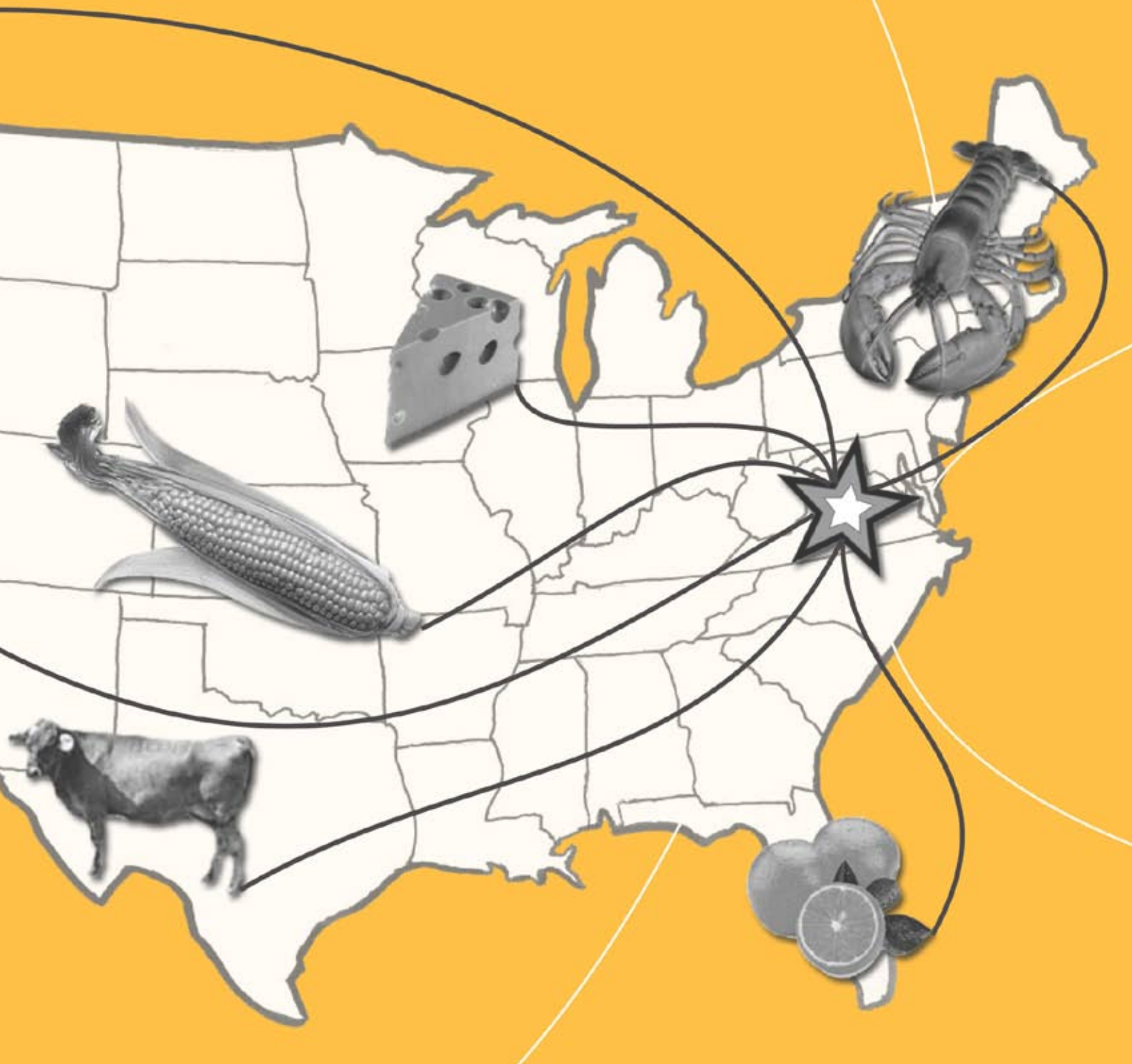
Healthy Communities, Healthy Food Systems

(Part III): Global-Local Connections

Final Student Reports

Spring 2008



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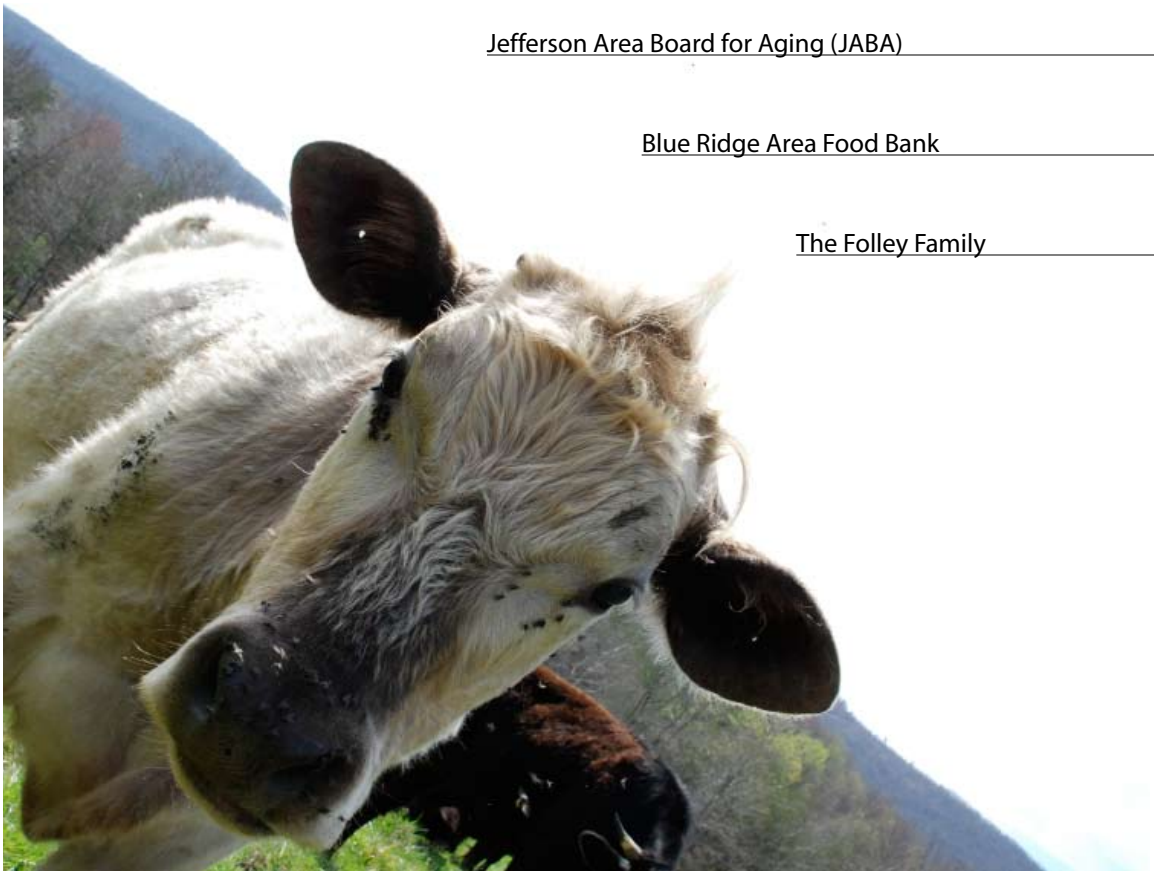


Executive Summary

What are the true costs of buying food from around the globe? How much food can we grow close to home? Is it enough to support us and can we afford it?

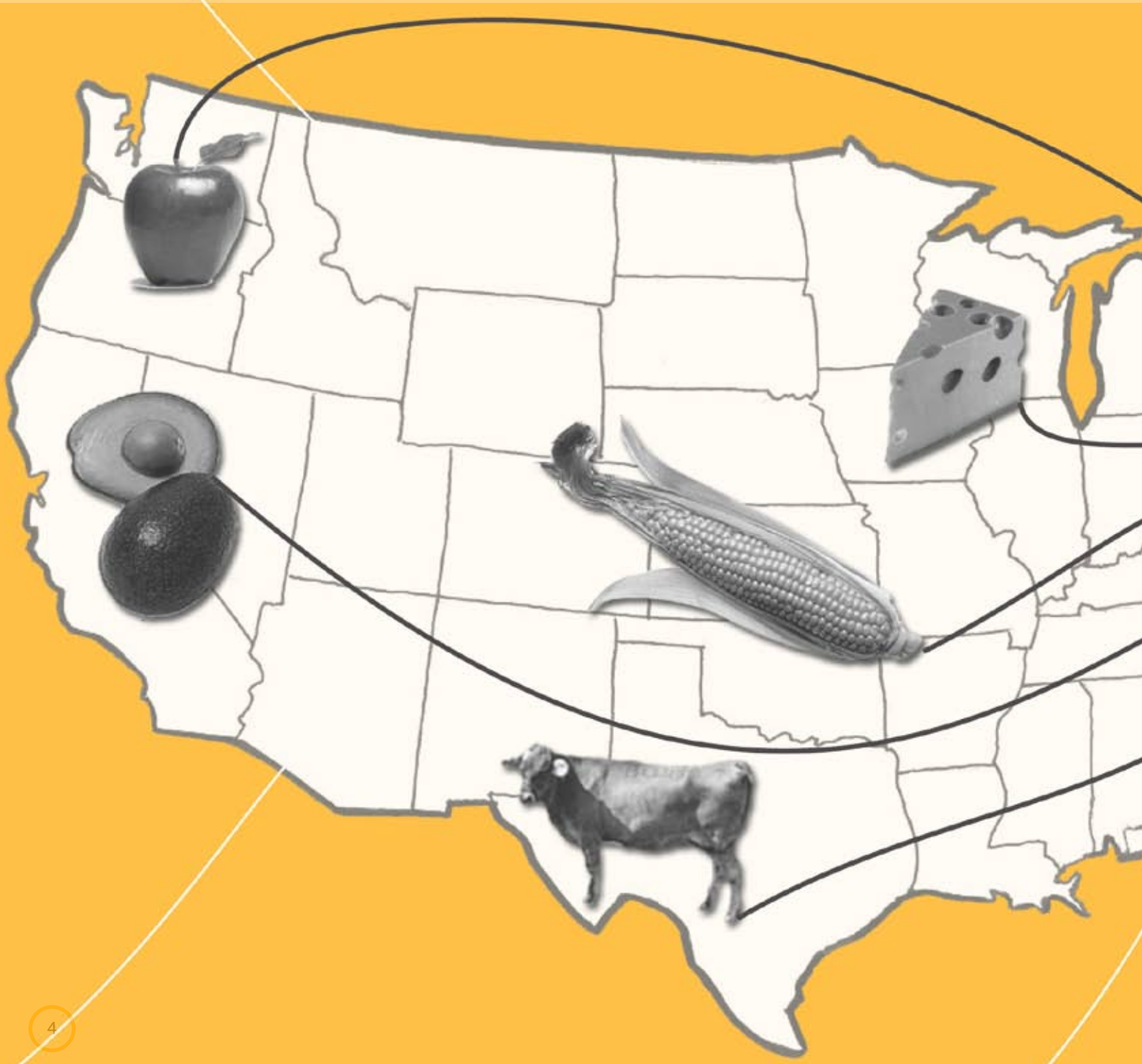
These and other questions inspired a UVA class to conduct assessments of Charlottesville's glocal (global + local) food system.

The class, consisting of both graduate and undergraduate students, is titled "Healthy Communities, Healthy Food Systems (Part III): Global-Local Connections" and is taught by Timothy Beatley, Teresa Heinz Professor of Sustainable Communities, Department of Urban and Environmental Planning, and Tanya Denckla Cobb, Senior Associate, Institute for Environmental Negotiation. Sponsored by UVa's Center for Global Health, and designed for planning students, the class has drawn students from numerous disciplines.

The UVA class assessments are the next step in a longer-term community project to foster better links between local farms and community schools and organizations, food stores, restaurants and residents. Nine class teams have analyzed food-related entities in Charlottesville: farms, families, grocery stores, restaurants and community organizations. Each group examined local and global inputs, searched for potential local sources and identified methods to improve connectivity within local or global food systems.

This document is a compilation of the results of the above-mentioned assessments and will hopefully provide a window into the strengths and weaknesses of the Charlottesville area food systems. It is imperative that such assessments be conducted in order to measure the security of the existing system, in order for future recommendations to have more clout. Research was conducted on a range of private and public sector entities, from private farms to public boards of aging, which can help provide insight on future private/public relationships.

Each report is organized similarly, including key findings of the analysis, a section describing the methods that were used to conclude findings, as well as ideas and opportunities to strengthen the sustainability of the organization's role in the overall food system. These ideas and opportunities are only some of the recommendations that could yield from a community aware of food, and further insight is always welcome.



Sowing Our Wild Oats

A Glocal Analysis of Wild Oats Farm

Nick Feucht
Nicolette Leung

Introduction

Through investigating the inputs and outputs of Susan Swale's Wild Oats Farm, we have gained a better understanding of the interaction of globalization and local food systems. After gathering information regarding the farm's operation and philosophy through a series of visits to Wild Oats Farm and the Augusta Cio-op, and interviews with Susan Swales, and Augusta Co-op employees, key findings regarding inputs, outputs, and several surprising challenges to small scale farms were discovered. Analyzing this information led to the discussion of several opportunities for change on both the local and larger scale.

Background of Wild Oats

Wild Oats farm is located 28 miles southeast of Charlottesville, just beyond the small riverside town of Scottsville. Close to the James River and in the heart of rural Fluvanna County, Wild Oats Farm consists of 110 acres of healthy pasture, 60 forested acres of mixed hardwoods and seven acres of streams and pond set aside in conservation easement. Located seven miles from the closest town, the plot does not necessarily distinguish itself from the surrounding farms by appearance alone. The stereotypical white two story farm house and red, tin roofed barn held up by an aging skeleton of cedar posts covered by a façade of weathered, rough cut locally milled planks, blends into the pastoral landscape like just another traditional farm. However, as a tour by owner and operator Susan Swales revealed, what is happening is not nearly as interesting as how it is happening.

Basic Farm Operation

Wild Oats Farm is home to a variety of domestic and wild animals. Susan raises sheep, cattle and goats, which are soon to be replaced by hogs. Although her operation is primarily devoted to raising these domesticated animals, they are not the only creatures inhabiting the farm. Guinea hens and chickens roam the farm, only adding to the already lively farm scene. These fowl do not necessarily add to the sellable wares that her farm produces. However, some of the most important animals on Wild Oats Farm do not necessarily go to market. Two dogs, both great pyranees sheepdogs protect her goat and sheep flocks. This particular breed of dog has been bred for its instinctive herding and protective qualities. These two dogs keep the animals safe from natural predators, such as hawks, coyotes and other wandering dogs. Without these guards, Susan Swales' animals would be defenseless against predators; she even goes so far as to say that she would not be able to continue her operation without the help of these dogs. The two pyranees sheepdogs can protect a flock over a fairly sizable area of land, freeing Susan from keeping watch over the otherwise defenseless sheep and goats.

