Investigating Local Food and Sustainable Dining at Colgate University

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Executive Summary

As the emphasis on sustainable living becomes more apparent, the slogan “Think Globally, Eat Locally” has arisen as a mantra of responsible eating. The idea of purchasing locally grown and produced food has carried over into the way universities manage their dining services. This report analyzes what exactly is meant by the term “local” and the extent to which Colgate University is committed to eating locally. It also recommends ways to increase Colgate’s use of local foods.

In a world where agriculture has become intensely commercialized, promoting the purchase of local food has its share of environmental and social benefits. The greenhouse gas emissions associated with food transportation are extensive—one goal of purchasing products from local food sources is to minimize the carbon footprint associated with that transportation. Smaller and more local farms also have the ability to grow food in a more sustainable manner by employing organic growth methods, low tillage, efficient irrigation, and promoting a diversified crop base. These farming practices help to minimize agriculture’s impact on the environment in a way that goes beyond carbon emissions. While it is acknowledged that a local farm does not always equate to a sustainable farm and that local transportation of goods may not necessarily lower emissions, the report works off the assumption that purchasing local food and sustainable food is overall a preferable decision. Additionally, the local food movement helps to foster a greater social welfare. It brings the buyer into closer contact with the grower thus forming stronger community bonds while at the same time boosting the local economy.

While the benefits of locally grown and produced food are generally understood, actually defining what “local” means brings about its own challenges. Debate arises over what distance can actually be considered but also whether or not there should be a standard definition at all. Programs like the Association for the Advancement of Sustainability in Higher Education (AASHE) set a standard definition for local food purchasing in order to evaluate overall sustainability of an institution. In opposition to this is the “as local as possible” mindset which does not have a standard but promotes the purchase of the closest available product. The measurement of the quantity of “local” food is another concern—while some peer institutions like Amherst College measure by dollars spent on local food, Colgate University measures by total food quantity.

It is important to look at peer institutions both as comparisons and as models for enhancing Colgate’s local food use. Hamilton College is used as the main case study for an effective sustainable dining model. Through their food service, Bon Appétit, and a student operated garden Hamilton College has been able to supply their dining halls with 30 percent local food—in comparison to Colgate, who through Sodexo provides roughly 15 percent. After an assessment of both food services, it was found that while Bon Appétit has the greater commitment to sustainable dining Sodexo has the means to meet the expectations of Colgate. It is our suggestion that Colgate foster a greater desire in the student body for sustainable food, expand the radius of “local,” develop more connections within that scope and create a baseline for measuring the amount of food used. With these changes, Colgate will be able to elevate its standard of sustainability within the dining service to the level of its peer institutions, which are seen as more effective in the eyes of bodies like AASHE.
Introduction

The way that food is produced and distributed can have serious impacts on the environmental, economic, and social conditions of a community (Feenstra 1997). This holds true regardless of scale as the decisions of local, regional, and national communities have repercussions that are felt at a global level. The realization of severe and detrimental human impact on the environment has prompted an interest in adopting more sustainable practices. Globalization and international commerce have created a delocalization of food supplies and have increased the distance that food is transported (Wallgren 2006). Additionally, from 1850 to 1990 approximately 156 billion metric tons of carbon have been released into the atmosphere from changes in land use and management practices (Houghton 2003). This number is the equivalent to about half of the carbon released from fossil fuel combustion over the same time span. Large scale, commercial agriculture is one major contributor to the magnitude of these emissions.

The local food movement has arisen in opposition to the deleterious environmental effects associated with human activities. Additionally, there has been a push for increased sustainability that has manifested itself prominently in the form of college initiatives. Local food is often perceived as a healthful and environmentally friendly alternative to long-distance food transport (Brown 2003, Wallgren 2006). A college or university’s involvement in local food systems has even become an indicator of the institution’s commitment to sustainability (Wilkins et al. 2000). However, a canvass of the current literature on the subject of local foods will reveal that the term “local” is variably defined by retailers, marketers, academics, and consumers. Therefore, there is no standard against which to measure, making claims of local food involvement misleading. Despite the ambiguity of what constitutes “local” food, the movement appears to have staying power as colleges across the nation are looking for ways to reduce their ecological footprints while satisfying the demands of their students.

Objectives

The goal of this project is to assess Colgate’s current effort to incorporate local food into campus menus and to identify the barriers that may impede that effort. In doing so we strive to clarify the meaning of the term “local” as it pertains to food production and consumption as well as to evaluate the potential environmental, economic, and health benefits associated with utilizing local foods. Though there are some concerns associated with the idea of local food, we seek to demonstrate the reasons why this initiative should continue to be pursued by Colgate as an institution. We will map out the place of local food within the larger sustainability movement as local food is one potential component of more sustainable dining on campus. By providing an overview of the present level of campus involvement and the benefits of local food we can make well informed recommendations that will hopefully result in an increased commitment to local food and sustainability in campus dining facilities.

Methods

The first step of this project was to review the published literature on local food to provide the background we would need to guide our research. The wealth of different sources and opinions revealed the complexity of the topic of local food and alerted us to the issues we would have to confront. Furthermore, we were given a sense of what other institutions were
doing to incorporate local products into their menus. These various sources proved invaluable when formulating questions to ask those in charge of dining at Colgate and our peer institutions.

To get a comprehensive overview of Colgate’s understanding of local food and the university’s operation, we conducted interviews with various members of the dining services administration. We spoke with Dan Fravil from Sodexo Campus Services as well as the Director of Dining Services, George Murray. These interviews provided a look at the inner workings of Colgate’s dining service and an estimate of the amount of food that is purchased and deemed local by the institution. Additionally, the information obtained led us to pursue other major components of the campus dining experience, including our local agriculture distributor, Dan Purdy and Sons. Dan Purdy and Sons acts as the inspector and processor of locally purchased food items, making it possible for Colgate to work within various health regulations.

Once a clear picture of Colgate’s present commitment to a local food system was established, we contacted Colgate’s peer institutions to understand what actions similar schools are taking. Representatives from Hamilton College, Morrisville College, and Colby College were interviewed for comparison.

The Case for Local Food

There are multiple benefits, both perceived and realized, of purchasing local food. These include a shortened supply chain that streamlines transactions and is less detrimental to the environment, increased freshness and quality of the product, and strengthening of the local community through economic and social relationships (Wilkins et al. 2000, Wallgren 2006). Also, in the case of Colgate, engagement in a local food system could attract prospective students and elevate the University above its peer institutions. By addressing each of these components in turn, we intend to argue that the benefits outweigh the drawbacks, but local food systems must be analyzed on a case by case basis to ensure feasibility. Furthermore, we want to stress that when purchasing and consuming local food is not a realistic option, there are many sustainable alternatives that need to be considered when selecting food providers.

Environmental Benefits

Large scale, industrialized agriculture has been a significant contributor to increased atmospheric carbon and environmental degradation (Houghton 2003). Farming operations of this size are often forced to use large amounts of fertilizers and pesticides in order to maintain the productivity of heavily farmed lands. Water intensive crops require irrigation systems that use fossil fuels and deplete water sources. Additionally, the monoculture nature of industrial farms exhausts soil nutrients, perpetuating the need for increased fertilization (Tokuda 1990). While not completely immune to the problems of large farms, smaller operations do have the ability to minimize their environmental impacts in innovative ways.

Small scale farming operations are less dependent on the demands of global markets and can therefore diversify their crops based on geography. They can grow the crops that the conditions dictate, limiting the stress put on the land. Also, it is theoretically easier for small farms to utilize such techniques as natural fertilizers and irrigation because of the lower volume required. Additionally, local food systems have the ability to reduce carbon emissions from
transport if efficient networks are created. However, it is not necessarily true that the proximity to the food will translate into lower emissions. This will be discussed in greater detail later.

Colgate’s potential influence on local farms through its business relationship may lead to an increase in the number of local farms using sustainable farming practices. If Colgate makes it known that purchases will only be made from producers who are committed to sound practices, local farms will be encouraged to assess their operations and make the appropriate changes. Colgate will have a greater impact on small local farms than on bigger operations because the university’s purchases represent a larger portion of the small farm’s revenue. This important economic incentive will put Colgate in a position to set the standards for participating producers. Therefore, Colgate can facilitate the spread of sustainable agriculture by entering into a local food system that places a high value on the way the food is produced.

**Quality and Nutritional Value**

It is often cited that a reason for supporting local food is the enhanced quality and nutritional value of the products (Charney 2009, Jones et al. 2008). There is certainly some validity to these claims when we look at the standards that are used to assess quality. The standards include, but are not limited to, cleanliness, freshness, lack of damage, use-by date, and origin (UNECE 2007). All of these parameters can be negatively affected along the food supply chain. Storage and preservation methods, as well as transport time, can lead to decreased quality and nutritional value as much of the produce we consume begins to lose nutrients after being harvested (Jones et al. 2008). Therefore, it is quite possible that foods classified as local will be of higher quality due to shortened supply chains. However, the time since harvest does not alone justify the perception of higher quality because even mass produced goods can reach their final market in less than a day. Consequently, the time since harvest and the processing techniques must be analyzed in tandem before a valid claim of quality and nutrition can be made. Still, the proximity to the food source in a local system indicates that foods may require less processing and storage and could more quickly arrive to the consumer.

**Local Economy and Social Connections**

While food expenditures may represent a relatively small portion of a school’s budget, where that money is going can make the difference between a local producer prospering or falling into economic turmoil. This is especially true in the area surrounding Colgate University where farmers are finding it difficult to compete with larger markets (G. Murray, personal communication, February 23, 2010). Director of Dining Services at Colgate, George Murray, and Chef Supervisor John Edick went so far as to express that Colgate’s purchasing power has likely prevented some local producers from going out of business. Colgate’s business could offer a much needed boon to the local economy and create a market for a more diverse local food supply. The production of diverse crops is also a more sustainable practice as it helps to maintain soil quality (Tokuda 1990).

