particularly for someone who does not focus on the issue each day. Tom is aware that beef production contributes to climate change through the release of methane, though his explanation does not quite capture the nuances of the greenhouse gas cycles in question. In any case, Tom has chosen this particular supplier because he believes that its meat has a lower environmental impact than other beef options available to him. Interestingly, as detailed in the next section, other eatery managers have different thresholds for what constitutes "sustainable" or "natural" meat. While Tom is not bothered by Apple Brandy Ranch's practice of "grain-finishing" their cows, Nate Peterson (of

Bon Appetit Management Company) eschews this very same method, stating that it is “not the most natural way to do things” (11/20/09, interview with Nate Peterson).

I also asked Tom if he had advertised his use of local meat to the students, and he explained that he hadn’t done very much education around this particular issue. He said,

“...what I’m learning more and more is that business has a responsibility to act in a proper way with its resources. And the extent to which consumers vote with their wallet is a good thing, but it’s not a primary driver for people. You know, I don’t believe that people come to Tommy’s because they know that the food came from North Carolina. I think they like the food, they enjoy the atmosphere, they get good service, it’s at a fair price, and they come back” (1/26/10, interview with Tom Meyer).

Since Tom has made some significant efforts to purchase locally in his eatery, I asked him about some of the barriers and challenges he’s faced along the way. Tom cited two main obstacles, the first of which was price. He explained that, for Tommy’s, organic was too expensive. On the other hand, local food – without the sustainable or organic distinction – could actually be cheaper than food sourced from afar, in some cases. The other main issue for Tom in working with local producers has been product consistency and quantity. In one particular example, Tom partnered with a several local farmers to purchase their hogs. Unfortunately, his costs went up and “they ran out of animal,” in the end. As he described it,

“So...that’s pretty common with these guys. They’re not prepared for even modest growth. The valve is either on or it’s off. And that’s a very frustrating thing” (1/26/10, interview with Tom Meyer).

In general, Tom manages his business from a triple bottom line. As Tom explained,

So, what that means is – we have an economic bottom line, we have an environmental bottom line, and I have a human equity or employee bottom line. And when we have active goals, I write my marketing plan with active goals in each of those. And sometimes, like last year and this year, they are in nice harmony with one another. Sometimes you have to put the pedal on one of them, because your business demands it.” (1/26/10, interview with Tom Meyer).

Because he is committed to employee welfare, Tom went on to explain that he will work directly with his employees to arrange hours and vacations so that the business is able to get through the

busier and slower seasons without reducing their paid hours. In effect, he asks employees to take time off during quiet months, so that they will be around to work during the summer, when business is heavier. Overall, however, Tom said,

“...we work under the premise that we can do the most good by being in business. Doesn't do anybody any good if we're out of business” (1/26/10, interview with Tom Meyer).

Bon Appétit Management Company

Nate Peterson is the Director of Operations for Bon Appétit Management Company, which runs seven different eatery locations at Duke, including the Great Hall, the East Campus Marketplace, Trinity Café, the Freeman Center for Jewish Life, Subway, Chick-fil-A, and the Training Table/Devil's Den. These eateries employ 140 – 150 people and bring in approximately \$13 million in revenue annually. During the year, Bon Appétit serves faculty, staff, and students at Duke, as well as camp participants in the summer.

As a company, Bon Appétit is committed to socially responsible practices and culinary excellence. They began nearly twenty-three years ago as a small catering operation, and now run over four hundred cafés in twenty-nine states. Their business is split evenly between higher education accounts and “business and industry” accounts. Bon Appétit's mission states that they strive to “create food that is alive with flavor and nutrition, prepared from scratch using authentic ingredients” (Bon Appetit Management Company, 2010).

Bon Appétit's website details the company's kitchen principles and sustainable sourcing policies (Appendix C), and Nate explained that they implement these policies through a number of different programs. In 1999, Bon Appétit “had an awakening,” as leaders in the company began to realize that “local food sheds were disappearing and food was being grown to look pretty, but not necessarily to taste good” (Bon Appetit Management Company, 2010). At this time, Bon Appétit started its “Farm to Fork” program, which is a company-wide initiative to

source foods locally. In search of flavorful, fresh ingredients, they support “true family farms where the owners live on or nearby the land, work it themselves and therefore are conscientious stewards” (Bon Appetit Management Company, 2010). They “also support farmers who are preserving the diversity of our food choices by planting heirloom vegetables rather than genetically-modified ‘super-produce’” (Bon Appetit Management Company, 2010). Nate talked about some of the farms that they use at Duke, and explained that Farm to Fork vendors are usually vetted in person, and must have a certain amount of liability insurance per Duke’s requirements. If the farm is too small to have delivery service, sometimes Nate has to go out to the farm to pick orders up. Once the farm is set up as an official Farm to Fork participant, they can be paid more quickly, with “payment upon receipt” (11/20/09, interview with Nate Peterson). Nate spoke of the ranch where he purchases grass-fed beef:

“I’ll use an example – Harris Acres Ranch – I use them. They’re a grass-fed beef, all natural, one hundred percent natural, they don’t grain finish. The typical rancher will put cows out to pasture grass-fed, but then in the last couple months of the cycle, they will bring them in and pump them full of corn or other grains to beef ‘em up, and they’re gonna get a third more product out of that. Well, it’s also not the most natural way to do things either” (11/20/09, interview with Nate Peterson).

He explained that they have a strong relationship with Harris Acres, and will buy as much fresh meat as possible from them, and then they will freeze some as well. While they’ve “gone leaps and bounds in the four years” they’ve been working here, Nate described how Bon Appétit’s farm partnerships have evolved in places where the company has had more time to grow together with the farms. In the Pacific Northwest, for example, Bon Appétit has been working with the same farmers for over ten years. As Nate said,

“...so now it’s to the point where they’re coming to us, saying “What do you want me to set these two acres aside for?” and we can say, “We want you to grow tomatoes,” or “We want you to grow long beans,” or “We want you to grow this or that” and so it’s to that point where it’s amazing” (11/20/09, interview with Nate Peterson).

When I asked Nate how he initially connects with these farmers, he explained that sometimes they come to him, and sometimes he goes out looking for suppliers at conferences, farmers' markets, or other meetings. Bon Appétit also does a lot of business with Eastern Carolina Organics (see above). In total (and not including ECO's farm suppliers), the company works regularly with around fifty-three local producers. They spend about \$2 million annually on local food in this region of its business, which includes the seven eateries at Duke plus one other higher education account, and several business and industry accounts. Nate estimates that around \$1.7 million of that is spent on local food purchasing at Duke alone (11/20/09, interview with Nate Peterson).

Nate explained that Bon Appétit also works hard to raise awareness of food issues through education and outreach in its eateries. The company sponsors annual day-long events in cafés nationwide, including the "Eat Local Challenge," which began in 2005, and the "Low Carbon Diet Day," which started in 2008. Nate spoke about the impetus for the Low Carbon Diet day:

"The food system as a whole, you know, depending on who you talk to and what data you look at, is responsible for a quarter to a third of all the carbon emissions in the world. So there's steps we take not just on that day; on that day the things that we focus on are customer awareness. We have a low-carbon-diet calculator...you can click right on it, and you can punch in what you had for lunch that day, and it will tell you what your carbon footprint of that was" (11/20/09, interview with Nate Peterson).

During the annual Eat Local Challenge, chefs are challenged to source everything locally – within 150 miles – for one meal at one of their stations, with the exception of salt. Nate explained that they generally start planning this event about six to eight weeks ahead of time, though it helps that they already work with many local suppliers on their Farm to Fork program. Bon Appétit also partners with Sustainable Duke and the Recycling Coordinator to run the

annual freshman picnic, which attracts nearly five thousand attendees (11/20/09, interview with Nate Peterson).

I asked Nate to tell me about some of the barriers they've encountered throughout their work within the local food system, and he told me that Bon Appétit hasn't encountered many obstacles, due to its unique business model:

"The infrastructure of Bon Appétit is geared towards the greater common goal already. We're a very chef-driven company, not a management-driven company, per se, if you wanted to break those two apart. The way we handle business and do business – we menu seasonally and we menu according to region. And, you know, those key components right there really make the greater goal a lot easier to achieve. Instead of just being a cycle-menu driven company that says, you know what, this is the menu for six weeks, and at the end of it, start it over again. We change according to the availability – what is in season...as long as the infrastructure is set, a lot of those hurdles and obstacles fall by the wayside" (11/20/09, interview with Nate Peterson).

With that said, Bon Appétit accepts that "buying one hundred percent locally is not yet practical" considering the overwhelmingly industrial nature of our food system. Nate explained that they do use a "big broadliner" – a national or regional food distribution company that delivers a variety of items to a range of different buyers (see "The Loop Pizza Grill," above). As he put it,

"I'm sure you can imagine doing the numbers to the tune – everything isn't always available locally. We do purchase anything that is available locally as a first choice" (11/20/09, interview with Nate Peterson).

As a second choice, they use U.S. Foodservice at Duke, though most other Bon Appétit accounts use Sysco.

I asked Nate whether Bon Appétit charges more for their meals, because they are sourcing so much food locally. In response, he expressed his regret regarding the structure of today's food system:

"You know, Taco Bell is always going to be cheaper than something that you...bought locally that was organically raised, and handled sustainably. And hopefully the food system will turn around so that's not the case, and it's the opposite of that...that would be the wish of most people – that the healthier options and the more socially responsible options are the ones that are less expensive than the others" (11/20/09, interview with Nate Peterson).

He also explained that he works closely with vendors like ECO, for example, to negotiate lower prices for bulk items. Nate made the case that sometimes it is a misconception that eating locally and organically is more expensive.

“...but if you’re eating in season, a lot of that goes away. You know, uh, a fruit or vegetable that’s being flown here or freighted here through ocean liner from Peru, is obviously going to cost more than that same product that was grown right here in North Carolina, and consumed within its growing season. So, you know, that’s where I think people get this skewed idea of if I eat healthy, if I eat local, if I eat organic, it’s going to cost me twice as much. That’s not always the case. Um, it’s where did it come from, a lot of times, is what needs to be digested to see where your dollars and cents are going” (11/20/09, interview with Nate Peterson).

Bon Appétit is also sourcing produce from ECO for the new “Farm Stand,” which started in the fall of 2009 and is being supplied by Eastern Carolina Organics. The Farm Stand offers local, organic vegetables and fruits for sale at The Great Hall, and in the future, Nate hopes to be able to sell produce from Duke’s two community gardens at the Farm Stand as well.

The Refectory

The Refectory café, which began in 2005, is located on the bottom floor of the Duke Divinity School. It grew out of Laura Hall’s catering company, Bon Vivant, which was originally designed to provide “fresh homemade food for two-career couples, so that people could get nutrient-dense meals on their way home,” as an alternative to conventional fast food (10/6/09, interview with Laura Hall). Laura described her interest in food to me in this way:

“So the whole reason I’m in it – it just has to do with nutrition, okay? I have four children, and trying to teach them to eat better...always have the leafy greens and always have the vegetable. We always made it so that they couldn’t eat their meal until they ate their vegetables first. So when you do that, they eat them when they’re hot or when they’re fresh, and then they’re done and you have no issues at mealtimes and they’re getting their nutrients” (10/6/09, interview with Laura Hall).

When Laura approached Jim Wulforst, Director of Duke Dining Services, about starting an eatery at Duke, he asked her if she would be interested in running a “green” café at the Divinity School. In Laura’s words,

“...the Divinity School wanted something that would support their mission, so it was perfect for me, because I wouldn’t be doing this if it didn’t have a mission behind it. I’m not a restaurateur. I am a mom with four kids, and this is the third chapter in my life. And this was to create something, that, number one – would solve a puzzle, and number two – do something good, so it got all my creative juices going...So, it was to do something good and to do something that was going to challenge me. And it did” (10/6/09, interview with Laura Hall).