As a result of her conservation efforts, Wild Oats Farm is also home to a variety of wild animals. A range of starlings, crows and other song birds nest in the trees and rafters, while fish swim in the pond, mindfully separated from her livestock operation. As in any rural environment, there is a constant presence of other animals which may seek to prey on the farm's domesticated animals. The occasional opportunistic predator may stalk the grounds—however, Susan or her two sheepdogs do their best to protect the livestock.

The largest animals on Susan's farm are the Murray Grey and Angus cattle. Susan acquired the first of her cows, Murray Greys, in 2000 from a Louisa County farmer who decided to retire from farming just as Susan was beginning her venture into the practice. While the Murray Greys make up the majority of her cattle, the breed is not locally found. Murray Greys are more prevalent in the western US, as the breed was developed in New South Wales. As a result of the breed's rarity in this region, Susan considers herself lucky to have been able to buy the herd, as they posses many qualities which make them ideal for her operation.

From our two farm visits the Murray Greys looked every bit like a happy, humanely treated, stress free, buttercup enjoying cow. Peering at the two of us through their large brown, bovine eyes, they seemed as curious of us as we of them. The Murray Grey's are various tones of silver-grey which reflect each animals lineage but also the various ages in the herd. Susan chose to breed Murray Grey cattle because they are medium in size relative to other beef cattle, reach maturity at a fairly early age, are resistant to many diseases, respond well to different climates and are genuinely very docile in nature. The smaller size and lower calf weight, make birthing calves much easier on both cow and farmer, yet their ability grow quickly lets Susan avoid certain extra costs associated with processing laws that apply to processing beef cattle over 30 months of age. Moreover, as a result of their resistance to disease, the Murray Greys rarely need medical attention. Without the need for various growth inducing hormones or chemical medical treatments, Susan's cattle reach maturity organically, the way nature intended. As a result of the natural robustness of the Murray Greys, there is little need for costly unnatural growth and health treatments which are all too common in traditional cattle farms.

In addition to the Murray Greys, Susan Swales also raises a number of Angus cattle. Acquiring a number of Angus cattle during a drought at a reduced price, Susan has expanded and improved the genetic diversity of the herd. Angus cattle are solid black and slightly taller and larger than the Murray Greys. Like the Murray Greys, Angus are resistant to harsh weather, undemanding, good natured, mature extremely early and have high yield with nicely marbled meat.

Angus cattle are much more prevalent in Virginia, which has provided Susan easy access to them. With limited help, land and resources, the Murray Grey and Angus characteristics allow Susan run a profitable hormone free, antibiotic free operation.

In addition to her cattle operation, Susan also raises St. Croix sheep. Susan acquired her sheep at two separate times—the first flock coming from Suffolk Country and the second from the Shenandoah Valley. In addition to these two acquisitions, Susan has traded sheep ewes to other farmers for animals and other farm needs. The most recent addition to the lamb flock, a young Katahdin Ram who likes to boogie, has helped to improve the disease resistance and genetic quality of the existing flock. St. Croix sheep are small animals weighing less than 10 pounds at birth and reaching a mature weight of 150 pounds. Both St. Croix and Katahdin breeds possess several traits that Susan allows the sheep to effortlessly fit into the broader framework of Wild Oats Farm. Because Susan raises the sheep solely for meat, the sheep's short, white hair requires minimal upkeep, saving Susan time otherwise spent shearing wool. The two breeds have remarkable parasite resistance, tolerate various climates, have high offspring yields, and are not picky eaters. All of these traits help result in a respectively cost and time effective operation.

Susan Swales's herd of short haired goats complete the variety of her current livestock. Susan acquired the majority of the goat flock from Chesterfield, VA, and has used three local rams to increase the size of the herd since. The goats are Susan's lowest cost animal and most productive in terms of time

to processing, input costs, and price per pound at market. The goats are not of a dairy or wool producing breed; Susan raises them solely for meat, but has made use of them as an environmentally friendly brush clearing crew. With their insatiable and wide-ranging palette, the goats have helped Susan covert brambles and areas of brush into nutrient rich pasture without using a single drop of fossil fuel or disturbing the fragile topsoil.

Although the goats are the single most efficient animal, with respect to the ratio of inputs to outputs, Susan Swales will soon replace her goat herd with a hog operation. After two separate visits to the farm and several conversations with Susan Swales, neither Nick nor Nicolette agree with her personal decision to stop her goat operation. Regardless of the productivity and the sheer delight instilled by a herd of goats, her personal feelings towards the animals prevent her from keeping them as part of her continuing line of livestock.

To accommodate for the loss of her goat herd, Susan Swales will attempt to start a hog operation within the next year. Mimicking a hog's natural habitat, Susan is housing the hogs in a pen underneath a ceiling of white and red oak trees. She has little knowledge or experience with hogs, yet she hopes to learn much from other farmers, and trial and error. Susan is fairly confident in her ability to begin her venture into hog farming. Beginning her cattle and sheep operations with limited experience, she has successfully established a productive and healthy farm; she hopes to mirror her hard work and luck with the new hog production.

The number of animals that Susan's land can sustain is directly related to the weather and amount of rainfall. Unlike cattle feedlots, which feed only imported and highly processed grains, Susan's grass finished animals rely primarily on the available fresh foliage. When rain is plentiful and timely, Wild Oats Farm is able to sustain many more animals using her multiple paddocks and rotational grazing system.

However, in years of drought, such as this past fall, when the price of local hay and grain surges, the size of Susan's herd has to shrink, less Susan or her animals will suffer. Times of drought are especially harder for Susan than other farmers since she tries to feed only grass or hay. Since most hay is a locally produced good, a drought drastically affects its price and availability. However, the price of beef, which is a much more global price, may not change at all. In fact, many farmers are not able to absorb higher feed and hay prices, forcing them to sell the animals they can not sustain, driving down the price of beef on the open market

Emerging from the fall drought of 2007, which doubled the price of hay, Susan estimates that she has 30 head of beef cattle, two dozen goats, and 40 sheep. If rain continues to be plentiful, these numbers will likely increase.

Conservation

Susan Swales commitment to conservation goes well beyond the seven acres of land she has in conservation easement. All of the waterways on Susan's land are buffered and fenced off from her animals, preventing erosion or contamination from animal byproducts.

The rest of Susan's land is either in pasture or forest, leaving no exposed soil to erode, filling waterways with silt. The effects of these two measures are illustrated in the water quality of the large pond. Unlike other bodies of water on traditional farmland, which are often muddied orange or scrum encrusted green, Susan's pond is a clear, deep blue.

However, conservation of waterways and grassland are not the only sustainable techniques that Wild Oats Farm practices. Her dedication to healthy living is also illustrated through her decision to produce grass-finished livestock. Susan's cattle, sheep, and goats, thrive on what is local and readily available--grass, lowering the carbon footprint of the meat she produces. Susan is not certified organic, because she believes the cost acquiring that label would be much greater than any benefit she would gain from the

extra money she could make from adding that label to her products. Her dedication to the quality of her product is not reliant on government certification; moreover, because of the trusting personal relationship with many of her consumers, organic certification is not a priority with respect to customer retention.

Wild Oats Farm operates hormone and antibiotic free, respecting the natural progression of life. However, Susan Swales does understand the harsh reality of farming life— she will not risk losing the entire herd over one sick animal. If an animal is ailing, it will receive proper medical treatment and will be immediately sold at market to reduce endangering the health of the rest of the herd. These instances are minimized because the animals she raises are disease resistant requiring little if any medicine, reserving the use of antibiotics.

All of Susan's animals are humanely treated, and she gladly invites any interested customer to come to the farm and observe her operation. However, these invitations are not usually accepted; as illustrated in Michael Pollan's experience with the general disconnect between the general public and the origin of food, many people do not want to know that anything they eat was ever alive.

However, her conservation efforts with respect to the production of meat and the health of her farm is not a major draw for consumers. When asked if being a conservationist farmer attracts customers, Susan replied that "people really don't care about that so much-- they are more interested in the quality of the meat and perhaps if it is better than the alternative." Her response prompted the question of whether or not the We then asked why she did what she did in relation to her environmental practices? Susan responded "It is the right thing to do and it reflects the true cost of food." Susan's sense of stewardship towards her land in its entirety, profitable and unprofitable parts, shows a connection to the land which the agricultural community must promote.

After several interviews with Susan Swales and trips to the farm, one of the key findings was the prominence of the largely non-cash economy amongst farmers. Unlike other fields, based on buying and selling goods for money, the agricultural market relies heavily on the barter system. Exchanging animals for other animals, feed for pasture space, or sharing large farm equipment is not a rare occurrence. Many farmers, including Susan Swales, rely on these bartering opportunities in order to continue operation.

Farmers are often cash poor, but resource rich. The bartering system allows farms to stay in business, trading surplus resources for needed resources, without depending on cash.

Key Findings

Analysis also offered insight regarding the inputs and outputs of Wild Oats Farm. However, due changes in weather patterns, oil prices, the market, and countless other factors, sources and destinations of inputs and outputs are subject to change. Before research into Susan's farming operation, it was assumed that Wild Oats Farm would serve as a model of the local food system. An organic, conservationist farm serving grass-finished meat products to local areas seems like an ideal candidate for the local food movement. However, after further research, Wild Oats Farm is simply not as local as many would assume.

The scope of research delved as far as direct inputs. In order to gain an accurate portrayal of the sources of products and resources used by the farm, inputs need not be traced far beyond those that directly impact the daily goings-on of the farm. These inputs included feed, fencing, posts, and the animals themselves. As illustrated by the map showing just some of the sources for these inputs, Wild Oats Farm is much more connected to the global economy than initially anticipated. In keeping with initial assumptions regarding stronger local connections, livestock is attained locally, minimizing costs in shipping while remaining fairly convenient. Most of the animals on the farm hail from neighboring counties or states. While many of the products used on the farm are purchased by Susan Swales from a local farm supply co-

op, The Augusta Co-op, many are produced from much more distant locations. While the Co-op attempts to source most of its materials domestically, such as drinking troughs and cattle gates, many products are produced outside the United States. For instance, the high tensile fencing that Susan uses throughout her farm is produced in Mexico, nearly 3000 miles away from Scottsville. Although the Wild Oats Farm may seem local, necessary inputs tie it to the global economy.

Outputs proved to be far more local than the farm's associated inputs. Because of Susan Swales' smaller scale operation, which processes only a few animals at a time, outputs are on a much more local level. In order to process her animals, Susan Swales takes them to one of two processing factories. Both these locations are within 100 miles of her farm, the furthest boundary regarding the farm's outputs. The processed meat is then sold through her own farm or several neighboring farmer's markets, including Charlottesville and Scottsville. At times in which processing the animals is not a viable option, as was the case for much of the fall of 2007, Susan sells livestock at a number of local live markets in neighboring counties. Please note maps of inputs and outputs in the appendix.

Challenges

The success of Wild Oats Farm relies on several different factors. Through the past seven years of the farm's operation, it has faced several challenges. While Susan has worked through these obstacles, these barriers often block other prospective farmers from continuing in her footsteps to create a supply for sustainable, healthy products.

Labor serves as the biggest concern for Wild Oats Farm. Within the past seven years, Susan Swales has hired at least 20 different workers. Although she pays nearly three times minimum wage for the state of Virginia, money alone is not enough for many to compensate for the back-breaking labor involved in the maintenance and upkeep of a working farm. Reliable and experience labor is difficult to find, as illustrated by the high turnover rate of employment. Oftentimes, hired help quits after Susan has spent time and energy training employees about the inner workings of the farm. Insufficient labor may often result in poor production, and the eventual downsizing of the already small scale farm.

The rising price of oil also greatly affects the workings of the farm. So much of the farm's processes rely on oil that steadily increasing prices are immediately felt. Much of the integral farm equipment relies fuel, including trucks for transportation, as well as the tractor, which is used for general farm purposes. Increasing gasoline prices greatly increases the cost of transporting animals for processing, oftentimes to a point where it becomes more economically viable to sell animals are livestock markets. The price of oil permeates through every possible aspect of the farm, even the plastic that the finished meat product is processed in. Rising fuel prices only serve to further inhibit growth of struggling small farms.

However, one of the most easily remedied problems facing many small farms is a lack of customer knowledge. Consumers remain largely unaware of the benefits of sustainable farming practices, like that of Susan Swales' Wild Oats Farm. The health benefits alone of grass-finished meat may result in increased consumer interest, especially with respect to the health-obsessed public. Likewise, many potential customers do not understand the environmental benefits of farms like Wild Oats in comparison to the more traditional industrial farm. Most importantly, many consumers remain unaware of the continual supply of meat that Wild Oats Farm has to offer. Unlike produce farmers, who stop production at the end of the growing season, Susan Swales' meat operation continues through the fall and winter. During the summer months,

when she sells to farmer's markets on a regular basis, Susan sells nearly all of the farm's product at a value sufficient to sustain production. However, when the growing season halts, so do weekly or even bi-weekly farmer's markets. Otherwise loyal customers refuse to drive to Wild Oats Farm, to purchase meat. Instead, these consumers opt to buy their meat elsewhere. Without the context of a farmer's market, Susan Swales' meat products remain undesirable or inconvenient for the average consumer.

Another challenge which plagues many local food systems is the inability to reach a varied and diverse audience. Local, organic food may seem phony, even elitist. The luxury of owning a share of Community Supported Agriculture for a weekly box full of unusual produce or paying $2.99 for a pound of ground beef sold at Kroger for $0.99, sets the local movement outside the reach of the everyday citizen. Susan Swales admits that her products are accessible to only a select few. Those who choose to pay more for the health benefits, improved taste or guiltless meat will do so—mostly because they have enough money to afford such a luxury. These qualities are not a top priority for many, especially those in a lower socio-economic class. The high prices of the meat produced at Wild Oats Farm would be difficult to follow over a short period of time because prices are subject to change slightly based on weather conditions, market price of livestock and rising oil prices, as previously mentioned. However, it may be inferred that most of the consumers buying the Wild Oats product hail from the upper socio-economic bracket.

Policy also plays a role in reducing the success of smaller scale farms. Organic certification is costly and time consuming, preventing farmers who practice organic methods, such as Susan Swales, from becoming certified. Moreover, certain policies inhibit the effectiveness and methods for processing. The Food and Drug Administration (FDA) is famous for attempting to protect the health of the American citizens through regulations on food products. However, these policies often work against smaller farms. For instance, established policy prevents the slaughter of cattle over the age of 30 months without an expensive check for mad cow disease. Although this process may have been established for public safety, it forces farmers like Susan Swales to prematurely take animals to the slaughterhouse, before they meet ideal weigh conditions.