Favorable economic ties have the potential to create positive social connections between the food producers and consumers. Consumers are able to intimately understand their food and those people who provide it. This breeds a respect for the process and the implications of food production. Understanding how food arrives on our plates will raise awareness about the consumption choices we make and which of these choices is most beneficial.
**Student Recruitment**

With sustainability and green initiatives becoming increasingly important topics, the ability for colleges to communicate their commitment to environmentally sustainable practices will be of great consequence (L. Roelofs, personal communication, April 16, 2010). If Colgate were to make the utilization of local food a priority, the campus would likely attract the growing group of students who care about sustainability. The college selection process is highly competitive for both students and colleges. It would serve Colgate well to do everything possible to recruit the highest caliber of students by reassessing one of the most visible aspects of the college experience, the dining service.

**Defining Local**

Locally grown food is gaining a significant amount of attention and salience in several of today’s markets and industry arenas. This is partly demonstrated through an increase in farmers markets, which are a large source of local food purveyance. In the United States alone, the number of farmers markets increased by 111% from 1994 to 2004 (Darby et al., 2008).

Despite the popularity of these local food movements and the increased desire from consumers for local food, there is no universally accepted definition of what local means (DeWeerdt, 2008). The definition tends to be flexible so that it can apply to different industries. One of the reasons the term is so hard to define is that the definition is rooted in location and place. Several theories, including one presented by Robert Feagan, have suggested that the concepts of location, place and region are social constructs and therefore dynamic entities. As a result, it is hard to define "local" because local can and does change based on consumer and societal perceptions of space (Darby et al., 2008).

It is a common belief that providing a constant and universal definition for local food is important because “... a label of origin connects it with a specific place, and opens the possibility that producers, as well as consumers, can be held accountable for their actions in that place” (Feagan 2007, pg. 26). This promotes the values and benefits (i.e. organic, fresh, healthy etc.) that are associated with local food because producers feel pressure to produce food of a certain standard. It also encourages farmers to practice sustainable farming techniques because of their association with the land itself. Having a standardized definition also provides a way for communities, businesses, universities and individuals to compare their local food consumption. The ability to compare leads these actors to make changes and increase their support of local food based on the results of others. Finally, it counteracts false advertising of local food. Defining local is not only important from an environmental and health standpoint, but from an economic and marketing one as well. Research has shown that if the area that is defined as local becomes too large, the product will lose appeal as a novelty and decrease in demand (Darby et al, 2008). This will in turn negatively affect the small scale farmers and communities that the local food movement attempts to support. In an effort to prevent these potential problems, there have been several attempts to define local. A selection of the more popular definitions will be discussed in detail in the following section.
**Distance Traveled**

The most straightforward definitions of local are those that provide a maximum radius for distance traveled. While there are several distances offered throughout the literature, the two most common distances are 400 miles and 100 miles.

According to research conducted by the Leopold Institute, two thirds of Americans polled consider 100 miles to be the definition of local (DeWeerdt, 2008). This distance was popularized by the publication of the book *The 100 Mile Diet: A Year Of Local Eating* by Alisa Smith and James Mackinnon. According to the authors, the radius of 100 miles was chosen because it “…is large enough to reach beyond a big city and small enough to feel truly local” (Smith and Mackinnon, 2007, pg. 21). This definition is also associated with the “locavore” movement. A locavore is defined as “…a local resident who tries to eat only food grown or produced within a 100 mile radius” (Thilmany et al. 2008, pg. 1303). The 100 mile radius highlights and supports seasonal diets of only regional crops. Although this provides a very specific definition, many people feel that it is too small. That is, consumers are very limited to what they can eat and often have to drastically change their diets. As a result, a 400 mile radius has also been defined in order to accommodate more options. The USDA defines local food as “…one that is raised, produced, and distributed within a locality or region and is transported less than 400 miles from its origin” (USDA 2008, section 6015). This distance provides a larger range for food production outside of a single metropolitan area. The 400 mile radius is often linked with a similar concept of “a day’s good distance.” This defines local as the area that is within a day’s driving distance because it is considered a reasonable distance to transport goods (DeWeerdt, 2008). Although this radius is more inclusive than the 100 mile radius, there are still issues regarding access to variety desired in the “common” diet.

**Defining Local within the Context of AASHE Stars Report**

The Association for the Advancement of Sustainability in Higher Education (AASHE) is a program created to move institutions of higher education toward sustainability. AASHE strives to establish changes in all aspects of the universities, including “…government and operations to education and research” (AASHE 2010, pg. 1). In order to measure progress towards sustainability, AASHE has created the Sustainability Tracking Assessment and Rating System (STARS). The program aims to provide universities with a framework for understanding all aspects of sustainability, a basis for comparison across time and different institutions and to create incentives for further action toward sustainability (AASHE, 2010). Furthermore, it is a program that provides long-term sustainability goals for established sustainable institutions and entry points of recognition for newly acting institutions (AASHE, 2010).

The local food component of the AASHE Stars reporting tool is located in the broader category of sustainable dining services. Focusing on local food portion specifically, AASHE Stars defines local food as food “grown and processed within 250 miles of the institution” (AASHE 2010, pg. 105). This rating system falls in the definition category of distance traveled, and can be compared to definitions that support the concept of a “day's good distance”. Unlike the standard distance traveled definitions, however, the AASHE tool gives half and quarter credits to universities that employ some aspects of the provided definition. For example, a
university is given partial credit if it purchases a food that is processed, but not grown, locally (AASHE 2010). The reporting tool credit system also takes into account many of the issues brought up in the standard definitions discussed above. AASHE recognizes that several universities use “in state” as an alternative definition for local. While they commend these universities for attempting to place a boundary on the definition, the organization believes that an “in state” definition has several limitations. For example, this definition penalizes universities that are located in small states. That is, these universities would automatically receive a lower score, solely based on the smaller access to resources. Another issue is that often arises with the “in state” definition of local is that “…it may be preferable from a pure distance perspective to purchase food from a farm just across the border in a neighboring state than a farm that's located on the opposite side of the same state” (AASHE 2010, pg. 106). As a result of these factors, AASHE promotes the distance traveled definition as the most appropriate for local food.

As previously mentioned, local food is only one section of AASHE's sustainable dining criteria. The sustainable dining service section is used to reward universities that support food production with low environmental impacts (AASHE 2010). While there are several factors that can be addressed by sustainable dining, this section bases its ratings based on three criteria:

1. Grown and processed within 250 miles of the institution
2. Third party certified (USDA Certified Organic, Marine Stewardship Council Blue Ecolabel, Food Alliance, Fair Trade)
3. Grown on a farm that operates as a cooperative, has a profile sharing policy for all employees, or has a social responsibility policy covering all workers (AASHE 2010).

A university receives the maximum number of credits if 50% or more of the food purchased fits these criteria. Similar to the local food rating, a university can receive partial credit if some of the food purchased falls within these regulations.

Defining “Local” as “as Local as Possible”
Although there are many different attempts to define what local is, it seems that the most commonly accepted definition is that local is “as local as possible.” The majority of organizations and communities “…are now less likely to put numbers on things…” (DeWeerdt 2008, pg. 1), which suggests that they have accepted this general definition. This definition seems to be most widely accepted because it does not restrict consumer diets to regional crops like some of the other definitions. This is demonstrated in several situations. For example, Emory University gives a two tier definition of local. The first tier defines local as within the state, giving “…highest priority to Georgia farmers…” (Emory University 2008, pg. 1). If these farmers are not able to supply the needs of the University, the second tier definition allows for a more expansive range that includes the “…eight state region of Georgia, Florida, South Carolina, North Carolina, Tennessee, Kentucky, Alabama and Mississippi” (Emory University 2008, pg. 1). Although preference is given to farmers that are in close proximity, if they cannot provide what is needed, they go to the closest area that produces what they need. This supports the line of thought that it is better to purchase within state rather than outside the state, or domestic rather than international (Feentra 1997). More specifically, it suggests that consumers should buy as close to their homes as possible and then expand outward to the closest providers. For example, for someone living in New York, it would be considered local to buy oranges from Florida rather
than buying ones from California. Although this is not a concrete definition, it is a good guideline to promote sustainable food practices

**Foodsheds**

A foodshed is another classification that has emerged to define local. The concept of a foodshed was created based on the model of a watershed. A watershed is used as a framework to understand and implement the appropriate use and interaction of water resources and the land associated with them. Similarly, foodsheds allow consumers to think about where their food comes from and how it gets to them (Kloppenburg et al., 1996). The actual concept of a foodshed was introduced as early as 1929, but it was formally considered when it was introduced in 1991 by Arthur Getz. In his article he defined a foodshed as “...the area that is defined by a structure of supply...” (Kloppenburg et al. 1996, pg. 34). In essence, a foodshed conceptualizes the flow of food in an area through the demarcation of where the food is grown, the route that it travels and the end location. Getz’s definition has been expanded so that a foodshed is not only defined by its supply, but by “…its own unique characteristics” (Feagan 2007, pg. 26), including plant and soil type, ethnicity, cultural traditions and culinary preferences as well (Kloppenburg et al., 1996). This creates somewhat defined boundaries for a foodshed because the only foods that are considered local are the ones that contain the characteristic of an area. One of the main issues associated with this definition, however, is that the defining characteristics are often too broad. This is due to the fact that the sizes of foodsheds vary depending on the amount of food available year round. As a result, the size of a foodshed can range from a city to a state to an entire country.