Once she was awarded the contract for the Refectory, Laura brought her creativity and enthusiasm to the new eatery, and Duke, for its part, was “empowering and trusting,” allowing Laura and her staff to “go through their dungeons” (10/6/09, interview with Laura Hall).

We found those tables over at the Divinity School, all the flatware, so when you talk about recycle – we pulled out all the old china, all the old flatware all the old tables...I mean no bare bones place has ever been set up like that, probably in Duke’s history, because everything is always first class. But nobody – I don’t think anybody – thought it was going to work as well as it worked (10/6/09, interview with Laura Hall).

Laura started out buying “all organic, all local, paying living wages” (10/6/09, interview with Laura Hall). She has always operated her businesses based on a triple bottom line model, with economic, social, and environmental goals. According to Laura, the café became very popular, and their patronage grew quickly. Without a dish room, they were washing every plate, fork, knife and spoon by hand. Furthermore, they started out with only two residential-sized electric stoves and one oven. Business grew to 450 or 600 people a day with that infrastructure, yet they kept at it for another year to see if they could become financially sustainable.

Aside from a lack of adequate equipment, Laura explained that one of the biggest obstacles for her in setting up the Refectory at Duke was the timing of the academic year. As she said,

“And we have to stay open all summer. So there’s fifty-two weeks in a year. Students are here for thirty – what do you do for the other twenty-two? And that became my Waterloo,

basically – it wasn't enough business. Fifty to seventy people would come a day...So the first year was brutal, financially. And the second year, we started getting up to seven and eight hundred people in a day, and then in the summer it was brutal but not as bad. Now we're getting to maybe one hundred people, one hundred twenty-five people a day. So once again, we're ending the year, and it's financially not sustainable" (10/6/09, interview with Laura Hall).

But by the third summer, Laura said, even summer business had grown to the point that the Divinity School café was “solid, environmentally, economically, socially sustainable” (10/6/09, interview with Laura Hall). At this point, Laura added benefits for her workers, who are mostly year-round employees. She takes great pride in her staff and has very low turnover. The Refectory employees are “better trained” and, as Laura explained, they

“...know the guests – they know what they like to eat. They walk in, and they'll say 'Oh, I've got the best thing for you today – we're making this!' Because we make so much from scratch, it is hard – and especially when it's crowded – to walk into one of our cafés and decide what you want to eat. But if the person behind the counter knows what you like, they're immediately going to single you out and say, 'I have a turkey Reuben panini today, I think you're gonna love it!' ...But the people who eat with us every day, you know we just get 'em, we know what they like. It's wonderful" (10/6/09, interview with Laura Hall).

Due to its success at the Divinity School, the Refectory now has a location at the Law School, which is also doing well.

While Laura has backed off of being “all organic” for financial reasons, she has maintained relationships with over thirty local food producers, all of whom farm with environmentally sustainable practices. These relationships have taken a large amount of effort and time – over two and a half to three years – to build, but she feels that supporting local farmers and the community is very important. Laura also believes strongly in the superiority of fresh, whole foods, compared to today's ubiquitous processed food. As she puts it,

“...the over-processing of food adds to the obesity of our population, and I absolutely believe that. The food doesn't taste as good, so you eat more of it. It's not as protein-dense, so you eat more. If you're eating good protein, you're eating fresh food, you're satisfied faster" (10/6/09, interview with Laura Hall).

While the Refectory does a great deal of local purchasing, they don't necessarily menu seasonally. I asked Laura if they purchase outside of the local food system when things aren't available in the winter, and she confirmed that they do. Her reasoning was clear:

"Because this is a business. And it's nice to have a mission, but if your business doesn't stay in business your mission dies. So, you gotta find the balance. And we are finding the balance, but you don't find that overnight. It took us, you know, we're now in the fourth year at the Divinity School, and we got it down" (10/6/09, interview with Laura Hall).

I also spoke with Laura about the challenges and barriers she has encountered throughout this process. She's had trouble with delivery of quality, as well as quantity and availability of local produce and meats. Regarding meat, Laura explained that processing plants "are having a big problem right now," where they are lowering the quality of wonderful, local and sustainable meat by letting it sit too long, or by processing it incorrectly (10/6/09, interview with Laura Hall).

According to Laura, price has not been an issue, because, as she said,

"...I don't compare their prices to institution prices, and I guess if I did, I would be beating people over the head – I mean, we're paying \$4.00 for a dozen eggs! Nobody's gonna pay \$4.00, and then we started using so many eggs it was like, oh my gosh!" (10/6/09, interview with Laura Hall).

She eventually switched away from this particular supplier due to lack of quantity. While Laura did not cite price as an obstacle, she has certainly worked hard to make her businesses financially viable. In part, the Refectory cafés are also supported by the existence of Laura's catering company, which is especially helpful during summer when business is slow at the university locations.

5.2.8 Consumers: University Students

Within Duke's local food system, types of food consumers include university faculty, staff, visitors, graduate and undergraduate students. Of these players, the most influential group is the undergraduate population at Duke, because they make up the majority of on-campus eaters. I interviewed only one Duke undergraduate formally for this study, although I spoke to an undergraduate at UNC as well. Here, I will tell the stories of both undergraduates. In addition, I will include the opinions and perspectives of some of the other interview subjects regarding the consumer food culture at Duke.

I talked with Stella Dee, a sophomore at Duke who is involved in the Duke Community Garden. While she is a member of the undergraduate population, Stella has a distinct interest in food issues, and is very aware of food-related events and organizations at Duke and in the wider Durham community. I asked Stella about her living situation at Duke, and she described the different meal plan options and dormitory situations on campus. Undergraduates have a three-year on-campus housing requirement, and spend their first year on East Campus.

I was curious about Stella's opinion of Duke's progress in the local and sustainable food arena, so I asked for her impressions. She cited the Farm Stand as a "big" move for Duke, as well as their use of Bon Appétit as the central management company on campus. She said,

"I feel like in general, Bon Appétit is certainly far ahead of Aramark, which they have here, Sodexo, or the others. Obviously there's a lot more to be done, but I feel like overall, they're doing pretty well, in relation to other dining services"
(1/13/10, interview with Stella Dee).

Duke is home to several food-related undergraduate groups, including the Environmental Alliance (EA), Plan V, the Duke University Culinary Society (DUCS), and the Duke Community Garden. As a leader of the garden, Stella says that she communicates regularly with all three

other groups. EA is focused more generally on the implementation of sustainable practices at Duke, but is committed to “healthy, local and organic agriculture and food options” as one of its sub-principles (Environmental Alliance, 2010). Plan V is the vegetarian alliance, while DUCS is “Alice Waters inspired” – Alice Waters is a famous chef and author, and the founder of Chez Panisse, a restaurant in Berkeley, CA, who famously promotes local and fresh ingredients in her recipes. DUCS runs events like an Iron Chef competition and a Dessert Expo, and are interested in cooking well with “good” ingredients.

When I asked Stella if she felt that her classmates understand where their food comes from, she said,

“I think it varies a lot, because there are a lot of different people at Duke. And I think it varies from ‘caring, but not really having time to figure out,’ or ‘caring,’ or ‘not caring,’ or ‘caring, but...just not really being able to do anything about it for financial reasons’” (1/13/10, interview with Stella Dee).

In the spring of 2009, a group in the Food and Energy undergraduate course conducted a consumer survey about perceptions of local food in the Duke community. Of thirty-eight respondents, 66% said that they do not think about where their food comes from (Hernandez, et al., 2009).

I also had the opportunity to interview Jordan Treacle, a senior at the University of North Carolina at Chapel Hill, who has been heavily involved in food activism throughout his college career. Jordan is involved in a group at UNC-CH called FLO – Fair, Local, Organic, and he serves as the southeast regional coordinator for the Real Food Challenge, a student-led food activism campaign. Originally interested in the environmental issues associated with food production, Jordan took a class during his sophomore year that opened his eyes to the environmental racism and social justice concerns surrounding meat (and especially pork) production in eastern North Carolina. As he said,

“...And that was sort of a wakeup call, and something I was really upset by, and wanted to learn more about. And I thought it was an issue that a lot of youth would be inspired to work on, to change...” (11/20/09, interview with Jordan Treakle).

Jordan and several friends from class got together and decided to learn more about the social justice and environmental aspects of food procurement at UNC. They began by setting up a meeting with Carolina Dining Services (CDS) to ask them why the University was including Smithfield Foods meat as a “sustainable” product on their website.

They have built a good working relationship with CDS since then, working closely with them on a number of projects. Jordan explained that they went through a learning process together:

“...when we first went to the Dining Halls and asked them, ‘Where’s our food coming from?’ and ‘What standards are you using to get your food?’ and ‘Why is Smithfield considered sustainable?’ they didn’t know any of the answers either. And so we realized that we were starting this campaign – the education part of it – at the same place they were. So it’s been really nice over the last two years that we’ve sort of been learning about these things together” (11/20/09, interview with Jordan Treakle).

Jordan was quick to point out that CDS has very different priorities than FLO, but they have been willing to sit down with the students, even if they don’t often end up agreeing at the end of the conversation. Jordan described the relationship:

“...they’re coming from a different point – they’re very business minded, and they have a budget and they have a business to run, and we have these ideals we’re pushing for. But they’ve been really super-accepting of what we have to say. Which means that they’re willing to sit down with us and listen to us and talk about it with us; it doesn’t mean – and they have made a lot of efforts to get grass-fed beef – they definitely don’t agree with us on most things, but they’re willing to talk about it with us” (11/20/09, interview with Jordan Treakle)

When Jordan and FLO decided to try to get grass-fed beef into the dining halls at UNC, there was a lot of initial resistance. As he explained,

“...so we really spent about six months of warring with Aramark, saying ‘We want to know why we can’t get grass-fed beef into our dining halls.’ And finally we got through all the issues, got a lot of community support, and were able to get Eliza MacLean’s grass-fed beef into the dining halls. That’s been successful and this semester we’ve

doubled the amount to four hundred pounds a week” (11/20/09, interview with Jordan Treakle).

Jordan and FLO have opened up lines of communication with CDS and demonstrated that there is student demand and interest at UNC-CH for grass-fed beef. They have had a lot of success so far in their efforts, and have now moved on to poultry.

Despite their success, Jordan acknowledged that FLO is a student advocate group, and the fact that they have been the ones forming partnerships with farmers suggests that there is something missing within the administration. He said,

“And FLO really needs to be – or a student movement – needs to be in an advocacy role for these things, they shouldn’t be the ones who are actually doing it. We’re not qualified to be sustainable food managers, finding farmers – but that’s what we’re doing now, and that’s totally not our role. It’s a staffing issue on their part, in that they’re not willing – and also unable – to fund that position. Um, and that’s sort of another major barrier. There’s not only a lack of education but a lack of resources to make this happen, and students are trying to stand in for that, and we’re not qualified and we’re not supposed to” (11/20/09, interview with Jordan Treakle).

Jordan and FLO have come up against a number of obstacles in their quest to get more sustainable food on campus. He spoke of how hard it is to build local and sustainable food systems when everything is structured to support our current industrial system, specifically mentioning food subsidies and political relationships with “big Ag.” As he put it,

“So there are some larger issues that we can’t address. It’s really hard to trace food in industrial food systems and we’re not going to change that” (11/20/09, interview with Jordan Treakle).

In terms of FLO’s work on campus, Jordan explained that it has also been difficult to work with multi-national corporations, who are “not going to change their practices” (11/20/09, interview with Jordan Treakle). Additionally, Jordan said,

“...getting broad student support is hard. Because CDS is a business, and they’re going to cater to their customers, so getting as many students on board as possible is really crucial. And finding ways to get students to take time out of their daily lives to care about the workers that they never see who produce their foods – it’s really difficult...I think most people are on board with the idea of social justice, and environmental integrity and all this, but getting people to change their personal habits of actually

thinking about what they eat and how that connects to these ideals that they support and practice is really difficult...” (11/20/09, interview with Jordan Treakle).