The last and most daunting challenge for many new farmers is the cost of land. Although Susan did not come across this problem when she acquired land for Wild Oats Farm, she voiced her concern for

land prices inhibiting prospective farmers. Many new farmers are unable to afford the vast tracts of land necessary to establish a working farm. Without new farmers eager to take the place of retiring farmers, farmland will be lost to financially lucrative development.

Opportunities for Change

Within each challenge or obstacle lies an opportunity for change. Many of these solutions may be implemented at a local scale, while some problems require a larger scope.

With respect to addressing the problem of reconciling production supply and consumer demand, a regional database may be established. This resource may resemble an agriculturally focused Craig's List. Offering an established market for bartering animals, equipment and other supplies may help to ease transactions in the heavily non-cash economy. Moreover, the database may be used to establish links between employers and laborers, as well as producers and distributors. A local restaurant may desire a farmer's excess supply; however, these connections may never be known without an established forum.

In order to address consumer knowledge, a local campaign may be necessary. In Charlottesville, groups such as E.A.T. Local work to help educate the general public regarding the benefits of eating healthfully and locally. Through the use of directories detailing local farmer's markets and farms, the group may raise awareness regarding the existence of the local option, as opposed to the traditional grocery store and industrial farm. Moreover, local organizations may work together to establish equity with respect to healthy, local food distribution amongst a variety of socio-economic classes.

On a larger scale, policy and energy alternatives must be addressed. Reliance on foreign oil, a non-renewable fossil fuel, affects sectors beyond agriculture. The pressing need for alternative fuel sources may not be addressed on a local level, requiring larger actions by the government. Likewise, policy regarding food production and processing should be addressed at the national scale. Independent farmers, like Joel Salatin, have changed farming policies, attempting to relieve stress on smaller farm operations. Changes in policies, such as tax breaks for small farmers, or easing the organic certification process without relaxing standards, will only help to benefit small, independent farms.

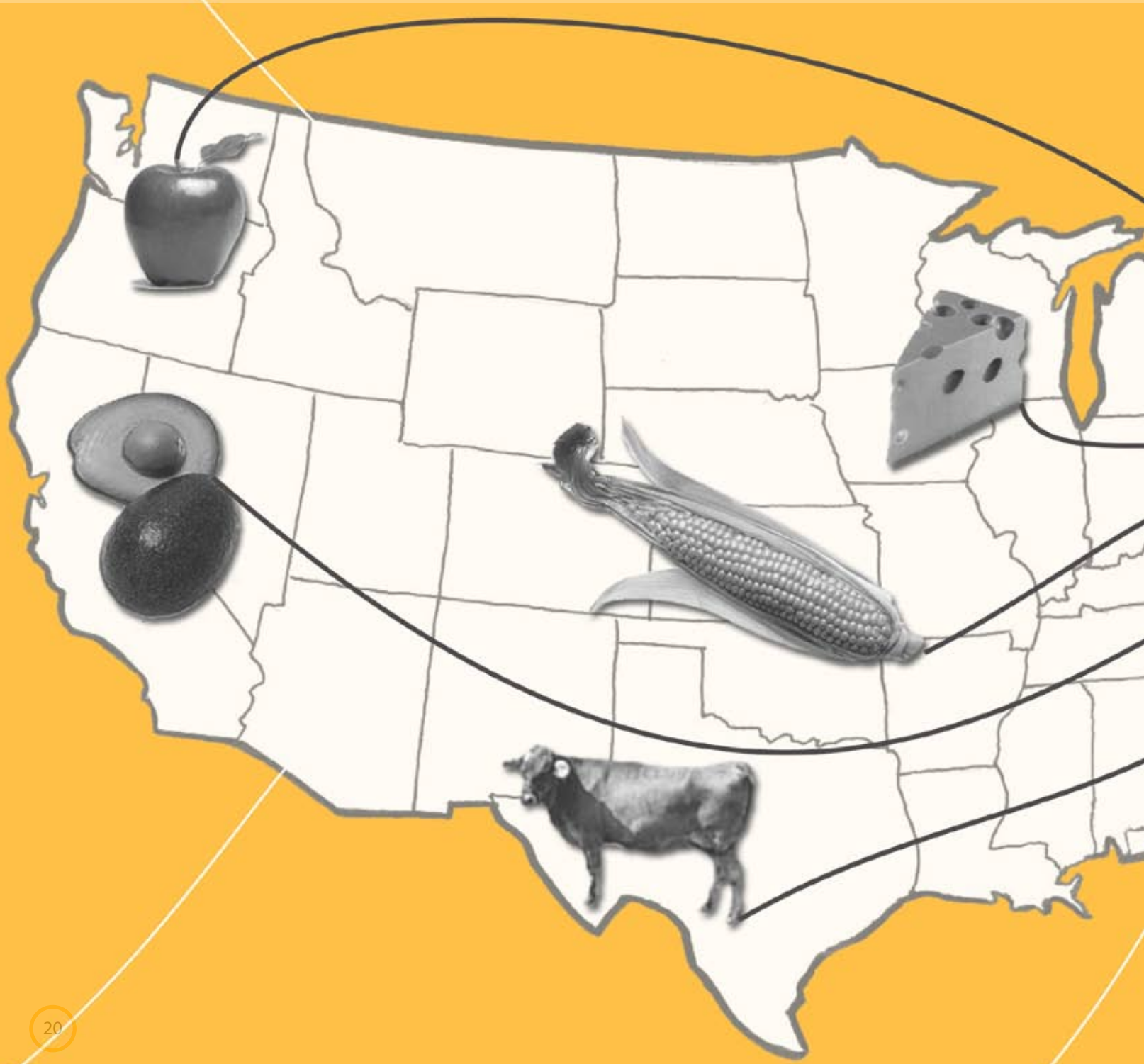
Conclusions

Through research into Susan Swales' Wild Oats Farm, the definition of glocal and all its implications became immediately clear. While the small scale farm seemed entirely local, its ties to the global economy could not be ignored. The desire for a completely self-sustaining local food system is desirable to many; however, in the contemporary globally connected world, this is nearly impossible. A balance between local entities and its respective global ties work to provide a healthy system that most closely resembles the completely idealistic self-sustaining system.

Appendices

Appendix 1: Input Map

Appendix 2: Output Map



Roundabout Farm

A Glocal Input Analysis

Jenny Jackson
Elaine Quick

Project Subject and Goals

This project seeks to trace the origin and path of inputs to the soil on a local farm, Roundabout Farm.

Our goal is to understand where the inputs are coming from in the production part of the food system by illuminating possibilities and factors that result in the current decisions made at Roundabout Farm. We also sought to explore the outputs of Roundabout Farm- what clients and relationships a small farm has in the greater Charlottesville community and how that is displayed. We conducted this investigation to gain a better understanding of what challenges a small farm faces and what factors are considered in sourcing and distributing locally.

Methodology

We visited the farm and conducted an informal interview/discussion about Roundabout Farm operations, intentions and obstacles with Megan and Eloise Weary. We also corresponded electronically with follow-up questions.

Defining a unit of measurement and the extent of the investigation proved to be the first challenge.

We decided upon one year of inputs for the year 2007 as the unit of measurement. The Wearys kept detailed records of all purchases and expenses towards farm production which they shared with us. Their organization made this rather large scale of inventory manageable. Using a full year's worth of inventory allowed us to track the input needs of the farm for a full growing season including all stages of preparation, growing and management. The scope of this project did not allow for investigation of all of the necessary inputs to make the entire farming operation run smoothly.

The Wearys kept two lists: one of non-depreciable, or consumable, goods and expenses (seeds, fuel, fertilizers, etc) and one of depreciable goods (tractor, plow, rototiller, etc). We focused on non-depreciable goods and decided on inputs into the soil as the defining characteristic to determine the scope of the investigation. This excluded items such as tools, tarp, fencing, hoses, etc that are nonetheless essential to the farm operation and left us with just over 250 vegetable, fruit and flower seed and plant varieties, natural fertilizers and pest control products as the subjects of our investigation.

The Weary's lists included the immediate sources of their purchases and details about each product (i.e. seed variety). Sources included larger seed distributors, local farmers, independent farms and other seed/farming retailers. See below for a list of sources. From these options, we selected a sampling of seed varieties from each of the immediate seed sources and other basic inputs to track.

We searched the internet for company websites and made phone calls when possible to investigate the points of origin. We generally asked questions such as these, depending on the item under question:

Do you produce X seed/product and/or distribute it?

If you distribute seeds, what is your source for X seed? Domestic/International? State,Town? Company/Farmer?

Can you give me contact information for your source?

Where are the seeds processed, packaged and distributed from?

Some companies contacted were the producer and distributor of seeds. For those who were distributors,

we asked for their source of the product.

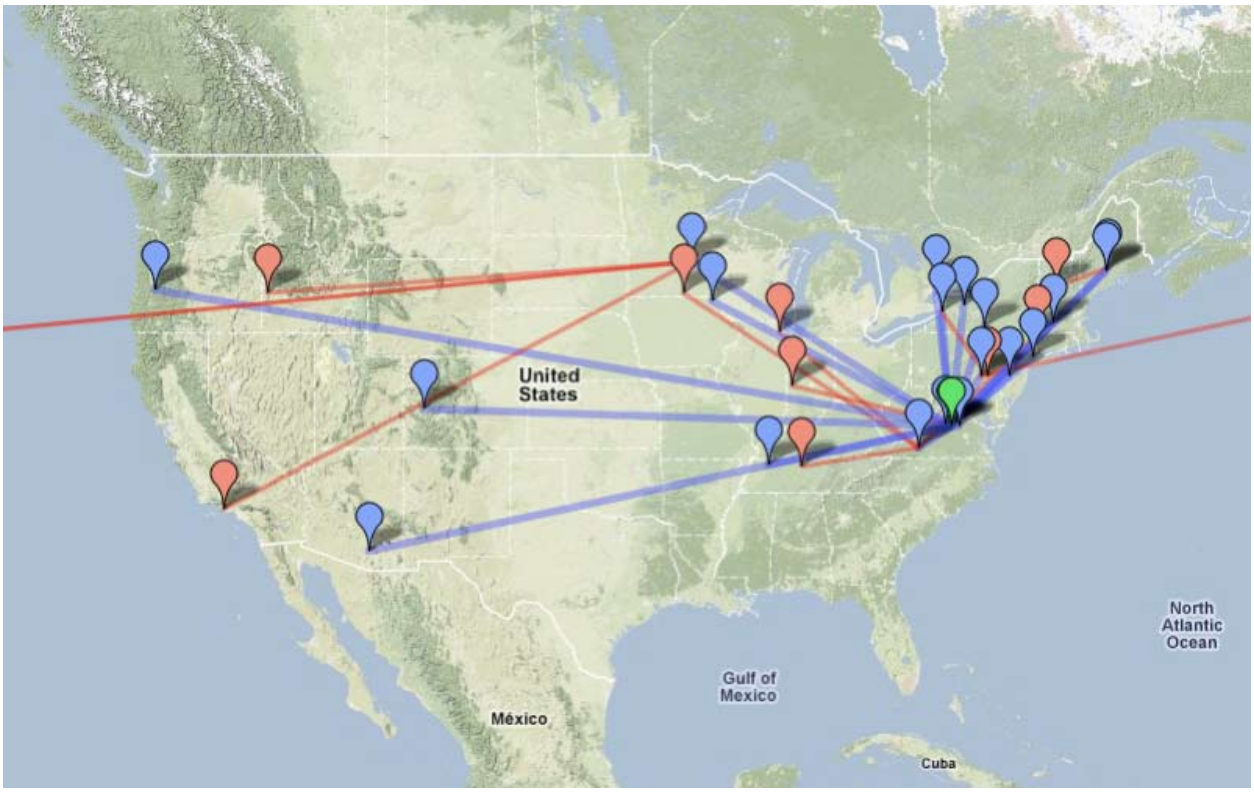
We used the smallest possible level of location data (country, state or town) to create a map on Google Maps as a visual display the path of sampled seeds and other inputs. Rough calculations were made using a Google Maps function to measure the distance between each source and Roundabout Farm. Investigated inputs include broccoli, strawberries, sweet potatoes, herbs, tomatoes, corn, turnips, cauliflower, cabbage, watermelon, potato, snap pea, kale, winter squash, summer squash, muskmelon, leeks, lettuce, cucumber, tomatilo, zinnia, sweet pea, fertilizer, lime, winter rye, potting soil, compost, horse manure, insecticidal soap, and ladybugs.

Sources investigated include Johnny's Selected Seeds, Nourse Farms, Southern Exposure Seed Exchange, Steele Plant Co., Richter's Herbs, Burpee, Jordan Seeds., Seedway, FEDCO, treehelp.com, Arbico Organics, Harris Seeds, Belcort Farm, Fraziers, Seven Springs Farm, Gloeckner & Co., Milk Ranch Specialty Potatoes, Siren Farms, Territorial Seed Company, and Seed Saver Exchange, as well as any sources further detail by these primary suppliers.

Glocal Mapping

This is the map we created to display the points of origin and distance traveled by each input. The base map shows the terrain with political boundary lines.

The small map shows the entire world and the few seeds that we could trace with enough transparency to move to international supplies. The larger map shows the continental United States with the sources identified. Most of the activity occurs within the United States, according to the information that we were able to acquire.



The green balloon represents Roundabout Farm. The blue balloons represent the direct source of the inputs. The orange balloons represent a supplier or the direct source. The blue lines measure the distance traveled between Roundabout Farm and the direct source. The orange lines measure the distance between a supplier and the direct source.

The map is also interactive on the internet. Search for "Roundabout Farm Inputs" in a Google Maps search. Click on the green link "Roundabout Farm Inputs" under what should be the first result. When clicked on, the balloons display the name of the company/source and the town/state/country and sometimes the name of the input under investigation.

Findings, Insights, and Lessons for the Food System

Findings of our investigation were compiled into a table (see Appendix I). The table includes the name of the product investigated, the name of the company, location details as available, and an estimated distance of miles traveled.

The shortest distance traveled was only one mile by horse manure from Belcort Farms in Keswick, Virginia. The longest distance traveled was 7030 miles by Savoy Ace Cabbage AAS seed from Takii Seeds in Kyoto, Japan via Jordan Seed Company in Woodbury, Minnesota.

Some of the information we have is incomplete because many companies, especially the larger distributors, would not share their source information beyond a determination of domestic or international. Therefore, the distances traveled do not reflect the entire path of the inputs, merely the portion of the path that we were able to trace.

We also have some interesting observations and discoveries uncovered during our research that is indirectly related to input distance and choice-making. Small, independent, and family-run operations were generally more open about their sources and methods. For instance, the Nourse Farms was willing to discuss the different varieties of berries, the processes and growing methods they used and other aspects of the business. On the other hand, Johnny's Selected Seeds only disclosed a categorization of domestic or international for the seed varieties under question.