**Community Supported Agriculture (CSA)**

As previously mentioned in the description of foodsheds, community often plays a critical role in the definition of local. That is, the definition of local becomes the spatial delineation of a community (Feagan, 2007). As a result, another way of defining local is through Community Supported Agriculture (CSA). Community Supported Agriculture consists of “... a community of individuals who pledge to support a farm operation so that the farmland becomes, either legally or spiritually, the community's farm ...” (USDA 2009, pg. 1). In return for the investment in the operational costs of the farm, community stakeholders are given “shares” of the crop yields throughout the growing season. Based on these general characteristics, local in terms of CSA’s can be defined as the farm and the surrounding community members that access the farm.

One of the largest benefits of community supported agriculture is that it promotes the consumption of local foods by supporting small scale farmers so they are able to compete in the larger market (Bougherara et al, 2009). While this is a large benefit, there are also problems associated with it as well. Depending on the size of the farm, the community shareholders may not receive all of the products they need. An insufficient supply of food is also possible if the farm has a short growing season or a poor harvest (USDA, 2009). As a result, the area defined as local for CSA’s may vary annually depending on the number of members involved and the yield of the harvest. The CSA definitions of local do, however, tend to have a smaller radius than foodshed definitions.
Importance of Definition for Colgate

It is important for Colgate University to have a standard definition of local for several reasons. The most important reason is that in order for the university to promote its use of local food, there needs to be a consensual understanding throughout the entire community, including faculty, students and decision makers. When this occurs, the university will be able to truly promote its consumption of local food and its movement toward and support of sustainability. The move toward consuming more local food is desirable on several different accounts. As previously mentioned, local food has more nutritional value than processed foods, and its production also has an environmental impact. This contributes to the university’s larger sustainability goal. This is not only beneficial from an environmental standpoint, but an economic standpoint as well. The Princeton Review College Hopes and Worries Survey reported that 23% of perspective students said a sustainable campus would “very much” influence their college decision (AASHE, 2010). An increase in the university’s overall sustainability has the potential to increase the applicant levels of the university, which will in turn bring in more revenue and perhaps students of a higher caliber.

How is Quantity Measured?

An import factor to consider when attempting to define local is how the actual quantity of local food is measured. This is important because if institutions or individuals attempt to compare their consumption of local food, the results could be skewed if one is measuring based on number of pounds purchased and the other is measuring based on dollars spent. In the case of universities, it is important to know how peer institutions are measuring their local consumption in order to have an equal comparison. The preferred measurement method of several of Colgate's peer institutions is dollars spent. For example, Amherst spends $125,000 of its total food budget on local food, while Bucknell spends $1,000,000 of its total food budget on local food (Amherst College 2010, Bucknell University 2010). It is important to notice, however, that although both of these schools measure the dollars spent, they have different total budgets. As a result, it would be useful for these institutions to put their numbers into a percentage, such as Oberlin College (5% of total food budget), so they could be more easily compared.

Concerns about Local

While “local food” and “sustainable food” are terms that have different meanings, the extent to which they overlap is important. Though supporting local food in theory seems like the most sustainable option, there are some concerns that suggest “local” might not always be the best (Table 1). Thus, it is perhaps more appropriate to view local food as a component within the overarching theme of sustainability. While supporting local food in many cases may very well be more sustainable, the potential negative aspects must be recognized nonetheless. In particular, when it comes to sustainable dining on the whole, it becomes clear that local food comprises only one aspect of what it means to be sustainable.
### Table 1: The pros and cons of local food

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<thead>
<tr>
<th>Pro</th>
<th>Con</th>
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<tbody>
<tr>
<td>PR purposes</td>
<td>Often more expensive</td>
</tr>
<tr>
<td>Will help reach overall goal of carbon neutrality</td>
<td>Possibly more CO\textsuperscript{2} emissions from transportation</td>
</tr>
<tr>
<td>Support the local economy</td>
<td>Seasonality</td>
</tr>
<tr>
<td>Better relationship with the community</td>
<td>Limitations of Sodexo</td>
</tr>
<tr>
<td>Increase student awareness</td>
<td>Geographic impact</td>
</tr>
<tr>
<td>Quality and nutritional value</td>
<td></td>
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<tr>
<td>Increasing student support</td>
<td></td>
</tr>
<tr>
<td>Potential to build relationship with farmers</td>
<td></td>
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</tbody>
</table>

#### Carbon Emissions from Transport

It is a commonly held belief that the regional proximity of local food supplies should reduce the distance the food travels and therefore reduce energy costs as well. One basic, though not comprehensive, way to measure the environmental benefits of locally produced food is to compare the carbon impact from transportation to that of a conventional food system. In a large scale, long distance transportation system the majority of the carbon emitted per unit of product tends to be during the final distribution (Coley et al. 2009). This indicates that the preliminary energy costs from transport and storage are minimized in part by the quantity of goods. The opposite is often the case with local foods as the short distances are counteracted by the small scale transport capacity (Wallgren 2006, Coley et al. 2009). Therefore, geographically local food systems may not always have the lowest carbon impact when it comes to transportation. However, there is the potential to set up local supply chains that can more efficiently transport food to the consumers. Also, carbon emissions from transport are not necessarily the best measurement of the environmental impact of supply chains. For example, this parameter does not take into account the sustainability of the farming practices themselves which are independent of the problems associated with carbon emissions from transport. Furthermore, the carbon footprint of transport, sometimes referred to as “food miles,” is a poor indicator because the distance defined by “local” remains unstandardized and transportation accounts for only a small percentage of the overall carbon footprint (Jones et al. 2008). Still, the perception that shorter distances equate to less carbon emissions needs to be assessed when attempting to implement a local foods program since it represents one component of the bigger picture.

#### Geography and Seasonality

The actual location of the region defined as local is very important in determining the types of items produced. The regional climate, seasons, and soil quality dictate the variety of produce and livestock that can be reasonably raised. Therefore, some areas will naturally have a more robust and varied local food selection. One concern is that farmers will attempt to grow crops that are not well suited for their geographic location in order to meet demands for variety. This will likely result in stressed soils and decreased yields, both of which jeopardize the future
of the farmers and their land. The best solution is to educate consumers on the best local crops to purchase and the best alternatives when local foods cannot satisfy their preferences.

**Economic Impact**

Few people would refute that investing money back into the communities in which we live is a good thing. It helps to protect local businesses and ensure the livelihoods of our families, friends, and neighbors. However, when a decision is made to purchase local food, we are implicitly deciding not to support food producers outside of our locality (Jones et al. 2008). The precise effects of this are hard to project, but it is reasonable to believe that there would be noticeable impacts throughout the national and global economy if local food became extremely widespread. Though, given the location of Colgate University, it is clear that we cannot purchase the majority of our food from local producers. Therefore, Colgate will not be completely neglecting external food providers; we will be purchasing from producers both within and outside of our local food system.

**Local Food within Sustainable Dining/Agriculture**

Within the context of overall sustainability, local food is only one component of sustainable dining (Appendix A). When it is unreasonable to purchase local foods, such as when supplies and variety are limited by the seasonality of crops, there are additional components that should be considered. The primary concern should be assessing how the food is produced as that is the step that is most energy intensive and likely to have the greatest environmental impact (Jones et al. 2008). We present here an overview of sustainable agricultural practices that would make a producer more attractive to an institution like Colgate.

Sustainable agriculture is much more than just a set of practices; it is an adaptive process that allows producers to change according to internal and external stresses (Wall & Smit 2005). In our current struggle to combat the causes and effects of global climate change, there is a growing concern for farming practices with a low environmental impact. The production stage of the agricultural supply chain tends to be the most energy intensive, making it the major contributor to the overall carbon footprint (Shimizu & Desrochers 2008). Alternatives to many current farming practices are available that address the salient environmental issues while preserving the productivity of the land and operation. The alternative practices are aimed at reducing the harmful effects of fertilizers, pesticides or bio-cides, tilling practices, and irrigation. Synthetic fertilizers can be replaced with natural fertilizers or the planting of nitrogen-fixing legumes (Tokuda 1990). These can generate the same results as synthetic fertilizers without the large amounts of energy required for production. The use of harmful pesticides is also a problem with modern, high yield farming. High quantities of pesticides are often required as crop pests adapt. Additionally, many pesticides are toxic and may possess mutagenic or carcinogenic qualities that are harmful to humans (Tokuda 1990). The use of insect predators, or ‘biological pest control’, can replace dangerous pesticides.

Irrigation can be a major contributor to the energy input of food production. By selecting crops that are drought-resistant and by employing efficient techniques such as trickle or drip irrigation, farmers can reduce the amount of water that is used and the energy needed to power the irrigation systems (Tokuda 1990).
One last sustainable practice of importance is the conservation of soil. Soil can quickly become drained of its nutrients if farmed too intensively. Crop rotation and low till farming allow nutrients to be retained and replenished within the soil (Tokuda 1990). This increases productivity and protects the integrity of the soil over time.

Smaller farms are in the unique position to incorporate many of these practices because of their size. They have the potential to grow as businesses in an environmentally friendly way if given the chance. Colgate has the ability to support small, local farms and facilitate sustainable agricultural development. However, when local products do not satisfy Colgate’s needs, we also have the ability to endorse those producers who fully embrace and implement sustainable farming practices.

Comparing Local Food and Dining at Colgate University to Peer Institutions

Though local is defined in a variety of ways, it is important to investigate Colgate’s peer institutions as a means of comparison. While it is crucial to track sustainability within the context of Colgate itself and measure improvements in relation to past years, it is also imperative to view local food through a comparative lens as it has become one of the major measures of sustainability in higher education. In particular, universities that face similar geographic constraints are of considerable significance since one of Colgate’s main barriers to accessing more local food is location. (Appendix B shows several peer institutions and their definitions of local.) While contracted to a different corporate dining service than Sodexo, Hamilton College serves as a good means of comparison to Colgate based on several similarities of size, location, and a strong commitment to sustainable dining. Despite Colgate’s pledge to achieve the highest standard in “local dining” possible, it appears that Hamilton College surpasses Colgate in the quantity of local food served in their dining halls. While Hamilton and Colgate have similar definitions of local, Hamilton College’s overall percentage of “local food” would likely be higher than Colgate’s even if their definitions were the same since Hamilton has over a thousand fewer students. Though Colgate and Hamilton’s definitions are different, Hamilton nearly doubles the amount of local food served in its dining halls compared to Colgate. The difference in volume seems to be influenced by other factors than simply having fewer students – especially since Hamilton’s definition of local is within a shorter distance. Though it is difficult to definitively conclude how Hamilton is able to use so much more local food than Colgate, comparing local food purchases, definitions of local, and differences in corporate regulations/policies between dining services may help bring clarity to this discrepancy.