While it is difficult, Jordan and FLO have been working hard on reaching out to students. FLO has hosted conferences, farmers’ markets on the quad, movies, and speaker events, and they have tabled in dining halls and created educational signage. Membership in the group has jumped from six to fifty in less than two years, and FLO is gaining recognition both from other students, and from the rest of the university community.

I spoke with Tavey Capps, the Environmental Sustainability Director at Duke, about her impressions of student interest in food issues on campus. She responded that she feels like students show a lot of interest, continuing,

“I wonder sometimes if I see a segment of the population that, you know, tends to be more...thinking about these things. I wonder sometimes, you know – do we assume some of the student perspective, and it’s not the typical Duke student, because it’s not the ones who we’re talking to?” (1/20/10, interview with Tavey Capps).

While that is probably true, Tavey also thinks that students in general are becoming more interested in the things closest to them:

“But, I think things like food, and recycling, and the really tangible things that students interact with on a daily basis – and feel like they’re making choices about – they are becoming more interested in, and asking questions about what is happening. You know, some of the other pieces, like energy and things like that, that they don’t really feel like they have as much control over...I think there’s interest there, but it’s the really day-to-day tangible ones that I feel like more and more students are becoming aware of, and starting to focus on. So I think food is definitely one of those” (1/20/10, interview with Tavey Capps).

Tavey also spoke a little bit about consumer preferences on campus. Another of the findings of the Food and Energy class surveys was that health really mattered to the students, as did convenience (Hernandez, et al., 2009). According to Tavey, cost was less important, and convenience really stood out as a factor:

“Cost was in there, but convenience was one of the ones that stood out to me. You know, if I have a class in LSRC and the Blue Express is right there, I’m not gonna walk across campus to the Refectory because they have local food. I need to go somewhere quick,

and get something to eat...But it was interesting in terms of food choice – it was almost like, yes, almost everybody said they thought it was important, but if it impacted convenience, they didn't necessarily choose the sustainable over the convenient” (1/20/10, interview with Tavey Capps).

Several of my interview subjects mentioned the importance of consumer demand for local and sustainable food to succeed in a particular location. Similarly, Sandi Kronick, of ECO, emphasized that student involvement is important:

“I’ve always found that interesting, that there wasn’t...you know, there’s some events that Bon Appétit asks us to come and man a booth for, and I’m like ‘Where are the – where’s the student group on campus for us to network with?’ Because they’re the ones – you know the students, when they’re going to get lunch, they don’t want to talk to us – but if there was another student behind the table, they’d probably be a lot more interested in talking to them” (1/21/10, interview with Sandi Kronick).

5.3 Eatery Responses to the PACE System

Overall, eateries responded positively when I asked them their opinion of Dining Services’ PACE program. At The Loop, Dennis Lane said,

“I think it’s great for Duke. I’ve often talked to them – they need to sell it to other people, for other campuses so they can do the same thing...it makes people cross their T’s and dot their I’s – you stay on top of the small things, which often get overlooked” (1/26/10, interview with Dennis Lane).

When I asked him how well he thought The Loop could adapt to new changes in PACE, Dennis said that The Loop could “change to fit any model,” though he maintained that the biggest changes needed to be “within the consumers” (1/26/10, interview with Dennis Lane).

Tom Meyer also praised PACE, though he acknowledged that it was time consuming. He said,

“PACE is a great system, and it’s a pain in the rear end, right, because it requires that you peek under the bed sheets on every single corner of your business. So to that extent it’s both a blessing and a curse, because you’ve gotta do a lot of things for it. But it sort of works under the right assumption. That you’ve got people’s health in your hands, and not just cause no harm, but actually do good – you want to make sure that the food is

nutritive, and that it tastes good, and that it's hot and delivered, and that it provides sustenance emotionally as well as bodily. And that's a pretty big commitment" (1/26/10, interview with Tom Meyer).

Tom said that one of the challenges in meeting PACE's requirements at Tommy's is a management challenge – for him, teaching his workers to maintain the standards mandated by PACE has been difficult:

"And you're working with workers who are coming from either a poorly trained background, meaning they worked someplace where they didn't get those rules, or you're working with a workforce that is transient in nature" (1/26/10, interview with Tom Meyer).

He explained that making sure that things are done properly is easier when you have a checklist, and are supervising staff directly. However, he has found it hard to “imbue that sense of responsibility” in employees. Overall, Tom has embraced PACE. He's even taken parts of the system to his other businesses.

Bon Appétit's Nate Peterson explained that, in addition to PACE, all Bon Appétit eateries follow their own company-wide quality assurance program, called “Great Expectations.” Nate said,

"So...a lot of the incentives on those and the initiatives on those jive – they're looking for the same greater goal on both of those programs. Now, Bon Appétit has some that are not on PACE, PACE has some that are not on Bon Appétit's, but, I can tell you that they're both extensive and they're both very good programs" (11/20/10, interview with Nate Peterson).

PACE's PROPS review involves an extensive document that Nate's management team revisits on a regular basis, to make sure that all of the Bon Appétit eateries are in compliance. The week before our interview, one of Nate's managers had performed both a PROPS review and a Great Expectations review, “back to back in every location,” so that they could then “provide the feedback to the management team in areas where they were doing well and areas that need improvement” (11/20/10, interview with Nate Peterson).

Laura Hall was quick to mention that the Refectory has “won PACE” for the last three years. She talked about the different aspects of the PACE system, and explained that her director of purchasing is in charge of dealing with the PACE requirements. Laura and her staff have set up a number of systems to meet PACE’s standards, including a set of spreadsheets, and a book that people have to sign once they have checked on specific aspects of operations. As she explained,

“Our spreadsheets all support the PACE program – so for instance, measuring temperatures, we made up spreadsheets that give temperature logs for every day that everyone needs to fill out. So they give us the roadmap, we have to figure out how we’re gonna get there” (10/6/09, interview with Laura Hall).

Laura mentioned that there was a “green” section on PACE, and said that she’s been pushing for “some great bonuses for doing stuff like this,” referring of course, to the Refectory’s substantial sustainability efforts (10/6/09, interview with Laura Hall).

5.4 Food Purchasing Data: Tracking and Monitoring

I also discussed the process of tracking and monitoring food procurement data with each of the four eatery managers. All four managers said that they could, if necessary, tell me where any food served in their eatery had come from. However, in most cases this information wasn’t readily accessible or being monitored regularly, in a formal manner.

Dennis Lane explained that most of the boxes that come into The Loop are labeled with the food’s place of origin. He continued,

“Even if it’s not, I can call our food supplier, and he can give me a printout during the year where it’s coming from, where it will come from in April...they know what the rotation’s gonna be, and estimate when they’re gonna rotate to that particular area” (1/26/10, interview with Dennis Lane).

Dennis knows where to get the information, but has not implemented any sort of system to keep track of this data on a day to day basis.

At Tommy's, I asked Tom Meyer if he could tell me where his purchases were coming from. He explained that he can trace all of his ingredients back to their source. He inferred that restaurants that need to do such traces are often responding to problems with health or disease, and that

"...it might take longer than the incubation process of the disease occurring, but I can get there" (1/26/10, interview with Tom Meyer).

To monitor food procurement data at Bon Appétit, Nate has access to a full accounting department that handles all of his financial data and tracking. In addition, each of his chefs at all locations is required to update him via daily email, so that he can keep track of purchasing in all of his eateries. Bon Appétit's use of dedicated staff accountants, coupled with Nate's daily check-in with staff, leads me to conclude that the Bon Appétit eateries have the most efficient access to information, compared to the other eateries I studied.

At the Refectory cafés, Laura keeps track of her food sources through a set of excel spreadsheets, and has access to several other metrics as well. When I asked her about monitoring purchasing data, she said,

"Asking me to track stuff that I cannot get easily – I don't have the time. If you want to pay for someone – I don't have an assistant, I don't have a secretary. There are no jobs like that in my company – everybody works. Not that those people don't work – we just don't have the luxury of another \$30,000 a year person, that you have to keep all summer. If you figure out the labor, then you get the rest of it. The labor is the hard part" (10/6/09, interview with Laura Hall).

Laura doesn't have access to an accounting department, as Bon Appétit does. Any food data tracking and monitoring system would need to be straightforward easy to implement.

5.5 Defining "Real Food"

What is "sustainable" food? How far is local? How does one decide what kind of food to eat? How will Duke decide which food purchases to encourage or discourage in its eateries?

Throughout this study, I set out to answer these questions by exploring the ideas, opinions and beliefs of my interview subjects in considerable depth. Here, I will attempt to describe several different perspectives on what constitutes sustainable food, based upon my interview data. At the end of this section, I will pull this information together in an attempt to inform the creation of a working definition of sustainable food that could be employed in the future by Duke University eateries during the food procurement process.

Many of the interviewees spoke about the “local” component of sustainable food.

Richard Holcomb and Jamie Dement of Coon Rock Farm describe local food in the simplest manner:

“(Richard) Local’s pretty easy – you just set a distance. (Jamie) Or within state borders, or something” (11/13/09, Coon Rock Farm interview).

This type of simple, quantitative definition can be useful for universities and food service professionals, who might need to set distinct boundaries for food procurement efforts. Nate Peterson discusses his definition of local – within 150 miles – as it is used in Bon Appétit’s annual Eat Local Challenge:

“So we would take one station in our cafes, out of the ten or fifteen or four that you have, and everything within that station in that meal period – every single ingredient – has to come from within 150 miles. That’s the definition of “local” as it relates to the Eat Local Challenge” (11/20/10, interview with Nate Peterson).

Outside of the Eat Local Challenge, Nate spoke about trying to purchase as much North Carolina seafood as possible, with South Carolina seafood as a second option. This idea of “local” uses state boundaries instead of a distance.

Laura Hall, of Bon Vivant and the Refectory, supported local food because of its economic benefits, and its freshness. She said,

“... going back to my roots in growing up on farms – there’s nothing better than farm-fresh food. There is such a difference in the quality of the food. This has nothing to do with being green or anything, it has to do with let’s support those farmers who then

support this community, and then support getting nutrient dense food. And it's just a pleasant experience when it comes to sitting down and enjoying a meal (10/6/09, interview with Laura Hall).

Here, Laura is emphasizing the quality of the food and its positive impacts upon the local farmer community. In our interview, she also expressed that she cares about the environmental impacts of agriculture, but she tended to focus on the taste and freshness of local food.

Jordan Treakle, a student at UNC Chapel Hill, believed strongly that universities should not highlight the local origin of the food (distance-wise) unless it was also produced in an environmentally and socially responsible manner. He objected to UNC's definition of Pepsi products as "local food," because of the company's status as a multi-national corporation. Overall, Jordan felt that local food should also be "community-based" (11/20/09, interview with Jordan Treakle). As another example, he referred to the North Carolina-based company, Smithfield Foods, which is also considered "local food" by UNC:

"There's this thing that, because they're North Carolina they're local, and therefore they're 'sustainable food.' And I think that most students, once you actually peel away the layers (what is Smithfield?) – and even though it's in North Carolina, there's no way – even if it's considered local because of its proximity to UNC...that doesn't constitute sustainable food" (11/20/09, interview with Jordan Treakle).

Smithfield Foods is the world's largest pork producer, and has come under fire for serious environmental violations (ENR, 1997).

One of the eatery managers at Duke, Tom Meyer (of Tommy's), is willing to separate "local" from environmentally responsible, and is very proud of his local purchases. He feels strongly about supporting the North Carolina economy, and tries to purchase North Carolina products whenever he can. Tom spoke about the price differences between local and organic food in this way:

"Quite often the organic side is more expensive. The local side, if you're willing to make the distinction between local and organic, then you can be...price is to your advantage" (1/26/10, interview with Tom Meyer).