Some seed distributors shared their source information, linking to a second stage of processing. Even these secondary suppliers and some of Roundabout's direct sources only had vague information about the source of a seed because multiple intervening steps with aggregation, coops, shipping, and processing blurred the precise path of a seed. The only seed varieties and inputs that were traceable to their point of production were cultivated by the direct suppliers of Roundabout such as Belcort Farm, Milk Ranch Specialty Potatoes, Nourse Farms, Siren Farms, and Steele Plant Company. Seeds coming from distributors were untraceable to their farm of origin.

At Jordan Seed Company, the phone contact knew the supplier of each seed variety off the top of his head. Upon further investigation, some of these sources were not towns or farms but large seed

companies. It also appeared that many formerly independent and smaller suppliers were recently acquired or affiliated with larger companies or organizations. Seedway, LLC, experienced 6 mergers and acquisitions (including Burpee, another one of Roundabout's suppliers) since 1990 and is currently a subsidiary of GROWMARK, INC, a federated cooperative network (http://www.seedway.com/ and http://www.growmark.com/).

This detailed source information was time-consuming to acquire and not always easy. Even this level of investigation is not thorough and complete. Some companies were not prepared to share information, some phone answerers did not know. One company, Burpee, only printed the source on the seed packaging. This was a different approach, ensuring that the farmer had easy access to the information but not having the information readily available for consideration when purchasing or planning. Seed magazines and online sites (seed distributors) did not list the point of origin in the product description.

Nourse Farms' website lists more berry varieties than we realized were available. Some of the varieties were listed with a patent number or patent pending number. The varieties are labeled as such to help explain the higher price for those varieties. The farm must pay extra to grow and provide those plant varieties because they have to purchase production rights from patent holders of these varieties- other companies, organizations or individuals.

Roundabout Farm has a number of outlets for its produce and flowers. The CSA program is entering its second season. Produce is also sold directly to consumers at an on-farm stand and at the Charlottesville City Farmer's Market. Roundabout further supplies a number of local restaurants and food retailers with fresh produce and flowers: feast!, Hedge, Whole Foods, Revolutionary Soup, L'etoile, Harvest Moon Catering, Blue Moon Diner, Maya, Orzo, Mas, and other caterers. Roundabout has expanded its production period past the regular growing season through hot houses. This creates a supply of fresh produce such as tomatoes to local restaurants and retailers, even when they are out of season to meet the year-round demand for certain produce.

Not all of the restaurants publicize or label their local food sources. Some publicize specific farm names, others, "locally sourced," or nothing at all. An unsteady supply of a certain item from the same source may prevent a restaurant from labeling their ingredients because patrons might expect that item to always be sourced from that farm.

Roundabout Farm Profile



Roundabout Farm is a 76-acre farm started four years ago by Megan and Rob Weary in Keswick, Virginia a few miles east of Charlottesville in the Blue Ridge Mountains. Megan and Rob moved decided to move to the Charlottesville area and start farming sustainably after a few years of living and working in northern Virginia. Their commitment to sustainable living and healthy food inspired them to start a farm, and later a CSA* operation, contributing directly to the strength of a local food system. The Wearys are "committed to providing their community with healthy food from healthy land."

The farm grows produce and cut flowers using sustainable and environmentally friendly growing practices including biodynamic principles. Biodynamics "is a holistic system of organic agriculture" first described by Rudolf Steiner with a goal of "work[ing] in conjunction with nature to create healthy soils and foods of the highest nutritional value." Produce and flowers are sold through the CSA, an on-farm stand, the Charlottesville City Farmers' Market, and to restaurants, grocery stores and florists in Charlottesville.

The Wearys' commitment to sustainable living is further evidenced by the recent construction of their barn with storage, processing, office and living space using green building practices. They are further nurturing the local food system with four apprenticeships for the 2008 growing season and the beginning of student CSA shares, both of which allow younger people to become knowledgeable, involved and invested in local, sustainable agriculture.

*Community Supported Agriculture (CSA)

CSA is a partnership of mutual commitment between a farm and a community of supporters which provides a direct link between the production and consumption of food. Supporters cover a farm's yearly operating budget by purchasing a share of the season's harvest. CSA members make a commitment to support the farm throughout the season, and assume the costs, risks and bounty of growing food along with the farmer or grower. Members help pay for seeds, fertilizer, water, equipment maintenance, labor, etc. In return, the farm provides, to the best of its ability, a healthy supply of seasonal fresh produce throughout the growing season. Be-

coming a member creates a responsible relationship between people and the food they eat, the land on which it is grown and those who grow it.

This mutually supportive relationship between local farmers, growers and community members helps create an economically stable farm operation in which members are assured the highest quality produce, often at below retail prices. In return, farmers and growers are guaranteed a reliable market for a diverse selection of crops. (from: www.umassvegatable.org)

Challenges Facing the Food System

The major challenges facing the production part of the food system center on availability, cost, and feasibility. There is not a lack of desire to source more locally and sustainably. Rather, local sourcing options are absent, expensive, or logistically difficult to employ, especially in seeds. For instance, Megan told us about her search for fertilizer. She found two options: a far-away source that delivered affordably to her door and a regional source that could only drop off the product at an undermined location at the Virginia state line. The first is what she chose as a regular source because the second would have been a logistical headache requiring an unknown number of driving hours (4-10 hours, roundtrip) in hired transport vehicle. A clincher was the cost: with a commitment to high quality fertilizer, the second source ran at the same price as the first source for fertilizer, not including the extra expenses and time necessary to retrieve the product from the state line.

There are simply few seed and input sources in the area. There may be a lack of communication between local and regional farmers, especially regarding farm supply information. One farmer may need potato seed but not know that another nearby farmer is selling potato seed in addition to selling potatoes in the retail market, instead sourcing from far away. Furthermore, information about inputs is hard to acquire from current sources. Our own investigation of origin was difficult and is not imaginably more transparent to farmers.

Ideas and Opportunities for Change

The Wearys conducted a lot of personal research into all of their input options. They strive to use the best practices and inputs possible while balancing financial and practical needs. There are more opportunities for change in the system than in the practices and decisions at Roundabout Farm.

There is room for increased promotion of local farm sources for restaurants, even if the supply is intermittent. Specific farm names can be detailed or featured on menus and in other literature (such as websites) with a note that it is not a supplier 100% of the time. Such publicity could benefit the farms and strengthen restaurant patrons' ties to the farmers as well as reinforcing the farmer-restaurant relationship.

One possible support for suppliers in the local food system is an internet forum for connecting local farmers to local suppliers and buyers, particularly local restaurants and food retailers. A forum for farmers and clients could promote communication and sharing of knowledge and resources. This could be communication between farms, and between farms and food establishments or individuals. An internet forum similar to Craig's List, as opposed or in addition to a physical place, but for farmers, producers, suppliers, and consumers (less on an individual or household scale) might allow more parties to be involved with real-time updates. A central digital location for information, knowledge and surplus would act as a bulletin board where all of the information and interested parties will be available.

Laws and regulations regarding transparency could enforce more strict rules about disclosure. Ideally, the point of origin and the entire path of a single input will be readily available with all of the information about history and cultivation connected to the seed variety or product. Such public information would allow farmers to have more influence through their choices on what is available, perhaps inform growing choices (as seeds are often cultivated in the climate and environment most appropriate to growth), and provide more knowledge about the integrity of the seed or product. Through these details, farmers and other players in the food system would become more connected as they learned from where and whom each product comes.

Conclusions

Tracing the glocal inputs to Roundabout Farm provided a variety of insights into the supply system and decisions facing small farms such as Roundabout. The sources of inputs came from a variety of sources from all over the world and from all different types of businesses. Some of the suppliers were producers, while some were predominantly distributors and some were a mixture of both. Transparency was not always available when trying to determine the ultimate source of some of the inputs into the soil at Roundabout Farm. This was particularly true when attempting to get this information from large distributor type suppliers.

In the quest to produce healthy food and be stewards of the land, Roundabout faces many tough decisions. As discussed, they would like to source more inputs locally, but often the inputs they need are not available or not feasible from local suppliers. The opportunity for better connectivity in the local community appeared to be a common theme that emerged from the glocal analysis of Roundabout as well as the other local entities that were analyzed in this project. The ability to connect local producers, suppliers, and community members would allow local entities to make more informed decisions about their glocal sourcing of materials, create stronger community bonds, and ultimately improve and strengthen the local food system.

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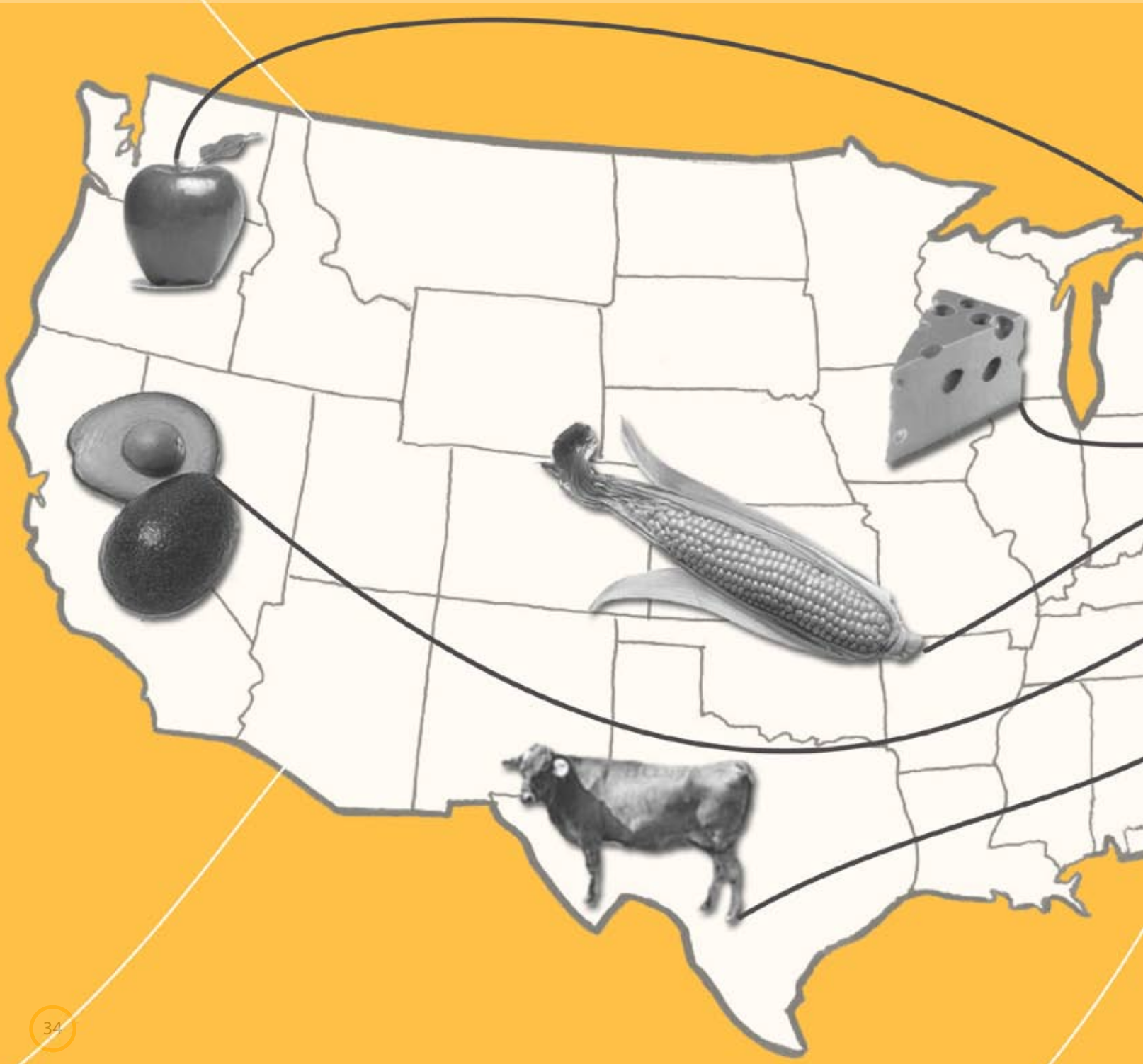
Map by Elaine Quick using Google Maps.
Photos by Jenny Jackson and courtesy of www.roundaboutfarm.net.

Appendix I:

Investigated Products and Seed Samples

Source: Farm/Distributor	*Product*	*Details: Seed Variety etc*	*Location*	*Distance Traveled (in Miles)*
Seven Springs Farm	Cover Crop Seed, Fertilizer, Potting Soil, Lime		Check,VA	120
		Lime	Franklin Industrial Minerals, Nashville, TN.	372
		Potting Soil	McEnroe Organic Farm: Millerton, NY	492
		Fertilizer	Maxicrop USA, inc., Elk Grove Village, IL	540
		Cover Crop Seed	Winter rye from Albert Lea, MN	830
Gloeckner	Flower Plugs, Flower Seeds		Harrison, NY (sourcing both domestically and internationally)	320
		Larkspur (dark blue)	domestic	
		Zinnia (purple)	domestic	
		Sweet Pea (Mammoth Mix)	domestic	
Milk Ranch Specialty Potatoes	Potatoes		Austin, CO (grown there)	1600
		Fingerling Potato (french)		
		Potato (caribe, carola, all blue)		
Siren Farms	Seed Garlic		Spencer, NY (grown there)	307
Territorial Seed Company	Seeds		Cottage Grove, OR	2343
Johnny's Selected Seeds	Seeds, Organic Pesticide		Winslow, Maine (sourcing both domestically and internationally)	640
		Snap Pea (super sugar snap)		
		Kale (winterbor)		
		Winter Squash (waltham winter)		
		Broccoli (gypsy)		
Southern Exposure Seed Exchange	Seeds		Mineral, VA: produce 40% of seed on site. Other 60% from carefully monitored outside growers	24
		summer squash (golden bush scallop)	Grown on site	
		muskmelon (golden	Rockville, IL	516

Seed Saver Exchange	Seeds		Decorah, Iowa: seeds saved on Heritage Farm- over 24,000 varieties on 10 year rotation -all seeds listed grown on-farm	794
		Leek (giant musselburgh)		
		Lettuce (tennis ball)		
		Cucumber (a & c pickling)		
		Tomatillo (green husk)		
Burpee	Seeds		Warminster, Pennsylvania: source domestically and internaitonally; non-GMO; store, sort, package and distribution on site; origin only printed on seed packet	231
		Plum Tomato (Health Kick)		
		Sweet Red Corn (Ruby Queen)		
		Cherry Tomato (Super Sweet 100)		
Jordan Seeds	Seeds			893
		Corn (Ambrosia)	Crookham Company: Caldwell, Idaho	1175
		Cauliflower (Candid Charm)	Sakata Seed Company: Yokohama, Japan	5992
		Cabbage (Savoy Ace AAS)	Takii Seed Company: Kyoto, Japan	6137
		Watermelon (Yellow Doll)	Seminis, Inc.: Oxnard, California	1573
Harris Seeds	Seeds		Distributor: Rochester, New York	356
		Sunflower (Pro Cut Orange)		
		Kniphofia (Flamenco)		
		Rudbeckia (Irish Spring)		
Steele Plant Company	Potatoes		Gleason, Tennessee: produced on-site	580
SeedWay	Seeds		Elizabethtown, Pennsylvania	175
		Broccoli (Belstar)	Bejo (breeding, production, processing): Warmenhuizen, Netherlands	3775
FEDCO	Seed		Clinton, Maine	645
		Gilfeather® Turnip	Vermont	155
Richter's Herbs	Herb Seed		Goodwood, Ontario, Canada	419
		English Mint		
		Kaliteri Oregano		
Nourse Farms	Plants	Strawberries: Early Glow and Jewel	Whatley, Massachussetts; grown on-farm	430
David and Dana Frazier	Compost		Crozet, Virginia	20
Belcort Farm	Horse Manure		Keswick, Virginia	1
Treehelp.com	Insecticidal Soap		Distributor: Buffalo, New York	338



feast!