Contracted with Sodexo dining services, Colgate University is able to successfully access a fair amount of local food despite corporate regulations. Considering local anything within 200 miles, Colgate currently purchases about 15 percent of all food from local vendors (M. Stagnaro, personal communication, February 9, 2010). While Colgate can not purchase the full variety of items that are available locally year round, products that are locally used include items from fresh produce to farm raised and locally manufactured items (Appendix C).

Though it appears that Colgate supports a wide variety of local products, local food still remains a small percentage of the food served in the dining halls. While the main problem appears to be inadequate quantities and lack of availability to items such as fresh produce, other issues may underpin why Colgate isn’t purchasing more local food. According to Colgate’s
executive chef, Michael Stagnaro, buying local is more expensive and therefore it has to be factored into the budget (M. Stagnaro, personal communication, February 9, 2010). Even though monetary constraints were not explicitly stated as a barrier to using more local food, Colgate may not be able to support an increased dining budget. As Frank Dining Hall alone serves more than 2,500 meals each day, substantially increasing the amount of local food within the dining services would be difficult on this scale. Also, an ongoing struggle has been identified between popularity and buying local. Many students request brand names and Colgate is in a difficult position between supporting a local economy and buying particular products requested. While Colgate’s dining services aim to provide as much local food as possible, keeping students happy is extremely important to the staff as well. Despite the fact that a lot of certain foods can be purchased locally, students will not want to eat the same thing over and over again. Even with varied preparation and ingredients, the dining hall management is reluctant to purchase large quantities of any one item due to previous experiences in which dishes with certain items became unpopular (G. Murray, personal communication, February 23, 2010).

**Case Study: Hamilton College**

Located just under 20 miles away in Clinton, NY, Hamilton College is a strong proponent and supporter of local food and sustainable dining. Contracted with Bon Appétit, Hamilton uses nearly 30% of all food in their dining halls from local sources. Defining local as any food within 150 miles, Hamilton gets a significant portion of their local produce from within this range as well as a number of products that are locally processed. However, Hamilton also considers items as local that are outside of this mileage if they support a local farm or sustainable business.

Though there are many similarities in foods used locally by Colgate and Hamilton, Hamilton College does use a variety of local foods that Colgate does not. Analogous to Colgate’s dining practices Hamilton gets their milk, pork, Greek yogurt, and as much local produce and meat as possible by season through Purdy and Sons – a third party distributor. In addition to using Purdy and Sons, Hamilton uses Regional Access which also coordinates with local farms and serves as a means to access other local products. Unlike Colgate, Hamilton gets local canola oil, ice cream, turkey and chicken when available, hamburger beef, and salt (Appendix D). Though they are not grown locally, Hamilton also gets locally processed flour and locally roasted coffee beans from Syracuse. Hamilton also includes all purchased seafood as local because their fish suppliers engage in the most sustainable fishing practices possible.

Though some of the differences in local food may simply be a product of regulations, Bon Appétit at Hamilton College overall appears to be more forward thinking in its ideas and commitment to being sustainable than is Colgate. Within the next year, Hamilton is aiming to have a dining hall that is high-fructose corn syrup free which would require many more things to be local as this additive is often included in pre-packaged goods. Additionally, Hamilton is investigating how to get local soy in order to make its own tofu. While Purdy and Sons and Regional Access are the main sources for local produce, Hamilton College also has a student led organic farm on campus. Last year the dining halls purchased about $2,800 of produce from the farm and this year they are looking to nearly double the amount of crops cultivated. As the purchasing of local food is clearly important to Hamilton dining services, Bon Appétit at Hamilton also make it its mission to spread awareness of its commitment to sustainability. Each day “farm-to-fork” icon stickers are placed next to local food items in the dining halls to
heighten student awareness of the local food cause (P. Raynard, personal communication, February 19, 2010).

**Major Barriers Currently Impeding Local Food at Colgate University**

While Colgate undoubtedly is committed to sustainable dining through the use of local food, there are several significant obstacles to increasing the amount of local food used in the dining halls. While all of the individual barriers shed light on various issues surrounding local food, geographic location appears to be the greatest problem preventing Colgate from increasing the amount of local food on campus. Due to the cold temperatures and the short growing season, Colgate has limited access to fresh, local produce (M. Stagnaro, personal communication, February 9, 2010). While there are plenty of farms in the area that would be willing to sell Colgate their products, the university has the misfortune of being out of session when produce is most abundant. Since the academic school year and growing season are on opposite schedules, only small quantities of seasonal goods can be purchased once the summer/fall harvest has been depleted. Along with the issues of seasonality, Colgate also faces serious obstacles of gaining access to local food of a product in quantities that will be useful (G. Murray, personal communication, February 23, 2010). Since many of the farms in the area are operated on a relatively small scale, Colgate is often unable to access the amount of food – in particular produce – needed purely from local vendors. While Colgate is not a large institution, smaller volumes of produce supplied by multiple local farmers not only fall short of the amount ultimately needed to feed the student body, but access to local produce is also highly unreliable (D. Fravil, personal communication, February 9, 2010). While Colgate obtains all of its produce through Purdy and Sons, what and how much they are able to sell to Colgate varies on a weekly basis. Depending on the local availability of produce, Purdy and Sons occasionally must purchase products outside of local farms to meet the needs of their customers (D. Purdy, personal communication, February 19, 2010).

In addition to the struggles facing Colgate in access to local produce, Colgate also struggles some with the purchasing of meat and poultry. Due to safety concerns surrounding the butchering and processing of these products, very few locally operated business are FDA certified to sell and distribute meat products. Though Purdy and Sons is our sole distributor of beef, only a small number of poultry farms exist in the area and thus all of the poultry must be purchased from a large scale distributor outside of the local region (M. Stagnaro, personal communication, February 9, 2010).

While the effects of seasonality and geographic location on local food availability are beyond the institution’s control, there are still several measures that can be taken to increase the amount of local food within Colgate’s dining halls. Hamilton College faces the same obstacles as Colgate but is doing much more when it comes to local food. Though the quantitative needs are less at Hamilton than at Colgate, corporate regulations of Sodexo policy do somewhat restrict Colgate’s ability to access more local food. While Sodexo is certainly committed to socially responsible practices and is an advocate of local food, Bon Appétit’s progressive attitudes and initiatives can likely explain a significant portion of the observed differences between Colgate University and Hamilton College.
Comparing Sodexo and Bon Appétit Policies

As is the case with many contemporary North American colleges and universities, companies are contracted by institutions to provide on-site dining services. Though there are a number of food contractors available across the country, Sodexo and Bon Appétit are among the most popular. While Sodexo and Bon Appétit both aim to reduce environmental impacts by operating sustainably, they differ slightly in practice and overall mentality concerning local food.

Sodexo

Though Sodexo is contracted by a number of different kinds of facilities, colleges and universities make up a significant proportion of their customers. As a company, Sodexo states that it supports the efforts of local farmers and attempts to find the most sustainable food available. Within the past two years, Sodexo has made some serious changes in their policies and goals in order to improve sustainability within higher education on campus and in community life. In 2008, Sodexo launched the Sustainability Education and Expert Development (SEED) initiative to increase environmental efforts as a business. More recently, Sodexo has also partnered publicly with the American College and University Presidents Climate Commitment and Second Nature (a leading organization in the movement toward sustainability in higher education) which illustrates a clear dedication to addressing the sustainability of their operations (Sodexo 2009). Additionally, offering local produce is part of Sodexo’s commitment to supporting local economies. According to corporate policy in North America, Sodexo defines “local” as “produce that is grown or delivered in the same state or region” that it is served (Sodexo 2009, pg. 5). While defining something from in state as local is certainly a common interpretation of “local,” this broad definition may not encompass the most sustainable practices in larger states – such as New York. Though more narrow definitions of local may be more difficult in certain regions, this corporate standard is much looser than competitors’ (Sodexo 2009). Interestingly, Colgate’s definition of local is not consistent with the corporate definition. Since Colgate’s delineation of what constitutes local is actually more stringent than the Sodexo policy, Colgate is attempting to achieve higher standards of sustainability than Sodexo suggests.

Due to a recent change in policy, Sodexo is also now committed to choosing seafood from sustainable sources. It is working toward purchasing 100% of its seafood from sources that are certified by either the Marine Stewardship Council (MSC) or from sustainable aquaculture sources (Sodexo 2009). Since this is a newly developed initiative, not all seafood currently being served in Sodexo-run dining halls is deemed sustainable. Additionally, Sodexo’s regulation which requires that all food purchased go through a third party slightly hinders the amount of local food that can be purchased (M. Stagnaro, personal communication, February 9, 2010). Under the third party rule, local vendors can not sell their product directly to Colgate and must sell their goods to a “third party” first. While this policy is meant to ensure health standards, not being able to deal directly with a local source in some cases hinders the amount of local product the third party is able to sell to Colgate (M. Stagnaro, personal communication, February 9, 2010). Though Purdy and Sons is one of Colgate’s main third party distributors, they have obligations to other buyers as well which does not allow Colgate to take full advantage of local products. For example, since Hamilton College also contracts with Purdy and Sons, Colgate is unable to purchase as much local food since Hamilton must get part of the amount available. Additionally, many of the third party vendors also have obligations to private residents for biweekly shares of produce that must be met as well. While all cuts of beef are purchased
through Purdy and Sons, Sodexo policy does not allow Colgate to buy local ground beef which forces the institution to purchase this outside of the local region despite its availability (D. Fravil, personal communication, February 9, 2010).