Tom implied that “local” as an ideal did not necessarily need to mean organic, socially responsible, or environmentally low-impact.

Sandi Kronick also distinguishes between local and organic, but feels like they should go together, especially here in North Carolina:

“...we should be able to do local and organic. You shouldn't have to choose one or the other” (1/21/10, interview with Sandi Kronick).

Regarding the environmental impacts of food production, Richard provided a useful perspective when asked to define sustainable agriculture:

“Probably a couple of main things that are sustainable to us are...minimal inputs. We're not buying organic fertilizer from somewhere else and having it shipped down on a tractor trailer truck. We make our own compost from restaurant waste that comes back to the farm, from our own leftovers on the farm, from farming activities, from animal manures that we get. Most of our fertility comes directly from the animals – we rotate the animals through the vegetable gardens, rather than taking the manure and turning it into compost and spreading it on the fields. Ninety percent of what we do is move the animals to the fields and let them fertilize directly. So minimal inputs would be one. And then the other is really just taking care of the soil. There's a modern farming philosophy which is 'test it, figure out what the problem is and treat it' and that led us to Monsanto and a lot of specific petrochemicals” (11/13/09, Coon Rock Farm interview).

At Coon Rock Farm, Jamie and Richard participate actively in the local food system and grow their food in a way that minimizes environmental impacts.

These perspectives have informed my own view, which has grown and evolved throughout the course of this project. The Real Food Challenge (RFC) uses the term “Real Food” to bring together a number of ideas about sustainable and just food. *Real Food*, in their words, is

“...food that is ethically produced, with fair treatment of workers, equitable relationships with farmers (locally and abroad), and humanely treated animals. It's food that is environmentally sustainable, grown without chemical pesticides, large-scale monocropping, or huge carbon footprints. Real Food is food that is healthy, tastes good, builds community, and has the potential to inspire broad-scale social change” (Real Food Challenge, 2010).

RFC participants “think about Real Food in the context of our entire food system, from farm to plate as food that truly nourishes people, communities, and the earth” (Real Food Challenge, 2010). The RFC breaks down the definition of Real Food into four categories, including the following: local/community-based, fair, ecologically sound, humane (Real Food Challenge, 2010). Later in this report, I will discuss Duke student involvement in the Real Food Challenge.

I believe that Duke would benefit from a unified vision of what constitutes sustainable food. Richard put it this way:

“So I guess the university would have to come up with a list of what they thought was important. And they do that anyway – if you’re going to be one of the janitorial contractors, you have to take this survey of what your practices are, what you pay your employees, and do you pay overtime – there’s a whole list for whatever service that you’re getting. Twenty years ago you had to check whether or not you did business with Apartheid South Africa. If you did then they didn’t do business with you. So, they can come up with a set of criteria that’s important to them. Are your animals pasture raised, or are they grain fed? Do you spray synthetic pesticides, herbicides? Do you use chemical fertilizers? What’s important to Duke might not be what’s important to Chapel Hill. There could be a different angle” (11/13/09, Coon Rock Farm interview).

If Duke is indeed ready to promote more sustainable food in its eateries, they should first create a working definition of “sustainable food.” Of course, Duke cannot to change their food system drastically, especially in the very near term. However, once the university decides upon a sustainable food definition, they will be able to take incremental steps towards increasing the amount of sustainable food purchasing on campus.

I believe that Duke’s definition of sustainable food should include the following general components, which are similar to those set forth in the Real Food Challenge. Sustainable food should be

- 1) Grown using environmentally sound practices
- 2) Produced in a socially just and humane manner
- 3) Community-based and local, in support of the local or regional economy

In today's world, food purchasers find it difficult to get all of these things all of the time. Most of the time there are tradeoffs, and Duke will also have to decide how to choose among the different options. Throughout this report, unless noted, I have used the term "sustainable food" generally to refer to the ideal set forth above – food that is environmentally friendly, socially just and ethically produced, and supportive of a locally-based economy.

5.6 How to Decide: The Vetting Process

Third-party labels, certifications, and standards are designed to provide a large amount of information to a consumer at one time, and can be a good starting point in food decision-making. First, however, consumers must both understand what the label or certification stands for (and what it does not address), and they must trust the label and its creator – the third-party organization that stands behind it.

Duke is already using labels and certifications to make some of its purchasing decisions. Several years ago, the university adopted a campus-wide policy to only serve Fair Trade, organic, shade grown coffee in its eateries (11/20/10, interview with Nate Peterson). Fair Trade certification addresses the social justice aspect of the coffee production, while the organic and shade grown certifications take environmental impacts into account. The Fair Trade Federation "strengthens and promotes North American organizations fully committed to fair trade...building equitable and sustainable trading partnerships and creating opportunities to alleviate poverty" (Fair Trade Federation, 2010). Fair Trade products must be ethically produced, and must meet a list of requirements determined by the Federation.

Nate Peterson mentioned that he uses several different standards to make food choices at some of the Bon Appétit eateries at Duke. One of these applies to seafood:

“All of our seafood – all of our purchasing, one hundred percent – is purchased by following the Seafood Watch guidelines that were put out by the Monterey Bay Aquarium. We have an avoid list, meaning you don’t ever order it. We have a best choices list, meaning get as much as you can. And then we have a good alternative list, meaning, if this isn’t available, this is okay to purchase” (11/20/10, interview with Nate Peterson).

Seafood Watch seeks to address the problems of fishery collapse and unsustainable seafood harvest through consumer education. While not technically a “certification,” the Seafood Watch lists are designed to help “consumers and businesses become advocates for ocean-friendly seafood” by recommending which seafood to buy. The lists are available online, in the form of printed pocket guides, and through mobile device applications (Monterey Bay Aquarium, 1999-2010). Seafood Watch standards help Nate and his chefs make decisions about the seafood they purchase for the eateries. Because they trust the Seafood Watch label, the chefs can choose among different options based on the lists and guidelines provided by the organization.

An example of a food certifier that was not mentioned by any of the interviewees is Food Alliance, which began in 1993 as a joint project of two universities – Oregon State and Washington State – and the Washington State Department of Agriculture (Food Alliance, 2010). According to their website, Food Alliance “works at the juncture of science, business and values to define and promote sustainability in agriculture and the food industry, and to ensure safe and fair working conditions, humane treatment of animals, and careful stewardship of ecosystems” (Food Alliance, 2010). Today, they operate a voluntary certification program for farms, ranches, and food processors, and have certified over three hundred and twenty farms and ranches in twenty-three U.S. states, Canada, and Mexico, as well as six distribution centers and eighteen food processing facilities (Food Alliance, 2010).

Perhaps the most widely known label recognizing environmentally low-impact agriculture is the USDA organic standard. The National Organic Program (NOP) integrates “cultural, biological, and mechanical practices that foster cycling of resources, promote

ecological balance, and conserve biodiversity” through the development, implementation, and administration of “national production, handling, and labeling standards” (USDA, 2009).

Interestingly, I found that my interview subjects held a wide range of opinions regarding the NOP, from complete distrust of the system, to acceptance of its reliability, to the oft-stated opinion that organic is often too expensive for consumers, and also sometimes for farmers.

Several interviewees echoed Sandi’s opinion that organic certification is “not right for every farm” (1/21/10, interview with Sandi Kronick).

Sandi, the CEO of Eastern Carolina Organics, said of the NOP:

“...if you want to market in a wholesale community, and you want to get a premium price for your product, the organic label is absolutely critical to educate consumers that you’re not talking to behind a farmers market stand about your production practices” (1/21/10, interview with Sandi Kronick).

She also made it clear that her business model is constructed around the idea of organic produce:

“And you know, obviously we have to believe in a label like that, or our company would be built on nothing” (1/21/10, interview with Sandi Kronick).

Sandi spoke about the differences between organic certification for produce and meat operations, stating that it is not expensive for vegetable farmers to become certified organic, because the government pays 75% of the costs (1/21/10, interview with Sandi Kronick). However, for meat producers it is a completely different story. Sandi describes the situation of livestock producers:

“Well, for livestock growers, the challenge is – you have to use organic grain. And it is extremely expensive right now, because there’s no organic grain processors in the state, and the one processor that is here has to – you have to ship – if you’re growing grain locally, it comes in on rail cars, with gas and everything, it’s extremely expensive. So the infrastructure isn’t there to make organic grains financially achievable” (1/21/10, interview with Sandi Kronick).

She also cited additional issues with the current USDA Organic standards regarding “access to pasture,” but expressed confidence that these problems would be resolved with the Obama administration’s new staff hires and increased commitment to the program.

Richard Holcomb and Jamie Dement produce both livestock and vegetables at Coon Rock Farm, and have very strong opinions about the USDA Organic standard. As they say, “the government owns the word organic” (11/13/09, Coon Rock Farm interview). Coon Rock grows approximately ten acres of intensive vegetables, and the rest of the farm supports grass-fed sheep, cows, and goats, as well as chickens and hogs. Coon Rock is not certified organic, in part because Richard and Jamie do not support the current organic standards, especially as they are applied to large agricultural operations. As Richard describes it,

“And organic isn’t necessarily sustainable. Particularly the way it’s practiced by large agriculture now... They’ve just replaced petrochemicals with “organic” chemicals – they’re using “organic” fertilizers that come out of bags, and they’re using “organic” pesticides that come out of bottles and we really just don’t do any of that” (11/13/09, Coon Rock Farm interview).

He believes that the “organic standards are largely there for Walmart Organics,” and does not recommend limiting purchases to USDA organic labeled food, since most of it is shipped in from California (11/13/09, Coon Rock Farm interview). Richard makes it clear that he knows why the label exists, though he prefers that people support their local farmers, eat seasonally, and travel personally to visit the places they buy their food from.

“The organic standard is there so that if you are in, you know, Boston, Massachusetts, and you want to buy organic strawberries in December, you know, they’re gonna come from California, and you need that stamp. Because you don’t know where they’re from and what’s been done to it. There’s that stamp on it. But for us – our customers know us. The people who buy food from us – they know where our farm is. They know they can come here and see what we’re doing, and so – number one, the word doesn’t mean anything anymore, and even if it did, we don’t need it” (11/13/09, Coon Rock Farm interview).

The eatery managers that I spoke with all mentioned the fact that certified organic food is more expensive for consumers than conventional food, and in some cases it is too expensive for them to use in their eateries. Laura Hall, of the Refectory, purchases organic food for her eateries when she can. Laura said,

“...those that are organic are certified organic, the answer is yes. We have backed off from being all organic, because certified organic places – that’s great for them, but it’s also very expensive” (10/6/09, interview with Laura Hall).

Tom Meyer, owner of Tommy’s, speaks of Eastern Carolina Organics:

They’re too expensive for me. Because – and they specialize in organic, almost everything, and at least it’s moving that way – it’s just too much for me...the things I can buy organically I do, in season (1/26/10, interview with Tom Meyer).

Bon Appétit, like the Refectory, purchases organic food. Nate Peterson also cited the high price of organic certification for farms, which is then passed down to the customer. He describes why some smaller agricultural operations might choose not to become certified:

“No one wants to eat anything that has chemicals – we don’t want to put that into our bodies, none of us do. Now, with that being said, unfortunately what people don’t realize...is that there’s numerous farms out there that are growing organically, but they can’t afford the organic certification. And I’ll use the example – if I had five acres, and I am growing blueberries, and I’m selling them all to Nate, over at Duke, I’m not gonna pay \$10,000, or \$5,000, or \$1,000, or whatever that magic number is to get organically certified, because I’m only bringing in \$4,000 in revenue” (11/20/10, interview with Nate Peterson).

Tom, who has experience with vineyards and wine production, made a similar comment:

“...it goes against the integrity of what they do to spray a bunch of chemicals on their crops, but maybe they’re not certified organic. So that’s an enormous distinction, particularly in the wine business. So coming from that background, to certify your property as organic is expensive, and it sometimes misses the overall point” (1/26/10, interview with Tom Meyer).