Glocal Analysis of a High-Quality Food Market

Fania Gordon
Meg Johnstone

Introduction

What is feast?

Feast is an owner-operated grocery, café, catering service and cheese and charcuterie shop specializing in high quality foods. The store has an extensive prepared foods section that includes many feast brand products.

Kate Collier came from a family in the food business. After cooking her way through UVa and managing a specialty foods store on Charlottesville's downtown mall, Kate moved to Berkley California and began working on a one-acre organic garden where she learned about farming practices. Eventually, she was promoted to sales manager and buyer and in this way learned the skills to run a business. Additionally, it became evident to Kate that strong networks and personal connections are necessary for small farms or any small business to be successful.

Eventually, Kate left the farm and began learning about cheeses and the cheese market. After moving back to Virginia Kate began working for Cheeseworks, a gourmet cheese distributor, eventually helping to expand their operations to the West Coast. Despite her love of cheese and respect for Cheeseworks, Kate knew she wanted to start her own business. For 11 months, she planned and fine-tuned the idea for her store, all with no physical store space. Her big idea was to sell artisanal food and gifts while featuring local products. Most importantly, every-

thing had to be delicious; there was always a focus on flavor. Accomplishing this goal required a lot of legwork on her part. In October 2001, Kate put an ad in the local Charlottesville paper reaching out to community members and food producers who would be interested in selling their craft and food products in the store. She found local farmers and food producers by using the Virginia Department of Agriculture and Consumer Services website, driving around to farms and stopping at roadside stands to speak with people about her ideas.

Finally, on February 13, 2002 Kate Collier, Suzannah Kerr and Eric Gertner opened the store in a very small space on Main Street. The focus of feast was on cheeses, meats and olive oils and local, artisan products. In the beginning, feast operated with consignment space for local farmers to sell their produce. Logistically, this caused problems so after about a year Kate began purchasing the produce outright and selling it in her store. It took awhile to figure out how much of each product to order to make it worthwhile for farmers and craftspeople to drive to town for deliveries.

Since its opening, the store has expanded to employ twelve people full time. From the beginning, feast's mission statement has emphasized enhancing connections with local farmers, artisan food producers and consumers. Kate personally sources local and seasonal foods to help sustain the viability of farmland and family-owned food businesses in addition to the foods that she purchases from distributors.

Where does feast fit into the glocal food system?

Feast tries to keep as much money as possible local while still providing the gourmet and international options its customers care about. Primarily, feast carries products for their flavor. The international items that the store sells are exceptionally high quality and come from producers whose practices reinforce Kate's ethic. To achieve the artisan, gourmet vision, which is the mission of feast, it would be problematic for feast to only source locally. A wine connoisseur would argue that wine made in Albemarle County is not a substitute for wine made in the Loire Valley. Similarly, a cheese monger knows the difference between an English Cheddar and one produced in the United States. Furthermore, due to the climatic conditions in Virginia, most produce is only available locally on a seasonal basis. In order to offer the variety of fruits and vegetables that people are used to finding at large scale grocery stores, and expect to find at any market,

feast must get some of its produce from Cavalier Produce. Cavalier Produce is a locally owned and operated produce distributor based out of Charlottesville. While some of their produce is sourced locally, the vast majority of it comes from growers in California.

To support the local economy Kate tries to purchase paper goods and other non-food items from local distributors as opposed to national corporations. She finds these distributors by going to Virginia trade shows and by doing internet searches. The slightly higher cost that Kate pays in order to purchase local dry goods is a way of internalizing the environmental costs and externalities that would result from purchasing from a national distributor and having items shipped across the country.

The specialty-imported products Kate purchases are mostly from smaller independently owned businesses. For instance, the Armenian Harvest Song Artisanal Preserves from the Ararat Valley are produced using environmentally friendly growing, harvesting and packaging techniques. To analyze the patterns that emerge from Kate's unique selection criteria we mapped the foods feast carries.

Methodology

Master Product List

In order to gain a better understanding of the local and global scale of the products that feast sells we analyzed the master products list by place of origin and distributor location. We obtained a copy of the master product lists for wine and beer, cheese and olives, and local produce that Kate asked us to destroy when

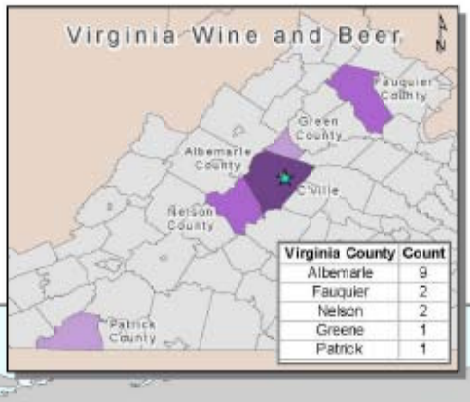
our research was complete so as not to give any resources to feast's competing businesses. We chose these categories for their significance at feast and within the local food system. Wine and beer production is a growing industry in the Charlottesville and Albemarle area. Cheeses and olives are important departments and some of the first things to be sold at feast. The cheese counter has been heralded as one of the best on the east coast. From the start, feast has supported local farmers and artisan food makers. These three categories represent a wide cross section of the products sold at feast. Additionally, within these categories we were able to access comprehensive product lists for our analysis. The master product lists and consequently our maps include any product sold at feast at any time in the past. Therefore, not every product is in stock at all times. This allows for a complete list of products sold at feast throughout the year, not just in one particular season.

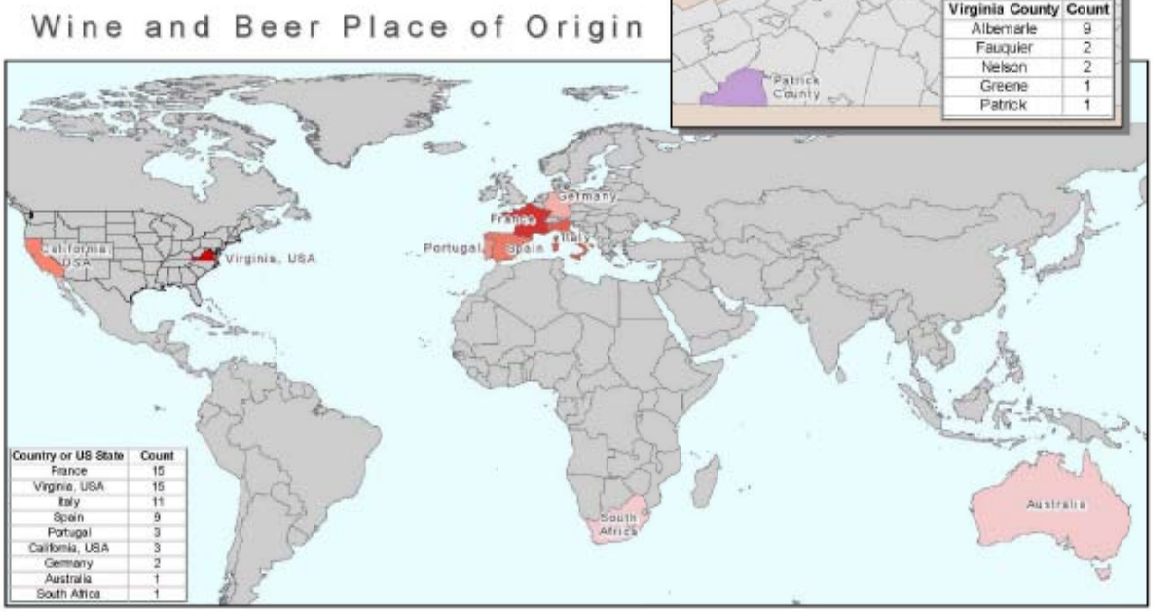
To begin our analysis, we sorted the product lists into the three pre-determined categories: wine and beer, cheese and olives, and local produce. Then we assigned a distributor and a producer, when necessary and available, to each product. This was accomplished by referencing the master product lists, which were organized by distributor, or by independent producer when applicable. For items which we could not identify the producer or distributor, Kate was able to provide the information from her personal records. The final step of data entry work was to determine the location of each distributor and product's origin. This process was straightforward. Many of the products had the country of origin in the product number, for example, FR100 is a product from France. Some products did not have an obvious country of origin listed on the master order list. These required some research using the product or producer name to determine a country of origin. In addition to the country of origin, we were able to determine a region, state or city of origin for many of the cheeses and wines. In addition to internet searches, the Appellation d'origine controlee (AOC) proved useful in extrapolating a region of origin within France based on the type of cheese or wine. The AOC, which translates as "controlled term of origin," specifies the production regions' varieties of cheese. For example, Fourme d'Ambert can only be produced in the Auvergne region of France. The AOC also regulates the production process and in some cases the location and origin of the cows or goats to ensure a consistent flavor and quality. More specific places of origin, beyond the country, were not found for all cheese and wines.

Local Produce

For the local produce list, internet searches of specific farms created a list of specific street addresses or towns. For the local producers we were able to be significantly more accurate in place of origin because items were shipped directly, for the most part. To some extent for all US producers, of both cheese and wine, it was easier to determine a town of origin, beyond just the state or region. Once the most specific places of origin were determined, we created maps in ArcGIS to display graphically this information.

Maps: Wine and Beer





Feast sells a range of wines and beers from across the globe. Most are concentrated in Western Europe, specifically in France, Italy and Spain. Feast also sells relatively large number of Virginia beers and wines. There are just as many from Virginia as from France. The wine and beer map shows the countries of origin of the products. In the US, the state of origin is shown. The complete list of wine and beer places of origin is as follows:

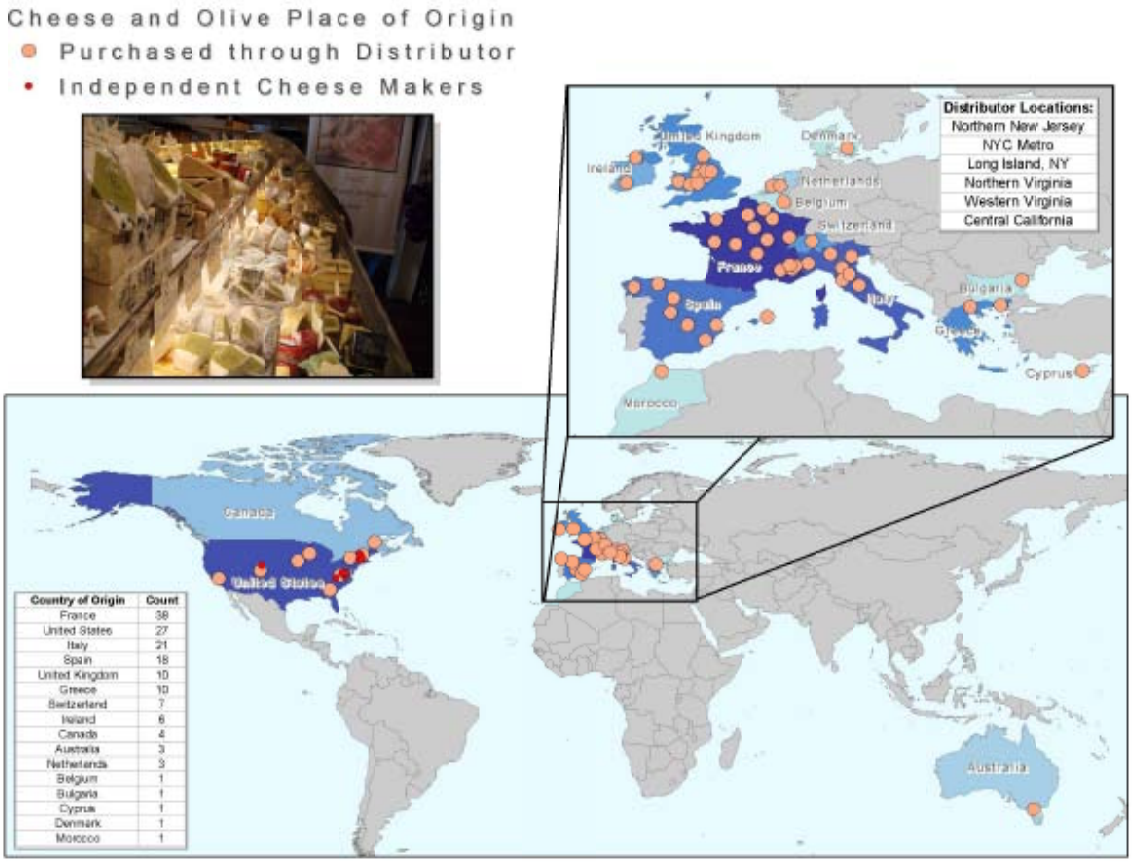
Country or US State	Count	Percent
France	15	33%
Virginia, USA	15	33%
Italy	11	24%
Spain	9	20%
Portugal	3	7%
California, USA	3	7%
Germany	2	4%
Australia	1	2%
South Africa	1	2%

For the Virginia wines and beers, we were also able to locate the towns where the wineries and breweries are located. It is interesting to note, however, that wineries sometimes import grapes. The winery locations therefore do not necessarily mean that the vineyards are collocated. The locations of the wineries and breweries are marked on the map with a purple circle. The complete list of Virginia wine and beer counties of origin is as follows:

Virginia County	Count	Percent
Albemarle	9	60%
Faquier	2	13%
Nelson	2	13%
Greene	1	7%
Patrick	1	7%

Maps: Cheese and Olives

The majority of cheeses and olives came from Western European countries. However, 18 percent came from the United States. Independent Cheese makers are designated with small red circles on the map. These cheese makers are clustered in Virginia and New England/Upstate New York. There is one independent cheese maker from which feast orders in Colorado. The beige circles represent cheeses and olives that were purchased through a distributor. Therefore, the number of circles on the map does not add up to the total number of products on the master order list. The beige circles only represent products for which a specific region or city of origin could be determined. Additionally, many products come from the same region or city, and therefore some circles overlap. The map as well as the complete list of cheese and olive places of origin demonstrate this on the following page.