**Bon Appétit**

Known for its extremely progressive attitudes in pursuing sustainable dining and commitment to environmentally and socially responsible practices, Bon Appétit is one of the premier contracted dining services for colleges and universities across the country. Fully embodying their mission statement of “food services for a sustainable future,” Bon Appétit has led the way in the development of sustainable food service (Bon Appétit Management Company 2010). Bon Appétit seems to be far ahead of Sodexo with respect to attitudes, mentality, and practice. Defining local as a product sourced from within 150 miles, Bon Appétit seeks to purchase local items whenever available. Significantly reducing “food miles” under this stricter definition of local, Bon Appétit as a corporation aims for a higher standard of sustainability in the purchase of local food than Sodexo (Bon Appétit Management Company 2010). Additionally, though Sodexo has recently adopted initiatives which support sustainable seafood, Bon Appétit has been purchasing all seafood under the guidelines of the Monterey Bay Aquarium’s Seafood Watch guidelines for the past eight years (Bon Appétit Management Company 2007). Though selecting local food is definitely an integral part of Bon Appétit’s mission, being sustainable in other aspects of purchasing when local is unavailable is also critical to dining operations. When it comes to purchasing products – whether local or not – Bon Appétit takes into consideration various methods of animal production and produce cultivation to determine what products are the most environmentally friendly (Bon Appétit Management Company 2007).

Among several other initiatives that it has adopted, Bon Appétit places an emphasis on supporting farming and sustainability advocates. In the past year, Bon Appétit has developed an extensive student garden guide to assist and encourage university students in local, onsite farming (Bon Appétit Management Company 2010). As is exemplified by Hamilton College, Bon Appétit has assisted students in the cultivation of their local organic gardens. This further facilitates the increased use of local produce in Bon Appétit-run dining halls and shows how a successful relationship between the food service provider and a student run farm can be developed. Additionally, Bon Appétit regulation does not prevent its sites from purchasing local products as long as the price is competitive. Bon Appétit run dining halls can purchase items directly from a local vendor as long as they have appropriate liability insurance (P. Raynard, personal communication, February 19, 2010). There are no restrictions by Bon Appétit on ground beef and thus Hamilton College is able to purchase this product locally (P. Raynard, personal communication, February 19, 2010). Though many dining service contractors are now becoming aware of the importance of dining sustainably with a focus on local food, Bon Appétit’s experience and high standard of achievement is unmatched by many competitors.

**Administrative Standpoint on Local Food**

On the whole, the Colgate administration is very concerned with sustainability and is working hard toward carbon neutrality. Of course Colgate’s dining service is only one facet that must be addressed in reducing carbon emissions, but it is nonetheless an important component. While addressing the issues within the dining service will eventually need to be tackled, at this
point sustainable dining is not of the highest priority (L. Roelofs, personal communication, April 16, 2010). Currently, Colgate is directing most its time, energy, and funds toward projects that will have the greatest impact on reducing carbon emissions. Though facilitating change within the dining service is not ranked as most important, Colgate is still cognizant of the issues and wants to strengthen the existing relationship with Sodexo. Thus far, Sodexo has definitely been responsive and cooperative in making the changes that have been asked within the past few years (L. Roelofs, personal communication, April 16, 2010). At this point, the administration would not likely make a shift to another dining service, however if Sodexo stops making progress in terms of sustainability a change in contract would be considered.

**Factors Involved in Switching from Sodexo to Bon Appétit**

While achieving higher standards of environmental sustainability is of significant importance, changing food contractors at Colgate would be a massive ordeal. Colgate has been using Sodexo for over 10 years and the university on the whole has been pleased with the quality of service for the price Sodexo charges (H. Bradford, personal communication, April 1, 2010). However, since Colgate renews its contract with Sodexo every year, the institution is not bound to Sodexo for a lengthy period of time and can make a switch to a different dining service more or less whenever it is desired. As a corporate enterprise, Bon Appétit consistently strives to obtain the business of Colgate and remains in regular communication with financial executives at Colgate offices (H. Bradford, personal communication, April 1, 2010). While Bon Appétit has never formally extended a bid at a specific price, the administration at Colgate believes that it would cost more than what is currently being paid to Sodexo. Though the financial component is a major factor, another consideration is the disruption of current practices and staff. By switching providers, Colgate runs the risk of decreasing the quality of dining services and losing valuable staff members of Sodexo (H. Bradford, personal communication, April 1, 2010). While Bon Appétit is a more sustainable dining service, Sodexo should first be given the chance to improve its practices before any changes are made. Sodexo has made considerable progress over the past several years in terms of sustainable dining but there is certainly much more room for improvement. As Sodexo staff members are fairly open and willing to make changes at the request of student demands, Sodexo must become more proactive and progressive in their practices (H. Bradford, personal communication, April 1, 2010). By the same token, students themselves must become more aware and push Sodexo to make some important changes. As a first step, Sodexo can perhaps attempt to adopt some of Bon Appetit’s objectives or policies to facilitate change. By doing so, Sodexo may very well be able to implement the necessary changes to be environmentally competitive in practice with Bon Appétit and significantly raise the standards of sustainable dining at Colgate.

**Improving Student Attitudes toward Local Food and Sustainable Dining**

While the main barrier to increasing the amount of local food in the dining halls at Colgate appears to be regional constraints, the second major issue appears to be student attitudes toward local products. With the popularization of many name brands, dining service representatives from both Sodexo and Colgate operations expressed student reluctance toward the adoption of local products (M. Stagnaro, personal communication, February 9, 2010). Items such as cereal and ice cream hold Colgate’s local food percentage back significantly due to student preference for brand names and the large quantities consumed (G. Murray, personal communication, February 23, 2010). If this attitude could be changed, Colgate could
significantly increase the local food in its dining halls by switching out several brand name products that are purchased because of student demand to comparable products that are local. Since Sodexo and Colgate want to satisfy student requests, changing student opinions about local food could eventually foster an equally fulfilling dining experience that is more ecologically sustainable.

Advertising Local
In order to get students to further support local food, a multi-pronged approach involving several types of educational awareness would be necessary. On the most basic level, information regarding why local food is good should be made readily available to the student body. While many people may be well versed in the potential benefits of buying local food, those who are not should be informed of the advantages to help shape the attitudes of Colgate students toward the local food cause. If everyone is given access to the same information, students will be more apt to accept changes that increase the amount of local food in the future. As of now, the only information readily accessible to students concerning local food and sustainable dining is in the form of a small poster at the entrance of Frank Dining Hall (M. Stagnaro, personal communication, February 9, 2010). Though the information is there, students may not pay attention to it on their way in and out of the dining hall and thus it needs to be accessible in other ways. Information about local food could instead be distributed through campus wide emails, in various forms of media on campus, and through interactive seminar discussions such as brown-bags.

While a poster outlining the benefits of local food may not be the most effective means to inform the student body, spreading awareness of local products already being used in the dining halls could be quite valuable. Students are unknowingly eating many local products every single day in the dining halls but often have no way of knowing. By mirroring the practices of Bon Appétit dining services of labeling food items that are made from local products each day, Colgate could quickly increase the support of local food through this method (P. Raynard, personal communication, February 19, 2010). Utilizing this technique at Hamilton College, dining service directors asserted that students felt a stronger sense of unity with the local community and greater responsibility to be environmentally and socially sustainable. If more students at Colgate adopted such a mindset, demand for brand name products would hopefully decrease and acceptance of similar local goods could potentially increase.

Student Garden
Many colleges and universities within the past decade have begun to implement programs that have assisted students in planning and running their own local garden on campus (Bon Appétit Management Company 2010). While providing an additional source of local produce for cultivars that might be lacking in abundance, community gardens serve a much greater purpose in generating student activism and support for local food. Recently, plans have just passed to organize and fund a student run garden on campus at the beginning of the next school year. Though there is great interest in the development of a student garden by some organizations on campus and students who are environmentally aware, the idea of a student run garden is likely a completely foreign idea to a significant portion of the student body. Students that are not involved with environmental groups on campus or well versed in the initiatives happening within higher education to make dining sustainable may not be aware of the benefits of local gardens or
even that the idea is feasible. By advertising the idea and benefits to the campus, students would become more conscious of sustainable dining and it would likely garner support for the project. Since there is already great interest expressed in the idea of a community garden, spreading the word would likely lead to more student support and demand for placing this idea in action. Additionally, a community garden would provide increased support of local food as well as increasing the amount of local food available for use in Colgate’s dining halls. As not being able to access enough local produce is one of the major obstacles Colgate faces in increasing the amount of local food on campus, an on-site garden would provide increased access to fresh fruit and vegetables. By supporting local food in this fashion, advocating for other aspects of sustainable dining would likely follow and facilitate a change in student opinion toward increasing local products. As the community garden at Hamilton College served as a catalyst for increased support of sustainable dining (P. Raynard, personal communication, February 19, 2010), similar results would hopefully follow at Colgate.

Recommendations for Improving Local Food Sustainability

Based on a review of the benefits and drawbacks of local food, we suggest that Colgate increase its support for locally produced goods. Though Colgate roughly estimates that about 15% of purchases come from local sources, a more accurate estimate of local food use would be extremely useful for any future analyses. Regardless of the current usage, any increase in the amount of local food would create even stronger social and economic ties with the community and potentially increase support for the use of more sustainable agricultural practices. However, we also recommend that an emissions survey be conducted for the local food transport system to ensure that the food is delivered in the most efficient and environmentally friendly manner. Additionally, changes within Sodexo should be considered to increase sustainable dining on campus.