Sandi also supported this idea, explaining why Eastern Carolina Organics occasionally makes exceptions for producers who are using environmentally sound practices, but cannot afford to be certified as organic by the USDA. She said,

“...we do sell some non-certified stuff as well. We recognize that organic certification is not right for every farm, even if they are growing according to the standards – but we do have to vet those growers a little bit more, from a production standpoint, because we don’t want to be selling anything that’s traditionally conventional. We don’t want anything with you know, synthetic inputs – no herbicides, no pesticides...” (1/21/10, interview with Sandi Kronick).

Interestingly, Sandi also discussed the fact that organic certification is something that a farmer must be committed to:

“But I would never try to convince someone to go organic if they didn’t want to – because if it’s not in your mentality to embrace the concept, and if you don’t respect the system you’re going to try to cut corners, and we don’t want to work with any farmers that want to take advantage of the label without respecting the requirements” (1/21/10, interview with Sandi Kronick).

Of course, without the information provided by a certification or label, the only way to know if food meets a set of specified criteria is to visit the farms in person, and to possess the requisite knowledge of which practices are “sustainable” and which are not. Some of the eatery managers at Duke vet farms in person, including Nate Peterson of Bon Appétit and Laura Hall of the Refectory. Both Laura and Nate talked about the time, dedication, and care required to form and maintain productive reciprocal relationships with the farmers, and they mentioned that these relationships also necessitate an understanding of sustainable agriculture practices on the part of the restaurateur.

5.7 What would motivate an eatery to source local and sustainable food?

Given the current structure of the industrial food system, university eateries that desire to purchase more of their food locally and responsibly face a number of barriers and challenges. Drawing from my interview data, here I present several different factors that might cause an eatery owner to shift his or her purchasing regime in a new direction.

5.7.1 Top-down policies

While not appropriate in every case, top-down mandates and policies put forth by an authoritative body require that eateries adhere to a particular type of food procurement scheme. At some time in the future, Duke might decide to use a system such as PACE to compel all eateries to source a certain percentage of local and sustainable food, just as they require all eateries to achieve a certain standard of cleanliness. At this time, however, a policy such as this

would not be fair to all of the eateries currently contracted here, and thus would not be feasible at Duke.

Despite this, as I will discuss in the next section, PACE can be used in a way that *would* be fair to all eateries. For example, Dining Services could consider using PACE as a tool to encourage establishments to begin tracking and reporting their food purchasing data in an institutionalized manner.

5.7.2 Financial motivation

Eateries are businesses, and businesses must make a profit to stay in business. Today, sustainable and local purchasing is often more expensive for eateries. Sometimes the foods themselves cost more up front, or they require more time, preparation effort, or personnel, which increases costs for businesses. If an eatery is not set up to menu seasonally, like Bon Appétit, or if they do not have relationships with local farms, like the Refectory, beginning the process of sustainable purchasing can be expensive and difficult. Despite this, if student demand for local and sustainable food were to increase drastically, eateries might have a financial incentive to move towards this sort of purchasing. As Tavey explained,

“...I think the more and more student interest and demand there is, and the more visible it is which ones are going above and beyond...You know, they want to make money. The bottom line is, they want to be successful businesses. So if this is something that they’re seeing students making choices on, and Duke helping advertise which ones are doing better compared to others, I think that could have an impact, even if it’s not tied directly to their contract” (1/20/10, interview with Tavey Capps).

Alternatively, some type of financial reward for eateries that increase their percentage of local and sustainable food procurement could serve as a motivating factor for some businesses on campus.

5.7.3 Consumer demand

When I asked Richard and Jamie at Coon Rock Farm how we should think about encouraging eateries to move towards local and sustainable food purchasing, Jamie immediately said, “Their clientele has to encourage them” (11/13/09, Coon Rock Farm interview). Sandi Kronick maintained that demand was important, and particularly, “how vocal the students or the end-users are at that time” (1/21/10, interview with Sandi Kronick), while Dennis Lane believed that the “biggest change has to be within the consumers” (1/26/10, interview with Dennis Lane). Tavey Capps, of Sustainable Duke, said,

“And I think a lot of stuff has come from the student population (food is something that everybody deals with every day) and the student interest in local and organic and lots of different options, and knowing more about where the food is coming from” (1/20/10, interview with Tavey Capps).

Traditionally, businesses respond to their consumers. So perhaps one way of enacting change at Duke would be to focus upon the food purchasers themselves, beginning by increasing consumer awareness of food issues and improving food education on campus.

5.7.4 Mission-driven

Several of the people I spoke to during this study explained that their farms, businesses, or organizations were, in some way, mission-driven. Mission statements articulate a shared purpose, and express a “vision” for the institution or business’s future (Morphew & Hartley, 2006), guiding decision-making and actions, and conveying the organization’s overall goals.

Laura Hall created the Refectory to support the mission of the Divinity School at Duke, and explained that she “wouldn’t be doing this if it didn’t have a mission behind it” (10/6/09, interview with Laura Hall). Furthermore, her personal mission involves providing tasty, nutritious, whole foods to her customers. The Duke Community Garden, while not a business, has a “very defined mission statement,” according to Stella Dee (1/13/10, interview with Stella

Dee). The group's information page on the DukeWiki website states that the garden is "planned around four key values," which are listed in the form of adjectives describing all of the garden's operational actions: experiential, innovative, collaborative, and sustainable (Duke Community Garden, 2009).

According to Tavey Capps, Bon Appétit has been a good change for Duke, as "part of their...overall business philosophy is focused on sustainability" (1/20/10, interview with Tavey Capps). On their website, Bon Appétit states their "Dream," as follows:

"Our Dream is to be the premier onsite restaurant company known for its culinary expertise and commitment to socially responsible practices. We are a culture driven to create food that is alive with flavor and nutrition, prepared from scratch using authentic ingredients. We do this in a socially responsible manner for the well being of our guests, communities and the environment" (Bon Appetit Management Company, 2010).

They also outline a distinct list of food-related values, to which they have committed in their everyday operations.

Other eateries and organizations, while not exactly mission-driven, operate with a "Triple Bottom Line" standard. As detailed previously, Tom Meyer manages his restaurants with specific goals for each of three bottom lines: economic, social, and environmental. Laura Hall also spoke about how she has "always done the living wages – economic, social, and environmental," referring to the fact that she keeps all three of these values in mind when she runs the Refectory and Bon Vivant (10/6/09, interview with Laura Hall). Jordan Treacle, the UNC senior, talked about how his student group, FLO, advocates for a triple bottom line perspective for food in general. As he said,

"...all the local stuff is great for carbon – but really, in my opinion, the social justice aspect and the environmental issues are just as, if not more, important than carbon..."
(11/20/09, interview with Jordan Treacle).

While most of the people I talked to seemed to be very committed to their missions and business philosophies, eatery owners were also quick to point out that sometimes their economic bottom

line becomes the priority – since, as both Laura Hall and Tom Meyer said, you can’t accomplish your mission if you are out of business.

6. Recommendations

Based upon the data collected and analyzed in this study, I have developed a set of recommendations for Duke Dining Services and Sustainable Duke, addressing the question of how to increase the amount of sustainable and local food procurement in eateries at Duke University. I have proposed a multi-faceted strategy that employs both bottom-up and top-down mechanisms and attends to this complex issue using several different approaches.

<p><u>Recommendation One:</u> Incorporate food procurement data tracking and reporting requirements into the PACE system.</p>

Rationale:

Dining Services made it clear that any additions to the PACE system must be reasonably achievable and fair to all eateries currently contracted with Duke. The franchise locations face recipe constraints that limit their ability to purchase sustainable and local foods, and other eateries are constrained by finances; for these locations, the process of changing food procurement patterns is too expensive. Furthermore, other dining establishments have infrastructure limitations that prevent them from preparing large quantities of fresh, unprocessed food. Therefore, PACE is not an appropriate mechanism for setting food purchasing requirements at this time.

However, past research on this issue at Duke has led to the conclusion that the university must establish a system for tracking and reporting food purchasing information. This is

necessary so that Duke can begin to understand its baseline performance regarding the environmental impact of food procurement processes. Currently, eatery managers have access to this information, but not *easy* access – they do not collect it in any formalized manner.

Additionally, research has shown that the process of recording and reporting data often leads to measurable improvements in operations (Cohen, 2001; Tietenberg, 1998). For example, the Toxic Release Inventory (TRI) is an EPA database that contains publicly available information regarding toxic releases and waste management. This data is reported annually by specified industries and federal facilities, and since the inception of the program, there has been a “significant voluntary decrease in the total amount of TRI chemicals released in the United States – beyond any mandated levels” (Cohen, 2001). Studies have shown that mandatory information disclosure programs like the TRI can positively influence the environmental performance of firms, though mechanism behind the program is not fully understood (Cohen, 2001).

All eateries have the ability to record and report their purchasing data on a monthly basis. Therefore, the PACE point system should be used to encourage all eateries to begin this process. I have proposed a series of steps to aid Dining Services and Sustainable Duke in implementing this plan, which I have detailed below. These include the hiring of a student assistant, who will run a pilot program and institutionalize the recording and reporting process.

Implementation:

Step 1: Set PACE language and point distribution. [Summer 2010]

Dining Services should meet with Sustainable Duke to formalize the language and point structure of the tracking and reporting provision, recognizing that PACE points are limited, and

that trade-offs may be necessary. I recommend that this item be included under “Category E – Management,” as detailed in Box 1, below.

Box 1. Sample language for PACE provision for Recommendation One.

CATEGORY E – MANAGEMENT

NO. 24 – TRACKING AND REPORTING OF PURCHASING DATA

- Does the location track, record and report monthly food purchasing data to Sustainable Duke, as detailed in the supplementary instructions*? (10)

* Supplementary instructions: Eventually, eateries should be provided with clear and simple instructions for tracking and reporting. These will be created by the student assistant (see below) as a result of his or her research throughout the pilot program.

Step 2: Hire a graduate student assistant through Sustainable Duke. [Summer 2010]

Ideally, the student assistant will be a graduate student interested in sustainability management, sustainable business strategy, the environmental impact of food systems, or campus sustainability (or a related field). Funding should be secured as early as possible, so that the student can begin work in the beginning of September, 2010.

Early in the semester, Dining Services should call all eatery owners/operators and eatery managers together for a meeting with the student assistant and Sustainable Duke, where the tracking and reporting provision will be introduced. Dining Services should solicit ten volunteer eateries (representing different location types, if possible – i.e. a franchise, an independent eatery, a mobile cart, a coffee shop, etc.) to participate in the pilot program, which will run throughout the fall 2010 semester.

Step 3: Plan voluntary pilot program, collect initial data. [Early Fall 2010]

The student assistant should work directly with pilot program participants to obtain purchasing records, data, and other information pertaining to food procurement over a specified time period. The assistant will be responsible for determining the most efficient process for eateries to record and report their purchasing information, based upon the systems currently in place in the pilot locations.

Duke is also piloting AASHE's new Sustainability Tracking, Assessment and Rating System (STARS), Version 1.0, which includes a section on Dining Services (Appendix D). The student assistant should work in conjunction with Sustainable Duke to create a system of tracking and reporting that informs as well as complements the STARS program, and minimizes overlap of effort. STARS only requires that the institution report food purchases from "dining halls and catering services operated by the institution or the institution's primary dining services contractor," so Bon Appétit Management Company should be included in the early stages of the process.

The goal of this program is to begin the process of continuously tracking food purchasing information for each eatery. This information will be used to determine the environmental and other impacts of food procurement at Duke. Thus, the tracking system will need to answer a number of questions about each food purchase. Depending upon the information available to the student assistant, and the decisions of Dining Services and Sustainable Duke, the questions may include some or all of the following:

- What type of food is it?
- Where did the item come from?
- How was it produced?
- Does it have a third-party certification?
- How much did it cost?
- What were worker conditions like where this food was grown?