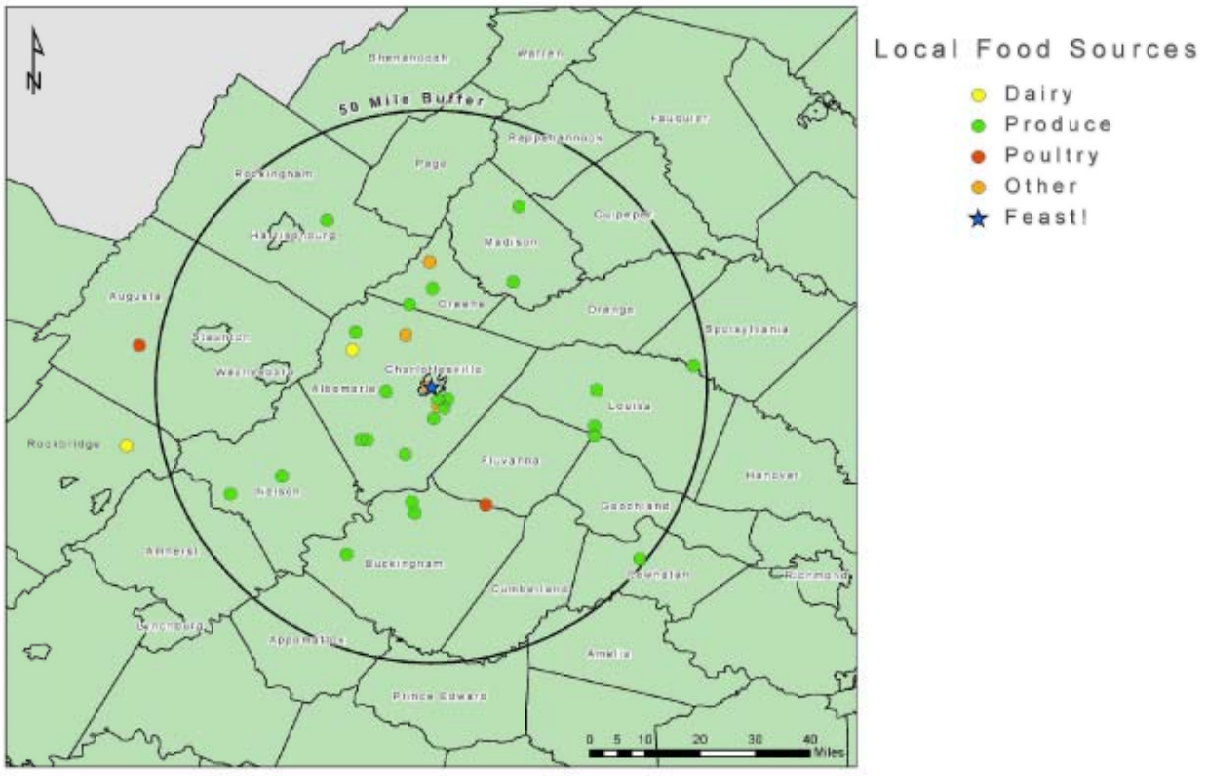
Country or US State	Count	Percent
France	38	25%
United States	27	18%
Italy	21	14%
Spain	18	12%
United Kingdom	10	7%
Greece	10	7%
Switzerland	7	5%
Ireland	6	4%
Canada	4	3%
Australia	3	2%
Netherlands	3	2%
Belgium	1	2%
Bulgaria	1	1%
Cyprus	1	1%
Denmark	1	1%
Morocco	1	1%

We were also able to determine the location of cheese and olive distributors from the master order list. For those products that came through a distributor, nearly 80 percent came to feast through a distributor in Northern New Jersey. The complete list of distributors of cheeses and olives is as follows:

Distributor Locations	Percent of Cheese & Olive Products from Distributor
Northern New Jersey	79%
Central California	10%
NYC Metro	5%
Long Island, NY	3%
Western Virginia	1%
Northern Virginia	1%

Maps: Local Products

The majority of Feast's local produce suppliers are located within 50 miles of the store. The master order list provided exact addresses for local producers and a description of the produces purchased from each source. The local produce map shows the location of each producer with a colored circle. Each color represents a different category of products.



Local & Global Market Baskets

Category	Local	Global
Wine	2005 Virginia Cabernet Franc Reserve Barboursville Barboursville.com	Cabernet Franc Tempranillo 2006 Vindal Product of Spain Grapes of Spain, Inc. Lorton, VA
Produce	Radishes and Turnips Double H Farms	Whole California Carrots Grimmway Farms Bakersfield, CA Grimmway.com
Cheese	Caramont Chevre Caramont Farm Caramontfarm.com	Le Tournevent Chevre Fromagerie Clement, Inc. Saint-Damase, Quebec
Dairy	Eggs (1/2 dozen) Hilldale Farm Wilmington, VA 434-589-2762	Swiss Premium Lowfat Yogurt Pink Grapefruit Produced for Emmi (USA), Inc. Valley Cottage, VA Emmiusa.com
Jam	Blackberry Habanero Jam The Farm at Red Hill North Garden, VA	Sour Cherry Preserve Harvest Song Ararat Valley, Armenia Produced and Packages by: Harvest Song, LLC, Great Neck, NY harvestsongventures.com
Sauce / Salsa	Southern Style Plantation House Salsa Plantation House Foods, Inc. Danville, VA	Tomato Basil Sauce Sonoma Gourmet Cotati, CA Sonomagourmet.com
Meat	Boneless Cooked VA Ham Edwards of Surry, VA S. Wallace Edwards & Sons, Inc.	Westphalian Ham Germany
Champagne	VA Sparkling Wine Thibaut-Janison Virginia Brut Afton, VA	Prosecco Montello E Colli Asolani Product of Italy Bottled by: Cantina Montelliona e Dei Colli Asolani Imported by: The Country Vintner, Inc. Oliville, VA

In addition to analyzing the master order lists for wine and beer, cheese and olive, and local produce, we also created two market baskets in an attempt to compare local and global food sold at feast. Feast prides itself on having a selection of high quality global and local artisan foods. While feast values and supports the local food system, global products are an important aspect of the diversity of taste found at feast. We chose comparable local and global products from eight categories that were on the shelves at feast on a Friday afternoon in March. The categories were: sparkling wine, cheese, egg/dairy, jam, meat, produce, sauce/salsa and wine. When choosing the contents of the market baskets we looked for products of similar price and taste. For example, the global basket cheese was a chevre from a small producer in Quebec, Canada and the local basket cheese was a chevre from a small producer in Esmont, Virginia, just south of Charlottesville in Albemarle County. Our local-global basket comparisons do not suggest that local products can or should replace their comparable global products. The purpose was to show that you could potentially buy a variety of local foods at feast. The global products have their own place in the food system.

The global market basket (See Map 4 in appendix) had a total straight-line distance of approximately 24,000 miles. The average distance was 3,000 miles. Some products did not come directly to feast. In these cases, the straight-line distances accounted for the points of distribution. The Harvest Song Sour Cherry Preserve from the Arrarat Valley in Armenia traveled the furthest, approximately 6,000 miles, to get to feast. The local market basket (See Map 5 in appendix) had a total straight-line distance of approximately 325 miles. The average distance was 40 miles. The Farm at Red Hill's Blackberry Habenero Jam had the shortest journey the feast's shelves at 11 miles.

Ways to Strengthen the Community Food System

There are many challenges and obstacles currently facing the local food system. The most pressing problems, as we have heard from multiple sources, are that one there are currently not enough local small-scale food producers to fill the region's demand for locally grown and produced food. Additionally, our local food system lacks the networks to connect producers to one another, to a suitable labor force and to retailers and consumers.

There are several underlying reasons for the dearth of small-scale local food producers, both locally and nationally. The main reason for this is that the rate of young people going into farming is significantly lower than the rate of older people who are retiring out of farming and food production. Vegetable and fruit farming provides inconsistent income throughout the year due to the seasonality of produce. This inconsistent, and often low, income is a big reason that farmland is going out of production and why young people are not attracted careers in farming. Furthermore, older farmers are susceptible to development pressures or pressure to sell off land to industrial farms because they are not making enough money to get by.

Farmers can supplement their incomes by creating value added products such as frozen, canned or jellied fruits and vegetables and then selling those products to retailers such as grocery stores or institutions. This is problematic, however, because in order to sell these products for retail or institutional use they must be prepare and store their food in a FDA inspected facility. Purchasing production and storage space as well as paying to be federally inspected and accredited is too expensive for most small-scale local farmers. Additionally, many institutions require that their food distributors have large amounts of liability insurance. There is a common perception that this liability insurance is very costly.

One possible solution that Kate is currently researching is the creation of a publicly owned Community Food Center. This federally inspected facility where community members and farmers alike could make and store value added products for retail or personal use could act as a central distribution point from which retailers could purchase products and they could be shipped. The creation of these products, which could be sold to grocery stores as well as at farmer's markets, would help provide farmers with a more consistent income throughout the year. This increase in income would make farming a more attractive livelihood in the Charlottesville area and would provide individuals some insurance against crop failures. Additionally, there would be a larger supply of local foods throughout the year, thus enhancing and supporting the local food economy.

The Community Food Center could serve to foster connections and networks and in that way would enhance and reinforce the strength of the local food system. It could include a space for agriculture or food related educational programming. The Food Center could serve as a central point for establishing support systems for new food producers.

Conclusions

There are several aspects of the feast business model that sets it apart from mainstream grocers. Kate has established personal relationships with both her customers and producers. She has taken the time to recognize their concerns and preferences in order to ensure long lasting business relationships. Kate feels a responsibility to her customers to research the products that she sells in her store to ensure high quality and social responsibility in their production. Because of the higher costs of these products, feast must price accordingly.

Feast actively participates in the community through donations as well as by having a community bulletin board and meeting space. Furthermore, feast's website has local food resources and links to educate the community about the value of eating local. Kate's personal initiative in the establishment of a Community Food Center reflects this commitment to build resiliency in the local food system.

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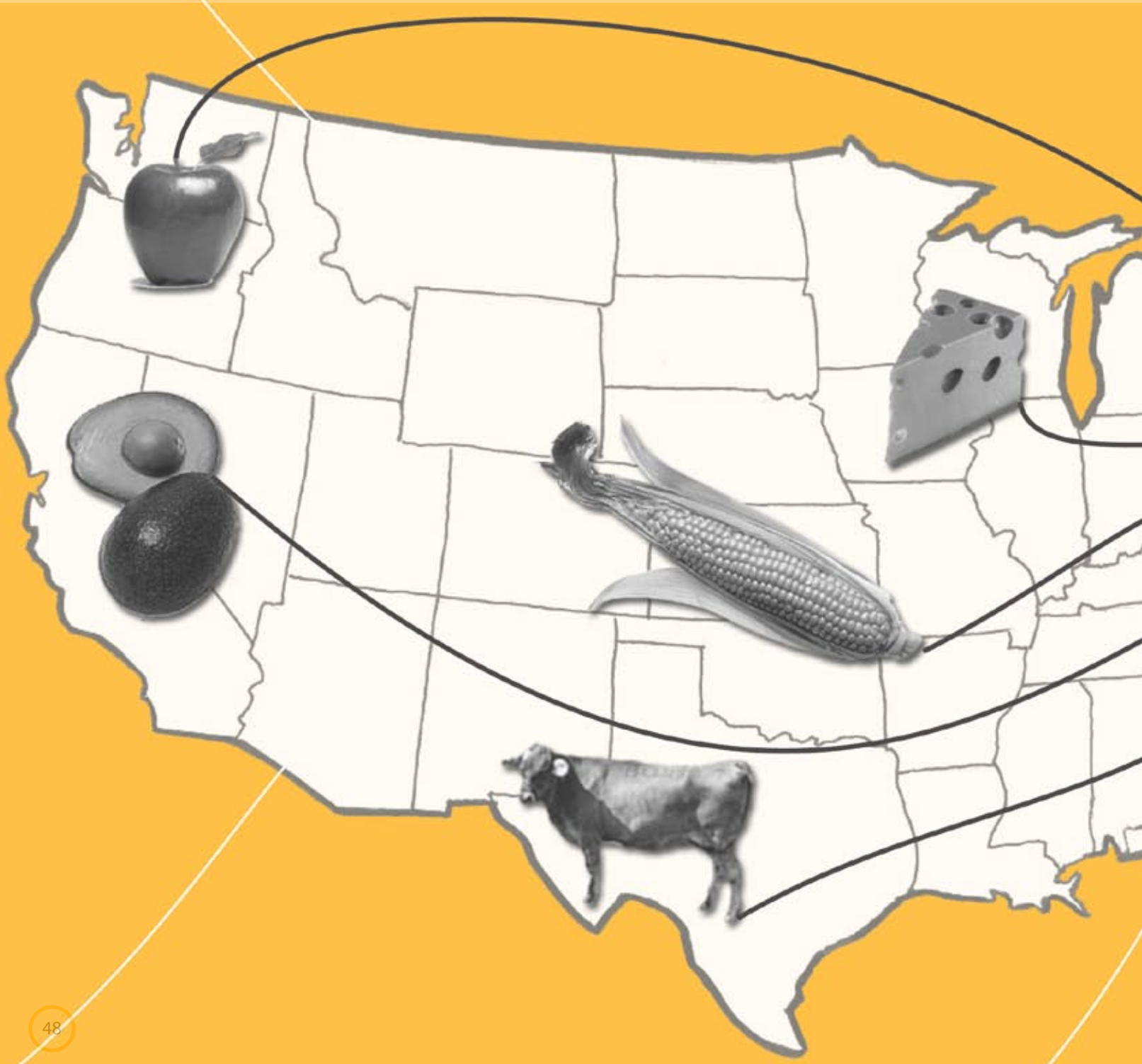


Blue Moon Diner

An Analysis of a Local Restaurant

Esther Diehl
Sara Teaster

Goals

The Blue Moon Diner is a local Charlottesville landmark. Located in the heart of Charlottesville, the Blue Moon Diner offers breakfast all day, as well as dinner and lunch and daily specials. Offerings include everything from French Toast to Fish-N-Chips to a variety of omelets to a variety of salads with an in-house dressing. Owners and operators Mark Hann, Rice Hall, Laura Galgano, and Rob Gustafson have reopened the diner and have also incorporated a catering business, Harvest Moon Catering. Just about anyone that walks in to the Diner will feel comfortable and enjoy the laid-back atmosphere. The food is worth every penny paid and many of the various dishes have turned one-time curious investigators into loyal regulars. The purpose of our analysis of the Diner was to research and discover the impact of the use of local and non local sources on the health and welfare of the local economy, the impact on the environment, on the strength and vitality of the business, and on the health and well being of the staff and patrons. In finding the answers to these questions, we also hoped to ultimately gauge what concerns the owners have regarding the use of local food sources, as well as how the patrons of the Diner feel about local foods.