Create Baseline of Local Food Use at Colgate

First and foremost, a baseline of how much local food is currently being used is of the greatest priority if Colgate is to increase the sustainability of its dining operations and the amount of local food used. As of now, the exact amount of local food being used in the dining halls is unknown and it is important for Colgate to determine this value. Determining the present usage will serve as a means of comparison to future years. By marking the progress of the institution in terms of local food usage, administrators and sustainability coordinators will be more equipped to identify how further progress can be achieved. Calculating the baseline of local food use would be a fairly simple task for Sodexo staff to complete. While calculating this percentage could be done in a few ways, one way would be to first identify how much money is spent out of the yearly total budget on products that are considered local. Though a working definition of what is considered local for Colgate would have to be determined in order for this to be computed properly, this value could then be divided the total food purchases. This would ultimately provide the dining staff and administration with a hard value that represents the current percentage of food purchased from local vendors rather than a value that is likely misrepresentative of what is actually occurring.

How Should Local be Defined for Colgate?

Colgate University currently defines local as food grown within 200 miles of the campus. The definition, however, has not proven to be sufficient, as Colgate serves a relatively low
percentage of local food compared to the total amount of food purchased. As a result, it seems that the best solution to this issue is to refine the understanding of local. In the specific case of Colgate University, the most effective “new” definition may be rejecting the standard definitions of local. This is not to suggest that Colgate should disregard attempts to purchase local food, but rather it should extend the definition to encompass aspects that are not traditionally viewed as local.

In the most general sense, Colgate University should expand its definition of local food to include the larger category of sustainable dining. Based on several different factors specific to the university (e.g. location, size, student demand and Sodexo restrictions), it appears that Colgate will not be able to reach its local food consumption goals using a 200 mile radius definition. For example, due to its location in central New York, there are several foods that can never be purchased locally. As a result, Colgate can never receive credit for purchasing locally whenever it purchases those specific foods. If the definition was broader, however, this would not be an issue. One issue to take into account, however, is the possible perception of “greenwashing.” Colgate would have to make it a point to publicize what it considers to be local, so students, faculty and other universities understand how local is being defined.

The AASHE Stars rating system provides a good, workable framework for defining both local food and sustainable dining. Although it was created for all universities, the definition can be tailored to fit Colgate’s specific needs. As previously mentioned, the AASHE definition of local is located within the larger, three part definition of sustainable dining. The first part of this definition is that a food is grown within a 250 mile radius of the university (AASHE 2010). This is very similar to the current Colgate definition, and therefore does not need to be adjusted. Colgate should continue to purchase food from the farms it currently supports and continue its growing relationship with Purdy and Sons. In addition, the university should also attempt to create connections with new farms within the given distance. These new connections, however, can only go so far as there is a limit to what can be grown in the area. The next part of the AASHE definition is that food should be grown on a farm that is either community supported or socially responsible (AASHE 2010). This is very similar to the previously discussed concept of CSAs. If Colgate forms any new contracts with farms, they should attempt to buy a share of the crops (i.e. participate in a CSA farm) or make sure that the farm provides benefits for all of its employees. These types of farms, especially those that participate in community sharing programs, promote and practice environmentally friendly farming techniques that are characteristic of the local food moment. It should also be noted that these farms are not necessarily specified to be in a 250 mile radius of the university within the AASHE definition. Although it would be the best option to purchase from a farm that practices these techniques and is within 250 miles of Colgate, the school should look for these characteristics when it needs to move outside of the small radius.

In essence, it is clear that Colgate cannot purchase all of its food from farms that are within a 250 mile radius, and therefore should focus on other sustainable characteristics to evaluate potential farms and products. The last part of the definition is that food purchased should be third party certified (AASHE 2010). Similar to the second criterion, this promotes the support of food that is either organically or sustainably grown. This reinforces the idea that if the food cannot be local, it will at least be sustainable, which is the next best thing. For example, if
Colgate is looking to purchase oranges, the best farm would be one that uses sustainable farming techniques, has a community shareholder program and is as close to Colgate as possible. Even though it is not technically considered local (i.e. within 250 miles), this product is the most sustainably grown that is feasible. This line of thinking is similar to the “half credit” component of the AASHE rating system. Universities are able to receive partial credit for their actions if they follow some of the sustainable dining guidelines. This encourages colleges to use the most sustainable or even “most local” food that they can.

After consideration of all applicable factors, it appears that the most appropriate definition of local for Colgate University is “as local as possible.” More specifically, Colgate should define local as food that falls under one of the three characteristics provided by the AASHE STARS program in order to purchase the most sustainable food as possible. To assist in the application of this new definition, a “local food tool” could be distributed to dining service managers to educate employees to select the most sustainable and “local” food possible when dealing with different vendors (Appendix E).

**Implement Charting Emissions from Food Services (CHEFS)**

Clean Air – Cool Planet is a nonprofit organization dedicated to finding and promoting solutions to global warming (Clean Air – Cool Planet, 2010). The organization has several different programs aimed at fulfilling these goals, one of them being the Campuses for Climate Action program. This program “…supports institutions in finding and demonstrating energy and global warming solutions” (Clean Air – Cool Planet 2010, pg. 1). More specifically, the program assists universities in measuring their carbon footprints and provides solutions to reduce them. Although the program offers several tools to measure the carbon footprints of a variety of aspects on university campuses, the most recent tool is one dedicated solely to the impact of university dining services.

The Charting Emissions from Food Services (CHEFS) tool is used to “…quantify the carbon impact of food production, processing, distribution, preparation and disposal” on college campuses (Clean Air – Cool Planet 2010, pg. 1). Although the tool has not yet been released, it was created with the hope that it will be applicable to any campus based organization, simple enough for anyone to use and accurate enough to inform and encourage better decision making by dining service managers. The CHEFS tool is web based, making it accessible and free to all colleges and universities. In order to use the tool, however, individual campuses will have to collect data regarding purchasing and operations. As a result, the output of the tool will only be as accurate and useful as the effort put in to collecting the data. While this may seem somewhat time consuming and difficult, the program provides a template to make data collection as easy and informative as possible. The data collection process has also proven to be informative in its own right. For example, on campuses where the CHEFS tool was piloted, it was found that the process of data collection about the dining services led to discussions and changes even before the tool was applied. For example, universities found that “…the process of investigation uncovered new opportunities to ask questions, track information that had been hitherto neglected, and better understand their campus supply chains, purchasing policies and limitations “ (Mulla 2010, pg. 1).
The CHEFS tool appears to be very useful and something that Colgate should consider applying to its sustainability efforts. Although the tool is focused on the larger issue of sustainable dining, the university’s purchasing and consumption of local food is a section in the data collection template. It is important to recognize, however, that this tool only focuses on the carbon emissions associated with the use of local food and of the dining services as a whole. Though carbon emissions are an important part of sustainability, they influence only one part of the larger whole. When it comes to food, purely analyzing carbon emissions as an indicator of sustainability could produce many problems. Since so many factors directly impact carbon emissions from agricultural production, this tool should not be used independently. As a result, Colgate should use this tool in tandem with other efforts to define, measure and increase the sustainability of its dining services.

**Future Research at Colgate University**

The research presented in this paper on the use of local and sustainable food at Colgate University should be used as a starting point for future research. This paper looks at the general issues surrounding the topic and acts as a tool to begin conversation among university members and stakeholders. As a result, there are several different areas of research that could improve both the knowledge and strength of this argument.

One of the most useful directions future research could go is to further develop the argument of sustainable dining. This paper focuses on one component of sustainable dining (local food) and briefly mentions others, however there is much more that can be discussed on this topic. One project that could be very useful would be measuring the carbon emissions of the dining facilities on campus and locating areas for improvement. Calculating this carbon footprint is a large endeavor and would therefore be most appropriate for a semester-long research project. The results, however, would be very useful in making the dining services as a whole more sustainable. Another useful project would be a more in-depth look at student opinions about local food. The best way to do this would be through either focus groups or a survey that asked students about a range of different issues concerning local food and sustainable dining. This would allow Colgate staff to make better informed decisions about local food and to address the most pertinent issues to Colgate students pertaining to this subject. If sustainable dining is a priority for the students then it also needs to be a priority for the administration.

**Changes within Sodexo**

While Sodexo has made great strides in terms of sustainable dining over the past several years, it is clear that more improvement is possible. Though certain aspects of Sodexo – such as the “third party” rule – can not be controlled, Colgate does have some power to facilitate changes in Sodexo practices desired by students and administration. As Sodexo is often willing to listen to student concerns, many of the current issues should be brought to the attention of Sodexo staff in an attempt to implement change. Starting small, Sodexo could simply begin by more clearly and consistently advertising local. Additionally, Colgate could provide students the opportunity to meet some of the local farmers that the institution purchases products from. This is currently being done at a number of schools (Middlebury 2009) and would likely increase student awareness support for local food at Colgate. Sodexo could then work toward larger projects such as helping to develop and run a community garden at Colgate. Though plans are in place to begin a student run garden for next fall, it is important for to Sodexo to be supportive and generate
good relations with the garden on campus. By referencing Bon Appétit’s student garden guide, Sodexo staff can perhaps gain some insight into dealing most effectively with such an endeavor.