The final program will, of course, be more exact regarding which pieces of information it will monitor. These questions merely suggest things to think about when setting up the data collection system. In addition, it will be important to decide whether to track information for every purchase, or to only track the amount of sustainable and local food that eateries are purchasing. While the latter option would be sufficient for a system like STARS, if, for example, Duke decides to include greenhouse gas emissions from food procurement in their GHG inventory in the future, the former strategy would be necessary.

Lastly, the student assistant should communicate and potentially collaborate with student groups on campus who are interested in the sustainability of food purchasing at Duke. In particular, if students on campus are participating in the Real Food Challenge, they should be brought into this process.

Step 4: Institutionalize tracking and reporting process, expand to all eateries. [Spring 2011]

Once the student has created a plan for recording and reporting in pilot eateries, he or she will work with all eateries to expand the program and institutionalize the process.

Recommendation Two:

Create a Green Dining Award, to be jointly administered by Dining Services and Sustainable Duke.

Rationale:

Duke's eateries, as businesses, respond to financial incentives. The Green Dining Award would provide a monetary reward to eateries that show a commitment to sustainability through sustainable and local food purchasing. Sustainable Duke and Dining Services have already discussed the possibility of creating a green dining award.

Several eateries on campus purchase and serve local, sustainable, and organic foods, but many others do not, for a number of reasons. As mentioned, some eateries face financial constraints, while others lack the time or resources to engage in sustainable and local purchasing, and still others, as franchises, must follow the menus and purchasing guidelines imposed by their parent companies. The Green Dining Award must be structured in a way that will reward those eateries that are doing the most, but that will also encourage low performers to make changes in their businesses.

In our interview, Laura Hall said, “there should be some great bonuses for doing stuff like this” (10/6/09, interview with Laura Hall). On the other hand, when I asked Dennis Lane at The Loop what he thought of the idea of a Green Dining Award, he stated, “there would be only a handful of people that could win it every year” (1/26/10, interview with Dennis Lane). Therefore, I propose that DDS and Sustainable Duke create a three-part award that would reward the best performing eatery, the best “New Mover” and the most innovative franchise.

Implementation:

The Green Dining Award will be given once per year, and will be jointly administered by Sustainable Duke and Dining Services. The Award will not be connected to the PACE system, and will involve a monetary prize (funding would need to be secured for this), as well as publicity and advertising for the eatery. This program will be administered by some combination of the following staff members: the graduate student assistant (see above), Sustainable Duke personnel or the Quality Assurance Manager, Tammy Hope.

The Award

I recommend that the award be administered in three categories (titles up for discussion):

1. Best Overall Green Eatery

The eatery that wins this award should

- (1) purchase a significant amount of local and sustainable foods (by percentage of overall expenditures)
- (2) engage in waste reduction efforts that go above and beyond those outlined in PACE, and
- (3) reach out to students through educational campaigns

2. New Mover Award

This award should be designed as an incentive for eateries that do not currently purchase any local and sustainable food but face no rule-based constraints regarding their purchasing. The award should go to the eatery that does the most to change its purchasing patterns to increase the amount of local and sustainable food served. For example, this award might go to an eatery that changes its beef over from conventional to grass-fed, and perhaps performs some education and consumer outreach surrounding the transition.

3. Most Innovative Franchise

Because franchises face purchasing constraints from their parent companies, this award should not be limited to food purchasing. Instead, it should go to the franchise that makes a visible and *real* commitment to increasing the sustainability of their operations in some new way over the course of the year.

Options: The student assistant or green dining coordinator could rate all eateries for this award, or eateries could apply for consideration.

Recommendation Three:

Build and foster a culture of environmental awareness and concern surrounding sustainable and local food issues, focusing on the student body at Duke.

Rationale:

Eateries also respond to consumer demand. In Duke's case, most of the consumers are undergraduate students. Undoubtedly, some students are interested in sustainable and local food at Duke. However, most students do not think about where their food comes from at all, and are more likely to choose an eatery based upon convenience, rather than environmental impact.

People would likely make their eating decisions differently if they truly understood the hidden aspects of food production, and the hidden health and environmental costs associated with those invisible processes. Hence, the first step towards increasing consumer demand is raising consumer awareness, which can only be achieved through education.

Both the administration and the student body have distinct roles in this process, and here I will present some of my suggestions and ideas for ways that Sustainable Duke and Dining Services could think about moving forward.

Implementation:

(I) Raise awareness of food-related environmental, social, and economic issues through education – both peer-to-peer and Duke-initiated.

Example 1:

Assign a consumer-education project in next year's Food and Energy class, or charge an SSL committee with creating a consumer-education initiative that is focused upon changing a specific behavior in a specific eatery. For example (this is a waste reduction example), when I interviewed Dennis Lane at The Loop, he told me that half of the meals sold at The Loop are "to-go" meals, served in disposable to-go containers. Of those people that purchase to-go meals,

around 30-40% remain in the eatery to eat, and then throw their disposable containers in The Loop's trash cans. A student group might attempt to address this problem through an education campaign.

Example 2:

Many student groups on campus are focused on food in some way. Early on in the year, students or the administration should bring all of the food-related groups together to share their interests and introduce themselves, to open up avenues of collaboration. Appendix E provides a list of all of the food-related student groups at Duke.

(II) Start at the beginning of the Duke experience to initiate a culture shift among Duke undergraduates.

Example 1:

The first-year meal plan requires that students eat most of their meals at the East Campus Marketplace, a dining hall run by Bon Appétit. Because the first-years live together on East Campus and are new to Duke, the Marketplace would be a great place to focus dining hall-based food education initiatives, beginning in the first week of the academic year. To give another waste-reduction/education example: post-consumer food waste is currently composted at the Marketplace by dining hall staff. Students drop off their plates and staff compost the leftovers. I would be interested in seeing the effect of a comprehensive, student-led waste reduction campaign in the Marketplace that would start immediately upon the first-years' arrival, with demonstrations spearheaded by one of Duke's campus leadership groups – perhaps Students for Sustainable Living, the East Campus Resident Assistants, East Campus Council, or even the Graduate Residents – and framed as the start of a new tradition, “this is just how we do things at Duke.”

Example 2:

Currently, Dr. Charlotte Clark's Food and Energy class is performing a feasibility study on the potential for a Duke Farm. While Duke is not an agriculture-oriented campus, there are many examples of schools like Duke that have built substantial sustainable farms, which supply their dining halls, perform educational functions, and serve as organic incubators for landless farmers in the community. A Duke Campus Farm would be a wonderful educational tool, providing food for the dining halls and opportunities for students to learn about sustainable agriculture during their time at school.

(III) Support student activism.

Example 1:

As demonstrated in the case of UNC-Chapel Hill's student group, FLO, students have the ability to affect significant change on a university campus. While the administration cannot force students to care about food-related issues, they can support student activism and involvement by working collaboratively with student groups. Recently, students at Duke have been engaging in discussion with Jordan Treacle at UNC-CH regarding the initiation of a Real Food Challenge campaign at Duke. I recommend that Sustainable Duke and Dining Services support this effort and work with the students to bring the campus forward towards a more sustainable food future.

Recommendation Four:

Encourage leadership at Duke to make an institutional commitment to sustainable food procurement.

Rationale:

Duke University has not made a formal statement of policy regarding sustainable food procurement. Recognizing that the structure of Duke’s dining system makes it difficult for the university to create specific policy regarding food procurement, the university (through Sustainable Duke) should nevertheless make a statement that (1) acknowledges the fact that food purchasing has a significant environmental impact, and (2) pledges to take steps to reduce this impact.

Implementation:

Part I. Research the possibility of including food procurement in Duke’s Climate Action Plan.

Most of the GHG emissions associated with food procurement are considered “indirect emissions,” by IHEs, since they occur off campus and are (theoretically) recorded in the carbon inventories of other emitters. Thus, food purchasing is usually considered to be outside the scope of university GHG emissions inventories. According to the IPCC, the agriculture sector alone accounted for 10-12% of global GHG emissions in 2005 (Smith, et al., 2007), and some estimate that the entire food system (from agricultural production to the consumer’s table) is responsible for nearly 30% of annual GHG emissions.

While I am not suggesting that we include food purchasing emissions in the climate inventory itself, I recommend that Sustainable Duke increase its commitment to sustainable food procurement by officially including food and dining in the Duke Climate Action Plan, and by acknowledging that the university’s decisions regarding food purchasing have an effect upon

climate change. In the current plan, the words “food” and “dining” appear only in the context of a job title (Dining Services Director) and within a table listing environmentally-oriented student groups on campus (Campus Sustainability Committee, 2009).

Part II. Hire a full-time Green Dining Coordinator.

Recognizing that resources are limited, Duke would benefit greatly from having a full-time green dining coordinator to coordinate Dining Services and Sustainable Duke’s efforts in this arena. Currently, Tammy Hope, the Quality Assurance Manager for Dining Services, has some responsibilities related to greening food services at Duke. While Tammy has worked closely with Sustainable Duke on a number of initiatives, she spends a large percentage of her time conducting reviews for PACE and attending to other responsibilities.

I recommend that the Green Dining Coordinator work within Dining Services, but be responsible for partnering closely with Sustainable Duke on all initiatives. The coordinator should be able to devote all of his or her time to greening initiatives related to dining, including food procurement studies and improvement efforts, education and outreach on campus, coordination of student activities, and the implementation of new ideas and initiatives.

Part III. Review commitment to sustainability for all new eateries on the Duke campus, and include environmental concerns when reviewing contracts and making decisions about bringing new locations onto the Duke campus.

In the future, Duke should seriously consider environmental impacts of food purchasing when making decisions regarding which new eateries to contract at Duke. I am not suggesting that these decisions be based entirely upon this criterion, but I believe that it will be important for

Duke to include an eatery's level of commitment to sustainable practices as an integral part of the decision-making process in years to come.

7. Conclusions

The global food system, in its current incarnation, contributes to environmental degradation worldwide and is responsible for nearly a third of greenhouse gas emissions, as well as a number of serious social and economic injustices. Re-localizing the food system and increasing the sustainability of agricultural operations can help to alleviate some of the negative impacts of food production.

In this case study, I have explored the structure and operation of Duke University's regional food system through interviews with major food system players, including farmers, food distributors, eatery managers and consumers. As an institution with significant buying power, Duke has the potential to create a high level of demand for locally grown, sustainable food in this area of North Carolina. While Duke has done a great deal over the past several years to improve the sustainability of its dining operations, most eateries on campus currently do not purchase local and sustainable foods in any quantity. In hiring Bon Appétit Management Company to run the main dining halls on campus (as well as several other eateries), Duke showed that it was interested in providing sustainable and healthy food options to members of the university community. Now, Duke must take the next step towards reducing negative environmental and socioeconomic impacts associated with food purchasing policies in its dining establishments.

Table 3. Summary of Recommendations for Duke Dining Services and Sustainable Duke.