Our goals for analyzing the restaurant, the Blue Moon Diner, were to see how one restaurant's choices may or may not have an impact on the local community, its patrons, its staff, the environment, and furthermore, to see how these choices may have an impact on the success of the business model and productivity. To better understand and define the goals of this research, we hoped to learn the goals and business model of the Diner's owners. Upon learning their goals, it was necessary to ask the following questions:

What is Blue Moon Diner's philosophy in healthy food?

Is providing healthy food a goal of the current or desired business model?

Would using local food sources be a desired model for Blue Moon Diner?

If you choose to source local foods, what are the goals associated with costs and budget for sourcing local food?

What are the financial goals of Blue Moon Diner?

What are the environmental costs from the food sourcing decisions that the Blue Moon Diner makes? (This may include support of locally designated protected farmlands and the impact of food miles on the environment.)

What will the Diner's philosophy be on covering the costs of changing to local sourcing by transferring it to the consumer or staff?

Our goal was to find the answers to these questions through interviews, research and a customer survey.

Methodology

Subject Analysis

Our first step was to interview the owners, Mark Hann and Rice Hall. This interview was important in determining the needs and desires of the restaurant in regards to their participation level. This was also important in terms of establishing a working schedule for the semester and it gave them an opportunity to further understand what we would be doing and what we would be requiring from them. Several key points for our conclusions came from conversations from this initial interview. In the interview we planned to pick one day to analyze foods sales to pick the most popular dishes. Instead, Rice Hall suggested we track sales for two consecutive Saturdays to give a well-rounded view of what sales would consistently be like. We also set up a time for a follow up meeting in order to get the tracking information, and to request approval for a customer response card to be passed out to customers willing to take a 'Local Foods' survey.

Inventory

With the owners, we analyzed and decided upon our Unit of measure: the most popular menu items for a total of six entrées including breakfast, lunch and dinner dishes. Because they already knew what would be the best selling dishes, the owners pre-picked the six dishes and on the previously discussed two consecutive Saturdays they were counted to see how many of each dish were sold. Under strict instructions that the data remain confidential, the Blue Moon Diner provided us with a list of ingredients and their suppliers for each dish that had been tracked.

Costs

After the chosen days for analysis of sales, we had a second meeting with the owners of Blue Moon Diner to help us better understand the data that had been collected and to provide additional contact information where needed. We also discussed food costs in this interview, but in the end, the issue of food costs was not as significant as we had initially hoped and consequently, was not given as much attention. Not only was the overall cost less important, but also individual costs and individual food units (ie. tomatoes, potatoes) were not considered as much as we had originally hoped. From this meeting, we better understood that because the cost of buying locally grown foods was a more expensive endeavor than sourcing through companies like Sysco and Aramark, the Diner—along with many other restaurants—was not able to afford local foods while maintaining the current price point of their food.

Sources

We contacted sales representatives at Sysco, Bantry Bay Spice Company, Standard Produce of Charlottesville and the butcher department at Reid's Supermarket as these are all companies that the Diner for their food supplies. Each of these companies sources their food from many different locations depending on availability, season, pricing and growing region among others. We attempted to continue to track the food along the sourcing chain as far as we could to find exactly where the food was coming from but ran into many roadblocks with people generally 'not knowing' where the food had come from before it had come to them. This was important step in understanding how many food miles went into the dishes and even though we were not able to get specific answers we were able to get some general answers providing us with an overall concept of how disjointed the American Food System really is.

Alternative Sources

Once the sources currently in use were identified, the miles of these sources could then be calculated. It was important to understand why these choices were made. In investigating the selections, we wanted to learn if alternative sources were available.

Share Findings and Feedback

The owners and staff of the Blue Moon Diner were invited to our final presentation not only to learn about

what we discovered concerning the Diner itself but also to be witness to all that is currently going on in the local food system in Charlottesville. We will be meeting with them the first Tuesday in May to present our paper to owners Mark and Rice and to share our ideas concerning positive change for the diner as well as areas we found to be interesting in our research. This meeting will be used to get Blue Moon Diner's input on our findings and give them a chance to voice their questions and concerns and possibilities for implementation.

Final Recommendations

After applying the results of the data analysis of all sources and taking into consideration the costs, effects, and desires of restaurant owners, recommendations and ideas are included in this paper.

Findings, Insights, and Lessons for the Food System

The findings, insights, and lessons could be summarized into three categories: money and time, transparency and education.

Money and Time

As we began to work with the Diner, we were immediately aware of the amount of time and dedication each owner has and continues to pour fourth into the restaurant. They are constantly busy and time is a very precious and valuable resource. Each owner has a remarkable understanding of not only their business, their customers but they also really value and understand the community at large. The problem of changing a business model that seemingly runs smoothly is that it can really be a very dangerous proposition. The "If it ain't broke, don't fix it mentality" seems to come to mind when speaking with the community and owners about the Diner. It is not that these people are unaware of the values of sourcing local foods and giving back to their community but as they are working very hard and have been for quite some time, taking a chance could mean losing everything they have. But new problems are now facing the world in the form of global warming due to rising carbon and consequently, oil prices have risen and so too have the prices of foods. These effects on our global network will soon trickle down to each and every small town, American Diner. The model of the glocal community and food system brings about many changes some of which are inaccessible to most people. It is important to understand what one's limits are as far as how much time and money can be invested in adapting to the changing world. As previously mentioned, the Diner owners are there practically every hour the diner is open. The side catering business carves out even more time from these individuals' lives aside from regular Diner operating hours. Where would the owners find the time to research alternatives to their current food sourcing?

We interviewed Lisa Reeder, who has recently started a business called, A Local Notion, to help produce ideas as far as aiding local food industry businesses in sourcing local food. She sets up restaurants with farmers and for a small fee does the administrative work and takes care of the things that these business owners would not have the time to do. The catering side of the business, Harvest Moon Catering, is

already using Lisa's services in order that they may offer their clientele menus for their events with food soured all locally. Lisa would like to see this practice of local food sourcing extended to the masses that flock to the Diner on a daily basis. She explained her idea of the combined ordering power of the two parts of the business in order to save both time and money.

When running small businesses money is more important than can be imagined. Through our research we learned that money was also an important factor in the decision making of the customer, many of which identified price as a top consideration when choosing where to eat. The most cost effective bottom line must always be considered in each decision that the Diner makes.

Transparency

The aspect of transparency in the American Food System quickly became a common theme not only in our research for the Diner but was an issue with nearly every project in the Community Foods class. The level of transparency needed to properly research this project is currently not available under the way the American Food System is currently set up. State and Federal regulations do require the labeling of food sources which makes tracing the routes traveled by foods and consequently, their original sources difficult. In many cases, we were only able to get to the state or country of origin. We were unable to track food products to the farm or plant where they were processed, which made studying farming practices or labor practices impossible.

Education

The issue of educating the community concerning the American Food System and what it takes to support local food systems is one that has to be approached at a broad level. The most surprising finding in our customer response survey was the lack of knowledge concerning local foods and all that it entails. If community members in all regions of our country were better educated and information was made readily available then whole communities could work to positively change and eventually our country could change from the bottom up.

One of the most interesting parts of our research this semester was the customer comment and question card. We wanted to better understand the impressions of those eating at Blue Moon Diner con-

cerning local foods and we felt it would help us assess whether or not eating local is something that the general public strives to do or if it is even within their reach. We asked six questions concerning local foods and the findings of this survey are as follows.

The following questions were on a comment card that was placed next to the cash register in the Blue Moon Diner for two weeks. We received 38 responses to the following questions:

1) When going out to eat, what are the three most important things you look for in a restaurant?

2) Is eating local foods something you try to do? If yes, how many times per week do you eat local foods?

3) If a restaurant provided more local foods, but had to raise the price to do so, would you pay more?

4) Where do you buy your food (both local and non local)?

5) What problems, if any, do you feel we as a community have with our local food sources?

6) What is your general income bracket?

For question number one, it was important that we had a better understanding of what Diner patrons were looking for from their dining experience. The Diner owners had also expected that the most important factor for their customers was price point so we had wanted to assess how important this actually was in the decision-making. The questions were based of course on general dining experiences, not just Blue Moon Diner specific. We received the following results for question number one:

Top Three Desired Factors When Dining Out (all answers included):

Food Selection and Quality of Food – 33 people

(Food selection responses included answers such as menus options, quality of food, variety of menu choices, flavor, consistency and portion size.)

Price – 17 people

Ambiance and Atmosphere – 17 people

(Tied for number two were price and atmosphere and ambience. Also included in ambiance and atmosphere were cleanliness and the dining room design.)

Service and Staff – 14 people

(This area included competency, friendliness, and quality of service.)

Specialty food choices were each considered important when mentioned so we have included each if these as individual categories:

Local or Organic ingredients – Four people
Specialty Drinks – Three people
Healthy options – Two people
Vegetarian Options -- Three people
The last two groups of responses included:
Local ownership – Three people
(This included responses of local ownership and non-chain restaurants.)
Location of Restaurant – Four people

Question number two gave us basis for determining if eating local food was a concern of restaurants patrons. When asked if eating local food was something the restaurant patron tried to do we received the following answers:

Yes – 32 people
No – Three people
Other responses – Three people

In the responses that were not clearly indicated as yes or no, these individuals indicated that they try to buy certain local products such as beef or wine, but not necessarily all types of food. The comments here also suggested that the local food was sought out in grocery store purchases and food to be prepared within the home, rather than food bought at a restaurant.

Question number two also allowed us to assess how important eating and purchasing local was by indicating how many times per week this was done. These were the responses:

Two times per week – five people
Three to Five times per week – 15 people
Five to Seven times per week – seven people
More than seven times per week – one person

The additional comments that were added by survey participants to this question were particularly helpful in determining shopping habits. Many people suggested that their buying habits were influenced by seasonality, according to food availability. Some survey participants did not associate food purchases in restaurants with their buying habits of local food. One survey participant noted that price was a concern

in how many times they were able to buy local foods per week.

Question number three involved the issue of whether or not it was reasonable to raise the menu price of a dish if it contained more local foods. And if so, to what extent?

Yes – 26 people
No – three people
Maybe – seven people

Most participants who answered "maybe" left a comment to explain their answer. Some expressed that they would not be able to go out to eat as much if food prices were higher or that higher food prices may affect menu choice. The other group of answers was particularly interesting to this project, because it left us with some insight into the local food problem. The participants made concerning their lack of understanding as to why local food was more expensive. This survey made it very apparent that most believe that travel costs are thought to increase food prices. If this is the case, as many believe it to be, then why should local food cost more? One survey participant suggested that the restaurant should advertise local foods more causing more people to buy them and then they would not cost as much.

Question number four covered the topic of local food buying habits. We asked where participants bought their food whether they were buying locally or not. We believe that after viewing the responses this question could have been worded differently, but the responses do show that the general public feels that the only place to buy local food in at the farmer's market. One participant expressed frustration over the market only being on Saturday mornings, and that it was difficult to wake up early in the morning on a Saturday after working on a Friday night until late. These responses show a great need to not only have more venues to be able to purchase local food as well as to educate the public about the Wednesday Farmers in the Park project and shops like C'Ville Market.

Responses for question number four are as follows:

Farmer's Market – 17 people
Harris Teeter – 12 people
Whole Foods – 12 people
C'Ville Market – ten people
Giant – eight people
Intergral Yoga – seven people

Kroger – seven people
Food Lion – five people
Feast – five people
Foods of all Nations – three people
CSA's – three people
Grocery Stores (general) – two people
Reid's Market – two people

Each of the following responses were only mentioned once: local co-op, IGA, Asian Market, Mona Lisa Pasta, and Martin's (in Waynesboro). One person expressed that the location of the store and price determined shopping habits and one person said they grew their own local food.

Question number was one of the more revealing questions of the survey. This question asked the survey participants to explain in detail what problems they encountered, if any, with the local food availability in our community. The following are the general categories that were mentioned as problems as well as some specific comments that were mentioned by participants.

Price – nine people
Not enough local food – nine people
Seasonal availability only – four people
Lack of education about local foods – four people
Pretentious attitude concerning eating local – three people
Lack of advertising from restaurants and stores – three people
Diminishing farmland – two people
Restaurants should carry more – two people
Government restrictions interfere – two people
Bad ideals of general public – two people
Local food has a lesser quality – one person
No problems with local food – one person

Some of the comments in this section of the survey led us to believe that the general public is confused about what it means exactly to buy local foods, as well as what factors contribute to the price points of local food, and where to get local food year-round. Some comments also listed specific problems, such as the lack of recyclable packaging in organic and local foods. One person said the competition from national chains is just too great. One comment, which was quite humorous, brought up a strong dislike of a family who owns their own chickens on Belmont Avenue. Through this question we were able to clearly

understand that each part of the local food system has an effect on people in different ways.

Question number six addressed the income bracket of each participant and through our own study of the surveys we were able to determine whether or not negative opinions and answers were at all correlated with available finances or if people were willing to prioritize buying locally in their budget.

Survey results are as follows:

$0- $5,000 per year – seven people
$5,000 - $10,000 per year – two people
$10,000 - $15,000 per year – three people
$15,000- $20,000 per year – three people
$20,000- $25,000 per year – five people
$30,000 - $35,000 per year – 10 people
$35,000 - $50,000 per year – two people
$50,000 - $75,000 per year – one person

The results of this question were most likely affected be a high student population with low income.