Sodexo could perhaps adopt some of Bon Appétit’s practices as a means of achieving greater sustainability. Instead of reinventing the wheel, Sodexo could mirror aspects of Bon Appétit to gain some headway in sustainable dining. Sodexo can also try to expand its network of local vendors. There are definitely more farmers and vendors in the area that would certainly sell their products to Colgate but they are not connected to a third party vendor. If Colgate could devise a way for more farmers to get connected to the larger vendors, this would greatly increase the amount of local food available. In addition to supporting more local farmers, Colgate could investigate other third party vendors. While Hamilton also uses Purdy and Sons, in addition they use a company called Regional Access that helps them source more local food (P. Raynard, personal communication, February 19, 2010). Use of more third party vendors could help Colgate greatly increase the amount of local food in the dining halls while complying with Sodexo’s regulation. Since Colgate is currently getting all of its local products from within 100 miles, there are likely more vendors in nearby counties that could be used to purchase items that are currently shipped from far distances (Appendix F shows areas within various distances from Colgate).

Sodexo has the power and means to utilize the most sustainable growers possible. If there is a local farm that has abundant tomatoes but uses unsustainable practices, then Sodexo has the obligation according to their own “pledge to the environment” to either find a more sustainable grower or to financially aid that local farmer to use more sustainable methods (Sodexo 2009). Sustainable practices include, but are not limited to, low chemical inputs, poly-culture cropping, high genetic variability, low fossil fuel input, responsible water usage, and attention to soil integrity. All are methods that can be employed by local farmers given the right consumer demand and financial support. In order to fulfill their own promises towards sustainability and to meet the growing demand from students, Sodexo should evaluate the sustainability efforts of the food suppliers it currently deals with. If practices are deemed unsustainable, then Sodexo should look for other food vendors that are able to supply the most sustainable products possible given the regional constraints Colgate faces.

Sodexo has made changes at Colby College, Ithaca College, and Emory University to expand and advertise these institutions’ sustainability efforts. Emory, which currently uses thirty percent local food, has dedicated itself to using seventy-five percent locally produced and grown foods by 2015 (Sodexo 2009). Colby College utilizes 20 percent locally produced food and offers an organic menu to its residents. Along with Sodexo’s greater dedication to more sustainable food at these institutions, it has also implemented more energy efficient practices and appliances within the dining halls (Sodexo 2009). Both Colby and Ithaca College boast energy efficient kitchens that reduce each school’s carbon footprint (Sodexo 2009). Sodexo has published its success with all three of these schools. If our dining service is able to produce this level of sustainability at other schools then it should be able to meet Colgate’s expectations and demands for greater attention to local and sustainable food use.
Overall Recommendations for Colgate University

Though there are several areas for improvement, several aspects of local food and dining should definitely be taken as priority (Table 2).

Table 2: Overall recommendations for local food at Colgate University

<table>
<thead>
<tr>
<th>Recommendations for Colgate University</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Create baseline of local food use</td>
</tr>
<tr>
<td>• Improve students’ attitudes toward local food</td>
</tr>
<tr>
<td>• Advertise local foods</td>
</tr>
<tr>
<td>• Have Sodexo become involved with the student garden</td>
</tr>
<tr>
<td>• Expand definition of local – use AASHE stars rating system as a guide</td>
</tr>
<tr>
<td>• Implement charting emissions from food services (CHEFS)</td>
</tr>
<tr>
<td>• Encourage Sodexo to become more sustainable</td>
</tr>
<tr>
<td>• Create meet and greet events with local farmers</td>
</tr>
<tr>
<td>• Educate administration</td>
</tr>
</tbody>
</table>

While local food and sustainable dining may not be viewed by Colgate as one of the most pressing issues in terms of overall sustainability on campus, it certainly should not be taken lightly. The administration must be educated on the current status of local food use as perceptions are likely skewed from inaccurate and incomplete data. Many administrators are likely under the assumption that Colgate is doing as much as possible in terms of local food. While Colgate is certainly doing a lot more than several of its peer institutions, the current state of local food should not be settled for. If administrators are able to see more clearly the importance of this issue, greater progress in terms of overall sustainability will be possible in the future. Sustainable dining and local food are both measures that are extremely important in campus sustainability evaluations. If the current issues with dining on the Colgate campus are reviewed in the near future, the impacts will be able to contribute to Colgate’s goal of meeting the President’s Climate Commitment of carbon neutrality in the next few years.

Conclusion

After an extensive survey of the current efforts of local food use at Colgate and the barriers that pertain to the issue, we have determined that extending the use of local food would be beneficial to the institution, the surrounding area, and the larger sustainability movement. The establishment of an extended definition of “local” as it applies to Colgate would also be advantageous as it could be made to encompass sustainable practices as well as proximity to the institution. When properly managed and implemented, a local food system could facilitate the use of sustainable farming practices, lower Colgate’s environmental impact, and act as a useful recruiting tool for attracting prospective students. Colgate’s investment in the community would also support local food producers and create a stronger and more positive social connection. The potential to know where and how food is grown is exceptionally valuable as differences in farming practices are critically important to overall sustainability within food services.

However, despite the many benefits of purchasing local products, we also understand the limitations of implementing a local food system on campus. For example, Colgate must operate within the guidelines of the current food service provider. While Sodexo is an advocate of local food, some of their policies hinder Colgate’s ability to purchase all the local food that is available. Colgate should encourage Sodexo to remove these barriers, allowing the school to take
full advantage of the local products. Additionally, Colgate’s geographic location presents another problem as a short growing season limits local food production.

In situations where purchasing local is unreasonable, we stress the importance of pursuing the most sustainable alternative. The irrigation and fertilization methods of potential food producers are two of the many components that Colgate needs to assess when selecting new providers or evaluating current ones. The research from this paper provides the necessary framework for making these purchasing decisions. Lastly, although local food has the potential to be an advantageous endeavor, it is only one step in the movement toward more sustainable dining here at Colgate. Equipped with this understanding and approach, Colgate can improve dining and ensure a more sustainable future on campus.

Acknowledgements

We would like to thank Bob Turner, John Pumilio, Dan Fravil, Mike Stagnaro, George Murray, Lyle Roelofs, Hugh Bradford, Dan Purdy, and Pat Raynard for their help with this project. Each was integral to this project and their knowledge was invaluable.
Appendix A

Sustainable Dining

The daily practices of dining halls on college campuses are influenced by environmentally minded students and staff. Students call for a greater use of locally produced food items in their meal selection, but where food comes from is only a fraction of the overall environmental concern. The concept of sustainable dining is a concept that has caused a shift in the behavior of both corporate food providers and the dining services of individual institutions. How food is prepared, served and disposed of all fall under the spectrum of a sustainable dining experience.

Food preparation is perhaps one of the more important aspects of achieving a sustainable dining service. Students are often more focused on a quick and convenient meal rather than how the food is prepared or what is in the dish (Schechter 2007). The Slow Food Movement focuses on local and organic food inputs that go through a process of slower cooking like braising meats as opposed to products more associated with fast food chains like hotdogs, french fries etc. (Slow Food USA 2010). The goal of this is to promote consumer awareness of what is going into each meal and also an acceptance of healthy eating. College dining services promote healthy meal choices with the idea of Slow Food by gradually changing the eating habits of students—a shift from something like processed chicken patty sandwiches and french fries to roasted chicken and root vegetables (Schechter 2007). Middlebury College, one of Colgate’s peer institutions with a self operating dining service, actively follows Slow Food principles and has made a concerted effort towards other sustainable dining initiatives.

Some schools in the northeast have been successful in not only supporting local food suppliers but also establishing their own organic gardens. Bowdoin College, another self operating peer institution, has a fully functioning organic garden that supplies the dining halls with fresh produce and doubles as a location for community education (Bowdoin College 2010). The garden sits on a one acre plot of land that is broken up into four different sections for various farming practices. It is worked by students in the Bowdoin Organic Garden Club as well as community members and is funded by the college’s dining services, its Student Activities Foundation Council and the Real Food Challenge, a national group promoting on campus gardens (Bowdoin College 2010). Middlebury College has a student driven farm which was deemed Community Supported Agriculture (CSA) in 2009 (Middlebury College 2010). Colgate is currently in the preliminary planning stages for planting its own organic garden. This will ultimately supplement the amount of organic food already purchased. Colgate provides completely organic rice and beans for meals, a healthier option than other available processed foods (M. Stagnaro, personal communication, February 9, 2010).

Organic waste produced by dining halls is another challenge tackled by the sustainable dining principle. With roughly 2,500 meals served a day at Frank Dining Hall, Colgate students generate about a quarter of a pound of post consumer waste per day (M. Stagnaro, personal communication, February 9, 2010). This excess food could potentially be composted thus minimizing the amount of waste produced by the dining halls, a key goal of sustainable dining. Both Middlebury and Bowdoin compost the organic waste from their dining halls and use the
compost product as fertilizer for their campus gardens. Middlebury composts 300 tons of food each year, meaning that 75 percent of their total food waste does not end up in landfills (Middlebury College 2010). While Frank Dining Hall staff currently separates food waste for composting, the campus does not have a designated site to actually process the material. Small scale composting does occur on campus: Colgate’s Composting Club brings compost bins to weekly brown-bags and other events and some Broad Street houses drop off food waste for composting at the LOJ. Colby College, a peer institution also managed by Sodexo, works around not having an on-campus site for composting and instead sends the 260 tons of annual post consumer waste to a composting facility in Unity, Maine (Colby College 2010). Colgate might be more successful in its sustainability efforts if it were to find a facility comparable to that used by Colby as opposed to finding an on-campus location. Other student groups have also helped in eliminating food waste. Colgate Hunger Outreach Program (CHOP) works with Frank Dining Hall to take uneaten meals to local soup kitchens and holds “Scrape the Plate” events to raise student awareness about the amount of food that is left unconsumed at each meal (Colgate University 2010).

Byproducts of cooking can also be used in a sustainable manner. Used vegetable oil and frying oil is collected by sustainable dining services and distributed for other purposes, namely biodiesel. The LOJ used the leftover oils from Frank Dining Hall in an attempt to convert the house’s heating system to be compatible with biodiesel. While the initial attempt was unsuccessful, the school is looking to refine and perfect the system. Middlebury’s vegetable oil is used by the school’s Nordic ski team for their truck which was converted to use biodiesel (Middlebury College 2010). Colby donates oil to a local farmer who uses the oil in his converted tractors that work the fields that provide the school with some of its produce (Colby College 2010). The effective reuse of waste and byproducts is integral to being a truly sustainable dining service.