RECOMMENDATION ONE:
<p>Incorporate food procurement data tracking and reporting requirements into the PACE system.</p> <ul style="list-style-type: none"> • <i>Set PACE language and point distribution.</i> • <i>Hire a graduate student assistant through Sustainable Duke.</i> • <i>Plan voluntary pilot program, collect initial data.</i>
RECOMMENDATION TWO:
<p>Create a Green Dining Award, to be jointly administered by Dining Services and Sustainable Duke.</p> <ul style="list-style-type: none"> • <i>Best Overall Green Eatery</i> • <i>New Mover Award</i> • <i>Most Innovative Franchise</i>
RECOMMENDATION THREE:
<p>Build and foster a culture of environmental awareness and concern surrounding sustainable and local food issues, focusing on the student body at Duke.</p> <ul style="list-style-type: none"> • <i>Raise awareness of food-related environmental, social, and economic issues through education – both peer-to-peer and Duke-initiated.</i> • <i>Start at the beginning of the Duke experience to initiate a culture shift among Duke undergraduates.</i> • <i>Support student activism.</i>
RECOMMENDATION FOUR:
<p>Encourage leadership at Duke to make an institutional commitment to sustainable food procurement.</p> <ul style="list-style-type: none"> • <i>Research the possibility of including food procurement in Duke’s Climate Action Plan.</i> • <i>Hire a full-time Green Dining Coordinator.</i> • <i>Review commitment to sustainability for all new eateries on the Duke campus, and include environmental concerns when reviewing contracts and making decisions about bringing new locations onto the Duke campus.</i>

Sustainable Duke has been working on numerous greening initiatives related to other aspects of the university dining experience. For example, the sustainability team has partnered with Dining Services and Duke Recycles to pioneer food and dining waste reduction projects

across campus, and efforts such as the food composting program. In January of 2010, Duke Dining and Sustainable Duke teamed up to bring reusable to-go containers called “Eco-Clamshells” to campus (Duke Sustainability, 2010). In 2004, Duke adopted “Environmentally Preferable Purchasing Guidelines,” recognizing Duke’s “impact as a major purchaser of goods and services” (Duke University, 2004). These guidelines address the following six strategic areas: source reduction (reducing waste at the source), forest conservation, recycled content, landscaping, energy and water, and toxics and pollution. While the guidelines are not binding, they set priorities for purchasing and contain a section on data collection and performance reporting. Primarily, efforts to purchase “green” have focused on office products, buildings, construction, and furnishings, and vehicles, and have not been extended to food in a formalized, university-wide manner.

The data collected in this study paints a picture of challenges facing the university and other food system members, but it also brings to light several distinct opportunities for Duke to improve food procurement practices in all of its eateries. I developed a set of four recommendations that suggest ways for Duke to (1) begin tracking information related to food purchasing, (2) create financial incentives for some eateries to shift purchasing towards more sustainable food products, (3) increase student demand for sustainable food through raising awareness of food issues, and (4) make a formal institutional commitment to sustainable food procurement. These recommendations are summarized in Table 3, and discussed in detail in the previous section.

Duke University is a national leader in campus sustainability, and has demonstrated its commitment to environmental protection, social justice, and community-building in numerous ways. In the interest of continuous improvement, Duke Dining Services and Sustainable should

consider implementing some or all of these recommendations within the near future. Food connects us all, to each other and to the land itself, and represents a medium through which Duke could cultivate a strong campus environmental ethic, while simultaneously supporting the health and welfare of students, the environment, and the community.

Appendix A. Node structure for inductive coding.

Connections	○ What's important to Duke	- Creative publicity
- Communication		- Financial sustainability
- Partnerships		- Green-washing
- Regional Food System	- ECO	- Inefficient or silly protocols
Drivers	- Employees and workers	- Institutionalization of process
- Climate change and food	- Farmers Markets	- Meat processing
- Education	- Franchises and branded concepts	- Menuing setup
- Encouragement	- Green dining coordinator	- Recycling
- Environmental footprint	- Insurance	- Role modeling
- Food culture for Duke students	- Meat	- Student activism and group involvement
- Mission driven	- Media and press	- Sustainable farming
- Money	- Refectory	- Transportation
- Motivation	- UNC sustainability office	- Vetting
- PACE	- University sustainability	Standards and Labels
Food Topics		- Fair Trade
- Factory food	Obstacles	- Real Food Challenge
- Food supply and demand	- Access to capital	- Seafood Watch
- Food system	- Convenience and time	- USDA Organic
- Food waste	- Inefficiency	Values
- Gluten-free and allergies	- Infrastructure and equipment	- Consistency
- GMO	- Kitchen infrastructure	- Eatery relationship with customers
- Grass-fed	- Lack of quality	- Fairness
- Local food	- Lack of quantity	- Family farms and farm roots
- Obesity	- Money for data tracking	- Food quality
- Processed food	- Need for an aggregator	- Freshness
- Seafood	- No delivery	- Health and safety
Ideas	- Planning ahead to purchase locally	- Hormone- and antibiotics-free
- Green dining award	- Scale	- Nutrition
- Importance of pilot projects	- Seasonality	- Social responsibility and justice
- Information tracking	- Staffing	- Support for local economy
- Less meat consumption	- Student ambivalence towards food issues	- Taste
- On-campus farms	- Subsidies	- Triple bottom line
- Student assistantship	- Summer hours	- True cost
Major Players	- Time consuming	- Variety
- Bon Appetit	- Time for data monitoring	- Where food comes from
- Broadliners	- Too expensive	Free nodes:
- Carolina Dining	- Whole animal and prime cuts	- North Carolina is a unique place
- Chefs	Processes	- Organic certification is not right for everyone
- Community garden	- Behavior change	- Other sustainable practices
- Duke University	- Buying in bulk	
○ Duke Dining Services	- Consumer demand for sustainable food	
○ Duke's role in the food system	- Cooking	
○ Institutional buying power		

Appendix B. List of eateries at Duke (Duke Dining Services, 2010a).

Eatery Name	Notes on Eatery Type	Location
Alpine Atrium	Franchise, operated by Alpine Bagel Co.	Bryan Center
Enjoy the finest espresso, cappuccino, latte, Italian sodas, gourmet coffee, and smoothies in a spacious and relaxed atmosphere. Fresh grilled sandwiches, salads, soups, muffins, scones, and other pastries are available as well.		
Alpine Bagels	Franchise, operated by Alpine Bagel Co.	West Union
Offers a wide variety of fresh bagels and cream cheeses, fresh-squeezed orange juice, locally roasted coffees, bagel-wiches, soups, frozen yogurt, and fresh-baked muffins.		
Alpine Café at DCRI	Franchise, operated by Alpine Bagel Co.	North Pavilion
Offers daily selections of soups, sandwiches and salads.		
Armadillo Grill	Independently owned family business, with four locations in the Triangle	Bryan Center
Features an authentic Tex-Mex menu, including freshly made tacos on made-from scratch flour tortillas, hand-rolled burritos, enchilada plates, a salsa bar, and homemade queso and quacamole.		
Bella Union	Independently owned coffee shop	McClendon Tower
Brewing fresh coffee and offers fresh baked goods, frozen drinks, and novelty snack-foods.		
Blue Express	Independently owned	LSRC
Offers a Mediterranean menu, including hot and cold sandwiches, hearty entrees, fresh salads, and desserts.		
Chick-fil-A	Privately held, family owned restaurant chain operated by Bon Appétit at Duke	West Union
Features a traditional menu (chicken sandwiches, nuggets, Cool Wraps, waffle fries, and salads), as well as fresh Comic Cantina burritos and quesadillas.		
Dolce Vita	Independently owned coffee shop	French Science
Full Service Coffee Bar serving mostly Organic Fair, Mightly Leaf Tea, sandwiches, salads, wraps and pastries.		
Duke Coffeehouse	Operated by Duke University Union	Crowell Building
Snacks and drinks can be purchased on flex, food points and cash.		
Faculty Commons	Independently owned	West Union, Upper Level

<p>Faculty and staff enjoy this gourmet buffet, which offers hot entrees and sides, specialty salads, soups, and a salad bar. Personable servers offer fresh desserts to cap off the meal.</p>		
Fairview Restaurant	Independently owned	Washington Duke Inn
<p>A four diamond restaurant, serving exquisite food with wonderful plate presentation, attentive service, and cordial, elegant ambience.</p>		
Freeman Center for Jewish Life	Gourmet kosher kitchen, operated by Bon Appétit	Freeman Center
<p>This mecca of Duke's Jewish life features Henry's Place, a gourmet Kosher kitchen. Dinner is served Monday through Thursday, with special spreads for Friday Shabbat and Jewish holidays, including Passover. Vegetarians and those with dairy allergies are sure to find this location a treat.</p>		
Grace's Cafe	Independently owned	Trent Hall
<p>Features authentic Asian cuisine -- everything from pot stickers and General Tso's chicken to egg drop soup and Moo Goo Gai Pan. The menu includes lunch, dinner, and health-conscious specials, as well as a selection of traditional American breakfast and lunch food.</p>		
Great Hall	Dining Hall on West Campus, operated by Bon Appétit	West Union
<p>For Breakfast, select from hot entrees, made-to-order omelets, fresh pastries, seasonal fruits and melons, waffles and a selection of hot and cold cereals. For lunch and dinner, the Great Hall offers made-to-order pasta, a fresh stir-fry wok, a chargrill with meat and seafood, vegetarian entrees at the Spice station, a salad bar, a made-to-order deli with hot panini's, hand-tossed pizzas and calzones and hot fajita wraps.</p>		
The Greek Devil	Independently owned mobile cart	Bryan Center Plaza
<p>Serving Greek cuisine</p>		
Joe's Dogs on East	Independently owned mobile cart	Left of East Union Building
<p>Features Durham's Biggest All Beef Hot Dogs 1LB, 1/2 LB or 1/4 LB and Hot Sausage.</p>		
Joe Van Gogh	Independently owned coffee shop	Bryan Center
<p>Offering freshly roasted coffee, with a menu of classic espresso drinks and high quality coffee from around the world. Also, choose from our selection of local pastries.</p>		
Loco Pops on the Plaza	Independently owned local business, mobile cart	Bryan Center Plaza
<p>We offer a selection of our locally-made, handcrafted paletas (Mexican pops) at our kiosk on Bryan Center Plaza. We offer rich cream-based ice cream pops as well as light and refreshing fruit-based pops to suit your taste. Open daily, weather permitting.</p>		

The Loop Pizza Grill	Regional franchise with The Loop Restaurant Group	West Union
Features both thin-crust and authentic Chicago-style deep-dish pizzas, gourmet salads, fresh grilled fish, burgers, soups, desserts, and a "Lite Menu" for customers on vegetarian or health-conscious diets. Don't forget to try the thick milkshakes!		
The Marketplace	Dining Hall on East campus, operated by Bon Appétit	East Union
Features an all-you-care-to-eat breakfast, dinner, and weekend brunch and a-la-carte weekday lunch and late night dining. Options include hot and cold breakfast items, made-to-order pasta, rotisserie meats, gourmet pizzas, ethnic cuisine, a full grill menu, and the salad bar. <i>(All you care to eat meals included in First Year Plan)</i>		
McDonald's	Franchise with McDonald's USA	Bryan Center
Offers a full menu for breakfast, lunch, and dinner, including burgers, salads, and chicken.		
Nasher Museum Café	Independently owned	Nasher Museum
This sit-down restaurant serves a variety of locally grown and organic dishes, as well as upscale desserts and cappuccino-style beverages.		
OnlyBurger	Independently owned, mobile truck	Mobile
Panda Express	National Chinese restaurant chain	Bryan Center
We offer traditional Chinese favorites to fresh new taste creations with fresh veggies, unique in-house sauces and 100% soy oil with no MSG. We are sure you will find something to please.		
Pauly Dogs	Independently owned mobile cart	Bryan Center Plaza
Located on the Bryan Center patio, Pauly Dogs serves delicious hot dogs, sausages, chicken dogs, and veggie dogs. Choose one of Pauly's favorite topping combinations, or select from over 24 complimentary toppings.		
The Perk	Coffee shop owned and operated by Saladelia, a local business	Bostock Library
Saladelia @ The Perk is a retreat from the stress of the day. It's where you can relax and enjoy our fair trade, organic tea and locally roasted coffee with homemade desserts and pastries. Also serving healthy signature sandwiches, wraps, salads and soups.		
Quenchers	Independently owned smoothie shop	Wilson Center
Offers energizing smoothies, fresh-cut exotic fruit, energy bars, nutritional supplements, and trail mixes that compliment your healthy lifestyle.		
The Refectory	Independently owned, run by Bon Vivant	Divinity School
This "green" environment-friendly eatery serves hot breakfast and lunch with fresh, conventional, vegetarian and Vegan options. Catering also available for large or small events. Also open for dinner for Sundays.		

Refectory @ Duke Law	Independently owned, run by Bon Vivant	Law School
Hot, healthy and homemade breakfast and lunch serving Local, grass fed beef or vegetarian burgers, all natural grilled chicken, Philly cheesesteaks and so much more! Check out the fresh cut local sweet and white potato fries! Exceptional salads, Vegetarian, Vegan and Gluten Free menu items. Catering is also		
Saladelia at Smith Warehouse	Independently owned and operated by Saladelia, a local business	114 S. Buchanan Blvd.
Saladelia brings the flavor of the Mediterranean right to your mouth with all of the traditional essences of Lebanese and Greek cuisine, masterfully combined within our signature entrees, sandwiches, wraps, salads and desserts.		
Sanford Deli	Independently owned	Sanford School of Public Policy
This public-policy-themed eatery serves sandwiches customized to order, fresh salads, gourmet soups, and specialty pastries.		
Subway	Franchise, managed by Bon Appétit at Duke	West Union
Features healthy subs and salads from the world-famous sandwich chain. Edy's ice cream and sorbet are also available.		
Terrace Café	Independently owned	Duke Gardens
Take a break at the Duke Gardens and enjoy fresh-made sandwiches and salads, ice cream bars, gourmet baked treats, and hot and cold beverages.		
Tommy's	Independently owned	McClendon Tower
Tommy's is a local burger and bbq joint, founded by Duke alumnus and Q-Shack owner, Tom Meyer. All food is made to order, from scratch ingredients sourced from local farmers and ranchers. The diverse menu includes panini sandwiches, salads, vegetarian entrees and grilled to order steaks and salmon filets. Enjoy a pint of local and import draft beers before or after the game. Call 684-3287 for Merchants on Points delivery or to go orders.		
Trinity Café	Coffee shop managed by Bon Appétit	East Union
East Campus' very own coffee bar serves gourmet coffees, bubble tea, and fresh pastries. Light entrees, including salads, sandwiches, and sushi, are also available.		
Twinnie's	Independently owned	CIEMAS
This Irish pub nestled in Duke's newest Engineering building, CIEMAS, offers hot-out-of-the-oven breakfast pastries, made-to-order sandwiches, and fresh entrée salads in addition to its classic blends of coffee and beer on tap.		
Upstairs At the Commons	Independently owned	West Union, Upper Level
Join us for a great sit down meal, featuring local and organic ingredients.		

Appendix C. Bon Appétit Kitchen Principles.

Know Our Kitchen Principles

The following food standards have been created for the well being of our guests:

- Menus are written based on seasonality and availability of regional fresh product. Whenever possible, these are produced locally using sustainable and organic practices
- Turkey breast and chicken are produced without the routine use of antibiotics as a feed additive
- Hamburgers are made with fresh ground chuck from beef raised on vegetarian feed without antibiotics or hormones
- Other meats are raised without antibiotics as a first preference
- Milk is free of antibiotics and artificial Bovine Growth Hormone as available
- Shell eggs are produced cage-free and Certified Humane
- Vegetarian options are plentiful at every meal
- Healthy menu items are a mainstream offering throughout our cafés
- Salsas, pizza, marinara and other sauces are made from scratch
- Stocks are made from scratch, the day before use to ensure the removal of fats
- Turkey and beef are roasted in-house daily for deli meat
- Tuna is dolphin-safe, packed in water
- Seafood should be purchased fresh when available locally. Salmon is wild caught. We support the Seafood Watch guidelines as recommended by the Monterey Bay Aquarium
- Olive and canola oils are used for everyday salad dressings, specialty oils for other purposes (i.e. walnut oil or chili oil)
- Trans fats are not used in our kitchens
- All salad dressings are made from scratch. Nonfat and low-calorie dressings may be purchased as necessary
- Vegetables are prepared in batches at the last possible minute and served in the smallest possible batches
- MSG and peanut oil are never used in the preparation of our food
- Mashed potatoes are made from fresh potatoes
- Fresh squeezed lemon juice is used for cooking and sauces
- Cookies, muffins and breads (where possible) are baked fresh daily
- **Farm to Fork**
Farm to Fork is a Bon Appétit company-wide initiative to buy locally. The first choice is to purchase seasonal, regional and organic produce from local farmers and artisan producers within a 150-mile radius. These local products are served within 48 hours of harvest. We spend over \$55 million annually with local producers. The result is delicious food, stronger communities and healthier customers.
- **Seafood**
Seafood is purchased in accordance with the Monterey Bay Aquarium's Seafood Watch guidelines for sustainable seafood. Locally-sourced fish is the first choice for seafood purchases. Tuna is dolphin-safe, packed in water.
- **Meats**
Bon Appétit is actively working with ranchers to reduce the amount of drugs given to poultry, cows and pigs. The company purchases only turkey breast and chicken that has been produced without the non-therapeutic use of antibiotics that belong to classes of compounds approved for use in human medicine. Hamburgers are made with fresh ground chuck from beef raised on vegetarian feed without antibiotics or added hormones. For other meats, Bon Appétit chefs buy products free of antibiotics as a first preference. Free-range, organic and grass-fed beef and pork from local sources is served at many locations.

- **Cage-free eggs**
Bon Appétit has committed to purchasing cage-free shell eggs at all accounts. These eggs are from sources that meet the animal care standards of Humane Farm Animal Care, an independent farm animal welfare certifying organization.
- **Dairy**
Fluid milk is free of antibiotics and recombinant Bovine Growth Hormone (rBGH). Local sources are the first choice for dairy purchase.
- **Circle of Responsibility**
The www.circleofresponsibility.com is an educational site created by Bon Appétit to teach staff and guests about sustainability. Included is a thorough examination of how Bon Appétit kitchen principles support the environment, the community and personal health. After completing a rigorous training, café staff members are prepared to engage guests and teach them about the company's core sustainability principles and their beneficial effects. In addition, each café prominently displays Circle of Responsibility educational tools that help guests identify foods according to the categories of: health, vegetarian, vegan, organic, locally and responsibly sourced. This program promotes the benefits of sustainable food to thousands of people who eat in Bon Appétit cafés every day.
- **Fair Trade**
Bon Appétit supports farmers' rights and offers Fair Trade Certified, shade grown and organic coffee options wherever possible.
- **Low Carbon Diet**
The Low Carbon Diet is Bon Appétit Management Company's endeavor to drastically reduce the carbon footprint of all its cafés. Food production -- including processing, transportation, packaging, preparation and waste -- is responsible for one-third of global greenhouse gas production. The Low Carbon Diet takes a bite out of carbon emissions by reducing use of high-carbon foods, promoting seasonality, providing alternatives to foreign and bottled water, conducting energy audits of equipment and developing innovative waste management programs. Customer education is a major component of the Low Carbon Diet; diners have the opportunity to calculate and reduce the carbon footprint of their own food choices with an interactive calculator at www.eatlowcarbon.org.

Appendix D. AASHE STARS Dining Services Credit (AASHE, 2010).

Dining Services

This subcategory seeks to recognize institutions that are helping build a sustainable food system. Modern industrial food production often has deleterious environmental impacts. Pesticides and fertilizers used in agriculture can contaminate ground and surface water, which has potentially dangerous impacts on wildlife and human health. Furthermore, the often long-distance transportation of food to institutions produces greenhouse gas emissions and other pollution. Additionally, farm workers are often paid sub-standard wages, subjected to harsh working conditions, and exposed to dangerous pesticides. Institutions can use their food purchases to support their local economies, encourage safe, environmentally-friendly farming methods, and help alleviate poverty for farmers.

Please note that while dining services can also play an important role in conserving energy and water, reducing waste, and purchasing environmentally preferable materials other than food, STARS measures these impacts across the institution instead of by department; and therefore the benefits of these actions are captured in the Energy, Water, Waste, and Purchasing subcategories, respectively.

Dining Services		
Credit Number	Credit Title	Possible Points
OP Credit 6	Food Purchasing	6
<i>Tier Two</i>	<i>Dining Services Tier Two Credits</i>	
1	Trayless Dining	0.25
2	Vegetarian and Vegan Dining	0.25
3	Trans-Fats	0.25
4	Guidelines for Franchisees	0.25
5	Pre-Consumer Food Waste Composting	0.25
6	Post-Consumer Food Waste Composting	0.25
7	Food Donation	0.25
8	Recycled Content Napkins	0.25
9	Reusable Mug Discounts	0.25
10	Reusable To-Go Containers	0.25
Total		8.5

* credit does not apply to all institutions

OP Credit 6: Food Purchasing

6 points available

A. Credit Rationale

This credit recognizes institutions that are helping to build sustainable food systems through their food purchases. Institutions can do this by prioritizing the purchase of local, organic, Fair Trade, and sustainably harvested food items. These actions help foster robust local economies, healthier soils and streams, and secure livelihoods for farmers.

B. Criteria

Institution purchases food that meets one or more of the following criteria:

- Grown and processed within 250 miles of the institution
- Third-party certified (USDA Certified Organic, Marine Stewardship Council Blue Ecolabel, Food Alliance, Fair Trade)
- Grown on a farm that operates as a cooperative, has a profit sharing policy for all employees, or has a social responsibility policy covering all workers

This credit includes food purchases for dining halls and catering services operated by the institution or the institution's primary dining services contractor (e.g., Aramark, Bon Appétit Management Company, Chartwells, Sodexo). On-site franchises, convenience stores, vending machines, or concessions are excluded from this credit.

C. Applicability

This credit applies to all institutions that have residential dining halls. Institutions that do not have residential dining halls may choose to pursue or omit this credit.

D. Scoring

Institutions earn the maximum of 6 points when food that meets the criteria outlined above comprises 50 percent or more of food purchases. Incremental points are available based on the percentage of food expenditures devoted to sustainable food. For example, an institution that spent 25 percent of its food budget on sustainable food would earn 3 points (half of the points available for this credit). Scores are calculated according to the following table:

Enter values as indicated below to calculate points earned for this credit						
Points will be calculated automatically when data are entered in the STARS online reporting tool						
Factor	<i>Multiply</i>	Expenditures on Sustainable Food	<i>Divide</i>	Total Expenditures on Food	<i>Equals</i>	Points Earned
12	×	_____	÷	_____	=	(Up to 6 available)

Scoring Example

Example College spent **\$10 million** on food during the past year. Of those purchases, **\$1 million** was spent on food grown and processed within 250 miles.

Factor	<i>Multiply</i>	Expenditures on Sustainable Food	<i>Divide</i>	Total Expenditures on Food	<i>Equals</i>	Points Earned
12	×	<u>1</u>	÷	<u>10</u>	=	1.2

E. Reporting Fields

Required

- Percentage of food expenditures that meet one or more of the criteria outlined above
- An affirmation that the submitted information is accurate to the best of a responsible party's knowledge and contact information for the responsible party

Optional

- The Website URL where information about the institution's sustainable food procurement efforts is available
- Notes about the submission

F. Measurement

Timeframe

Report the most recent data available.

Sampling and Data Standards

Institutions may choose to track food purchases for a 12-month consecutive period or use representative samples. When using samples, institutions should accommodate seasonal and other variations in sustainable food availability and purchasing.

Include food purchases for dining halls and catering services operated by the institution or the institution's primary dining services contractor. On-site franchises, convenience stores, vending machines, or concessions are excluded from this credit.

Appendix E. Selected food-focused student groups at Duke.

Group	Undergraduate/Graduate/School
Duke Apiary Club	Trinity
Duke Community Garden	Trinity
Duke University Culinary Society	Trinity
Duke MBA Culinary Club	Fuqua School of Business
Environmental Alliance	Trinity
Farmhand	Nicholas School of the Environment
Honey Patch Community Garden	Nicholas School of the Environment
Plan V	Trinity

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