Food is not the only aspect of a meal considered in becoming a sustainable dining service. How things like napkins, plates, cups and take out containers are used play heavily into deciding the extent of an institution’s sustainability. Colgate’s dining halls not only recycle their paper, cardboard, aluminum and plastic but they also use products made from recyclables (Colgate University 2010). The plastic trashcan liners from the primary contracted company, Mobil Chemical, are made from 30-90 percent recycled materials while the companies that provide our disposable plates and take-out containers all use recycled paper and fibers (Colgate University 2010). These containers, as well as the chlorine free napkins, are considered to be compostable items and will perhaps facilitate the move towards composting waste. The O’Connor Campus Center uses biodegradable utensils made from cornstarch; these have a smaller impact in landfills than the conventional plastic utensils which do not degrade over time (Colgate University 2010). One of Frank Dining Hall’s locally sourced vendors has helped to increase dining sustainability. A Utica based provider delivers 250 pounds of tomato sauce weekly to Colgate in large plastic containers, then sterilizes and reuses the containers again for the next week’s delivery (M. Stagnaro, personal communication, February 9, 2010). This process is preferred to that of the previous vendor which used metal cans which required energy intensive recycling.
Our peer institutions also utilize similar methods in eliminating their non-food waste. Bowdoin also uses biodegradable flatware for their take-out meals as well as their two largest catered campus events (Bowdoin College 2010). Middlebury, like Colgate, uses disposable plates and containers made from already recycled materials (Middlebury College 2010). Colby takes a different approach: they instead use china, metal flatware, and linens in the place of any disposable materials. While this has different implications for water usage, it does minimize the amount of actual waste ending up in landfills.

It should be noted that the Association for the Advancement of Sustainability in Higher Education considers Bowdoin, Middlebury, and Colby to have exemplary sustainable dining programs (AASHE 2010). Colgate has yet to meet that classification with its own sustainable dining program. This seems due to Colgate’s lack of a strong composting program and on-campus organic garden, both of which have been achieved by our other peer institutions.

Local Food vs. Sustainable Food

The industrialized agricultural system within America has a deep negative impact on our environment and is largely driven by consumer demands. This system unsustainably consumes fossil fuels in energy input and transport, overextends water resources through irrigation, and leads to topsoil degradation (Horrigan et al. 2002). These extensive inputs to agriculture lead to further environmental harm through water and air pollution and diminishing biodiversity within wild and agricultural species (Horrigan et al. 2002). With a greater emphasis on environmental awareness, the agricultural sector is forced to react to the sustainability demands of its consumer base. University dining halls have a valuable position in this—they have the power to choose where their food comes from and who produces it and at the same time shape the way students see and value food.

The general consensus of sustainable agriculture advocates is that the current system involves production methods that are unhealthy for not only the environment but the people engaging in the farming, the organisms being farmed, and the people eating what is farmed (Sustainable Table 2009). The owners and workers of the farm should receive fair payment for their labor, the plants and animals should not be subjected to harsh chemical processes or inhumane treatment, and the people consuming the food should be able to enjoy a safe and healthy product while having as small of an impact on the land as possible. The majority of our agriculture does not live up to these standards. Factory farms may produce large quantities of food but the profits earned are not evenly distributed between owners and laborers. In other cases, efficiency calls for the inhumane concentration of livestock into over-packed feedlots and extreme energy inputs for grains to feed the animals. These examples say nothing about the biodiversity impacts of monocultures or the eutrophication in streams from chemical and biological runoff from farms.

An emphasis on standardization, efficiency and monoculture crops has led to a higher level of genetic modification within the crop base. A decade ago, 22 percent of American cropland was considered to grow genetically modified crops (Heller & Keoleian 2000). That number has increased over the years. Homogeneity within a crop population leads to a greater vulnerability to pests and disease, which then requires a more intense use of pesticides. This vulnerability explains the annual use of 3 million tons of pesticides worldwide which use about
1,600 different chemicals, a number of which have unregistered toxicity levels (Horrigan et al. 2002). Pesticide runoff pollutes surrounding streams and pesticide residue on food can endanger consumer health. The annual cost of pesticide use is estimated at $8 billion, $5 billion of which is paid in environmental and health costs (Heller & Keoleian 2000). These inputs may have resulted in an efficient and cheap product, but the degradation they have on the environment is unhealthy for consumers and will ultimately impede the ability of the land to sustain current levels of agriculture. A little more than a decade ago, 15 percent of America’s agricultural enterprises were responsible for 85 percent of the food (Bird & Inkerd 1993). The industrial machine has been able to push out the small family farmer who cannot afford to keep up with the inputs necessary to drive down the cost of the final product.

Sustainable agriculture is basically seen as the opposite of the current industrial agriculture model. Sustainable food and agricultural methods include crop rotation, no-till or low-till farming, soil management, low chemical input, crop diversity and a use of renewable energy (Horrigan et al. 2002). Crop rotation and crop cover help to ensure the quality of soil nutrients as well as prevent soil erosion. Poly-culture crops aim to enhance biodiversity within species as well as throughout the farm, thus strengthening resistance to disease and minimizing the need for pesticides. These goals are best carried out on smaller farming systems. Smaller farms have a greater capacity to employ the methods of sustainable agriculture given the necessary economic support (Horrigan et al. 2002). While sustainable agriculture and local agriculture are not necessarily synonymous, their efforts are generally seen to go hand in hand.

It is true that a being a small family farm does not ensure that sustainable practices are actually used, however the face to face encounters that can potentially occur between grower and consumer help to engender a more sustainable ethic (Bird & Inkerd 1993). In personally dealing with the local farmer, consumers have a greater sphere of influence over the level of sustainability than they would over an industrial farm across the country. Consumers can ask the farmer to employ more sustainable practices. These personal interactions also help to hurdle one of the main barriers to achieving true sustainable agriculture: in the attempts for greater crop yields, farmers can succumb to a “technological treadmill of increasing inputs and decreasing profit margins” in order to compete with the larger industrial farms (Horrigan et al. 2002, pg. 453). Increased investment in local agriculture helps overcome these competition pressures and helps to support more sustainable agricultural.
Appendix B

Colgate’s current local food purchasing compared to peer institutions. Maps were constructed based on stated university definitions of local.

The Extent of "Local" for Colgate University and Surrounding Peer Institutions
Appendix C

Local food currently purchased by Colgate University organized by category and location:

Winter Purchases- Mento Produce (Syracuse, NY)
- Red cabbage
- Green cabbage
- Acorn squash
- Butternut squash
- White potatoes
- Chef potatoes
- Assorted apples
- Apple cider
- Red onions

Seasonally Available Purchases – Mento Produce (Syracuse, NY) and The Common Thread (Madison, NY)
- Corn
- Carrots
- Celery root
- Red onions
- Apples
- Zucchini
- Potatoes
- Yellow squash

Grocery Items
- Dry kidney, navy and black beans (Cayuga Pure Organics – Brooktondale, NY)
- Granola (Upstate Harvest – Guilford, NY)
- Pancake mixes (New Hope Mills – Auburn, NY)
- Marinara sauce and pasta (The Pasta Shoppe – New Hartford, NY)
- Assorted fruit juices (Red Jacket Orchards – Geneva, NY)
- Salad dressing (Ramona’s Dressing – Baldwinsville, NY)

Dairy Items
- Yogurt (Chobani – New Berlin, NY)
- Milk, sour cream, cottage cheese (Crowley’s – Binghamton, NY)
- Cheddar and Monterey Jack cheese

Farm Raised and Locally Manufactured Items
- Pork (J&D – Georgetown, NY and S&C Farms – Utica, NY)
- All cuts of beef and chorizo, bratwurst, and breakfast sausage (Purdy and Sons – Sherburne, NY)


**Appendix D**

Local food currently purchased by Hamilton College:

*Winter Purchases – Syracuse Banana (Syracuse, NY) and Purity Farms (Bridgewater, N.Y)*

- Cabbage
- Winter squash
- Potatoes
- Rutabagas
- Assorted apples
- Apple cider
- Yellow onions
- Garlic
- Tomatoes
- Strawberries
- Cucumbers

*Seasonally Available Purchases – Syracuse Banana (Syracuse, NY), Regional Access (Trumansburg, NY), and The Hamilton on campus garden*

- Corn
- Carrots
- Celery
- Lettuce
- Apples
- Zucchini
- Potatoes
- Lettuce
- Strawberries and blueberries
- Jalapeno peppers
- Sweet peppers
- Chives
- Dill
- Farro (*Thor Oschner – Trumansburg, NY*)

*Dairy Items:*

- Yogurt (*Chobani – New Berlin, NY*)
- Milk, sour cream, cottage cheese & ice cream (*Byrne Dairy*)

*Meat:*

- Beef & Pork (*Purdy and Sons – Sherburne, NY*)
Appendix E

“Local food” purchasing tool:

Choosing a Food Purveyor

- Is it grown within a 250 mile radius?
  - YES: Create relationship with
  - NO: Next question

- Is it 3rd party certified?
  - YES: Is it a CSA Farm?
    - YES: Create relationship with
    - NO: Create relationship with
  - NO: Next question

- Is it a CSA farm?
  - YES: Is it as close to Colgate as possible?
    - YES: Create relationship with
    - NO: Next question
  - NO: Try to find another purveyor that fits the characteristics

- NO: Next question
Appendix F

Representation of distances for local food purchasing at Colgate based on several definitions; also represents Colgate’s current local food purchasing radius:

Suggested Definitions for "Local" in Local Food Purchasing
Works Cited