Food Maps

United States Food Map

In our attempts to find where the food being served at the Blue Moon Diner was coming from we were able to get little further than the state or regional area of origin. We were in touch with Sysco, Standard Produce of Charlottesville, Bantry Bay and Reid's Market concerning their sources for the foods they provide but not only did the representatives seem unwilling to provide information there was a general attitude of disregard as these conversations were eating away at their valuable time. The following list of items, served at the Diner, are sourced within the United States:

Roasted Golden Beets, Spring Mix, Julienne Red Pepper, Baby Spinach – California
Granny Smith Apples – Washington State
Red Onions – Texas
Potatoes – Idaho
Shiitake Mushrooms – Pennsylvania
Eggs, Milk, Heavy Cream – Shenandoah Pride, Virginia
Cheese – Wisconsin
Julienne Red Pepper – Holland (depending on season and availability)
Beef – Pennsylvania
Pork, Chicken – Virginia
Lavender, Marjoram – USA

Our findings for the global sourcing for food were essentially mirrored to the results from our United States research. Many of the products being sourced outside of the United States are specialty products like cinnamon and a variety of herbs and spices. Many of these products cannot be grown within the United States and therefore require international sourcing. It would have been an interesting endeavor to really be able to get to the actual source of some of these food products as they may be supporting local communities on the opposite side of the world. The following list of items are sourced internationally:

Julienne Red Peppers, Spring Mix – Mexico (depending on season)
Nutmeg – India
Cloves, Pepper – India
Sea-Salt, Tarragon – France
Oregano – Greece
Basil – Egypt
Thyme – Poland
Rosemary – Morocco
Savory – Dominican Republic
Fennel Seed – Asia
Dill Weed – Israel

Challenges

It is very apparent that the cost of sourcing food locally is one of the main concerns of many restaurant owners and operators. Will their clientele be willing to pay more? Will their clientele be able to afford to pay more? Will they have to adjust recipes? Will adjusting recipes increase cost? Will they be guaranteed certain foods during the entire year? The questions that start to pop into the minds of those who own and operate restaurants concerning the viability of sourcing and serving local foods are endless. Organization of the local farms into a cohesive system that works smoothly with members of the community to ensure provision to those who would like to support the local farmers would be the first step to implementing positive change in the national local food systems. Many issues also arise with government policies concerning the entire local food process and unless people are willing to stand up, come together and implement change then the American Food System will continue to downward spiral in the way that it has been for the past couple of decades.

Ideas and Opportunities

However dark and dreary the challenges of the food system may seem, there are always opportunities for positive change provided that those standing in the window of opportunity are willing to put in the extra work or take that chance. Through our interview with Lisa Reeder, we really came to believe that an organized system for local food suppliers and sellers to be able to sell, process and buy goods would be an effective way to bridge the gap between the two ends of the spectrum. In addition, restaurants like the Diner with open green space can use this space to grow herbs or plants like tomatoes and squash that are not only easy to grow but are also easy to incorporate into many dishes. This type of garden would not need to require that much time other than the start-up and if needed, an additional staff person can be temporarily hired to get the garden started. Another way that the local and glocal foods can be brought to the forefront of the average persons thinking is through local food boards—outlets for people to plug in and take away information at their own convenience. Blue Moon Diner is already one step ahead in advertis-

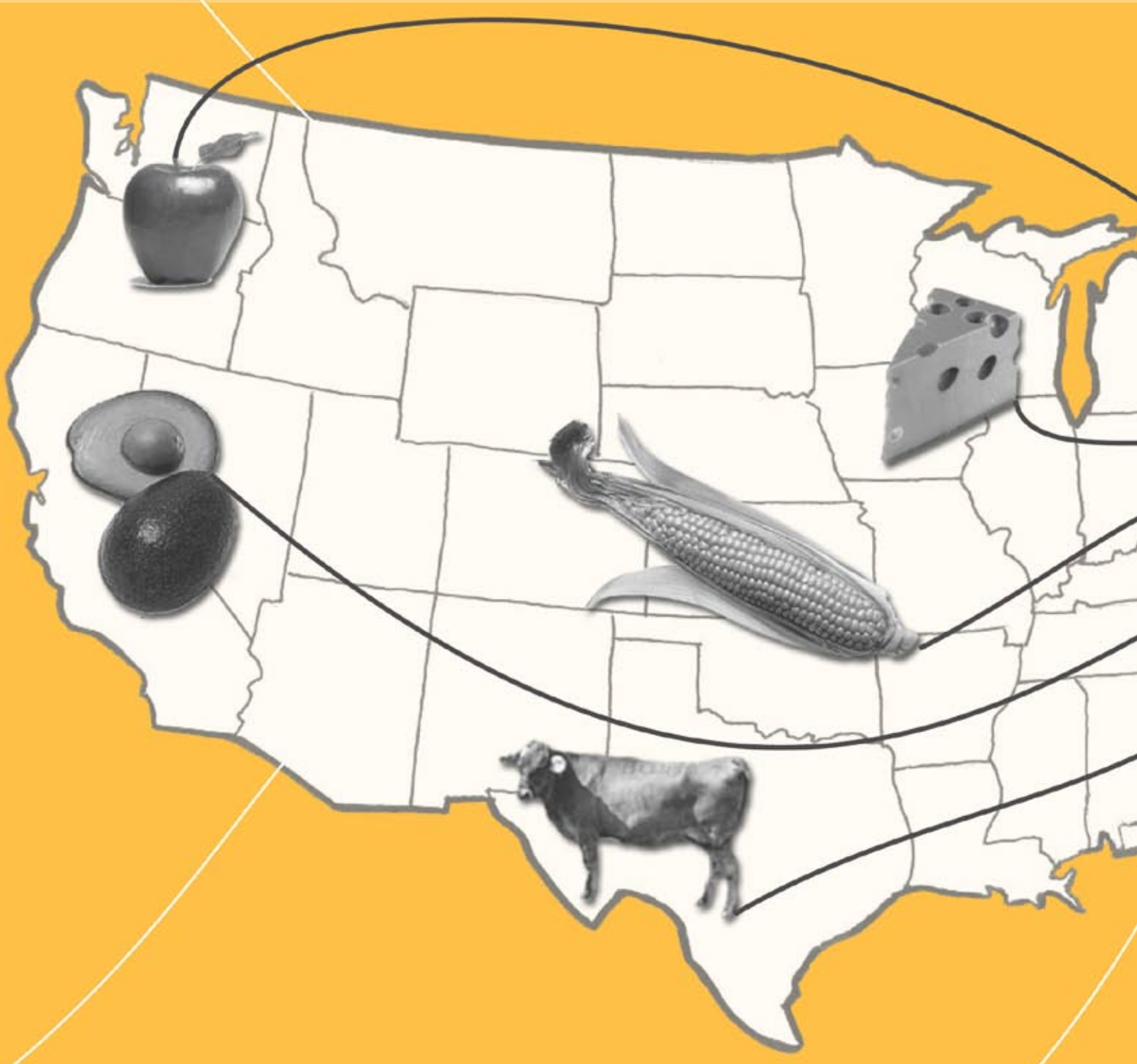
ing local and artisan foods as well as not only connecting the community through food but through other activities and opportunities going on around town.

The picture on the above left shows a space behind the Diner that appears to be freshly prepared for gardening. This space could be used for planting various types of herbs and vegetables. The picture on the above right is more green space that the Diner could use if they decided to plant more plants.

The picture on the bottom left is of a board that is in the Diner that advertises things like artisan bacon and cheeses. The picture on the bottom right is the local activity board where people are welcome to give or take any knowledge or information they are willing to share.

Conclusions

While there are many challenges for local food in communities all throughout the world, when people are willing to take a stand by joining together to actively change their current situation they are able to change things that affect hundreds and thousands of people. The American society and culture has become known for its desire to find the quickest, cheapest fix to any and every solution. We are now slowly beginning to realize that these quick and cheap solutions have caused even greater problems than anyone could have ever anticipated. Many people are realizing that it can often take hard work to do things correctly and that the solution may not always be the quickest or the cheapest but in the end it may be the most beneficial. As long as these people continue to work hard at producing incredible solutions more people will realize that it is not above and beyond themselves to take part of this incredible movement to eat healthy and eat locally.



The Big Business of Local Food

Local Food Options at the Charlottesville Chipotle

Jonathan Coble
Alexandra Rosas
Clarice Zusky

Introduction

Charlottesville, the #1 place to live in the United States, has made great efforts to support small scale shops and stores who source produce from locally based farmers (www.charlottesville.org). This prevents food from traveling long distances and becoming less nutritious due to added preservatives. As Professor Denkla-Cobb and Professor Beatley stated in the introduction to the class, the reality of Glocalism recognizes the near impossibility to completely disconnect from the larger global economy, and our necessary obligation to be engaged in it as citizens and consumers. Our choices present us with opportunities to connect with people and communities. The food we choose allows us to be part of an environmental citizenship where we have the ability to improve living conditions, solve environmental problems and monitor consumption throughout the world.

www.charlottesville.org

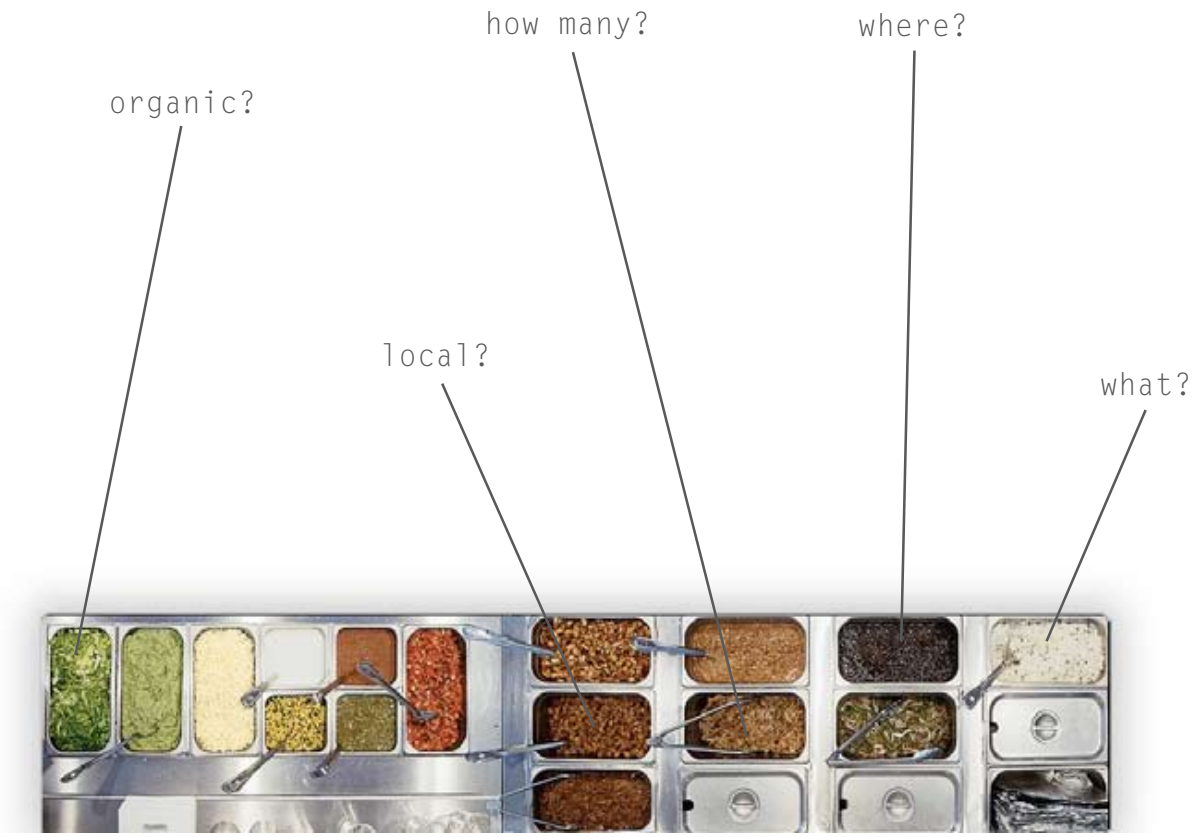
Chipotle

www.chipotle.com

Intentions

Our intentions, as the 'Chalooptie' Offensive, involved the analysis of the national corporation, Chipotle. We focused on the Big Business of Local Food and specifically, local food options at the Charlottesville Chipotle and their impact on our community food system. The goals of the project involved the analysis of current food inputs, the investigation of local food sources, their effects, and a food mileage analysis. While Chipotle requires a certain level of standardization in their food processing and presentation, our goal seeks to understand how sourcing local food can maintain their operating philosophy while contributing to the economic health of the surrounding community.

Our methodology consisted of intetrviewing several Chipotle representatives at the Charlottesville location, including manager Jonathan Dowler, and regional manager, Phil Petrilli. Through the Northern Virginia Chipotle, we managed to correspond with the Research Coordinator



unit analysis: visual menu

www.google.com

from the Purchasing department, Ms. Sara Rubin. She asserts that local sourcing is a current goal for Chipotle. The company is working to find local farms neighboring each of their distribution centers that will be able to supply 25% of one item of produce for the summer/fall harvesting season. In most cases, these items include bell or jalapeno peppers, onions, or romaine lettuce. These are among the produce items that arrive unprocessed to the restaurants; some items, like diced tomatoes and chile peppers for salsas are processed at more central locations before being shipped to restaurants, so it is harder to reduce food miles in those areas. Ms. Rubin will be in charge of tracking the local sourcing program this summer and measuring whether they meet their 25% goal. In addition, she plans on, hopefully, being able to quantify any environmental benefits they may see, as well as social/economic impacts on the communities. Her main goal is to follow up with farmers and understand how this program affects them and their sales. Ms. Rubin will also be closely monitoring how local produce matches up in terms of food safety and quality.

On the supply side, we spoke with several Polyface representatives, including Joel Salatin and Farm Manager, Matt Rales. Recently, the Chipotle in Charlottesville has been sourcing their carnitas pork locally from Polyface farms. In June of this year the company is making the determination whether or not to continue with this local product. Certainly buying locally channels more revenue through the local economy and the community. Whether Polyface is currently saving any energy is hard to tell because they run smaller loads than the bigger companies, like Niman Ranch. Even though the companies run more miles than Polyface, their volume per mile is greater. The biggest factor that prevents this from working is the food safety regulatory environment that discriminates against small-scale processing facilities. Joel claims this is the "single biggest impediment to making this work."

In our research, we also conducted a survey of 155 Charlottesvillians. We asked six questions ranging from have you ever eaten at the Charlottesville Chipotle to would you be interested in seeing more local ingredients on the menu and be willing to pay more for them?
In our analysis of food miles, we used various graphic programs to map the physical dimensions of Chipotle's current food sources. The concept of food miles involves the transportation of food and drink. The more food miles associated with a given food, the less sustainable and desirable that food is. Local Markets are a great source of fresh vegetables and locally sourced dairy products, fish, and meat. The distance food travels and its effect on the environment can be greatly reduced if Chipotle prioritizes local produce. Our group expects that the Chipotle in Charlottesville will realize that continuing to buy local will be fresher, healthier, and more sustainable for their business.

www.polyfacefarms.com

Findings, Insights, and Lessons for the Food System

It is difficult for a large-scale corporate restaurant chain to change the way they buy their food. Chipotle circumvented this problem by adopting a more sustainable practice from the start. Their mission, since they opened the doors in 1993, has been to serve "Food With Integrity". This is a philosophy that implies that "we can always do better in terms of the food we buy. And when we say better, we mean better in every sense of the word- better tasting, coming from better sources, better for the environment, better for the animals, and better for the farmers who raise the animals and grow the produce… [It] include things like unprocessed, seasonal, family-farmed, sustainable, nutritious, naturally raised, added hormone free, organic, and artisanal" (http://www.chipotle.com/#flash/fwi_story). The Charlottesville branch Chipotle is the company's test store to see how much further they can push their philosophy in trying to source locally. They are "revolutionizing the way America grows, gathers, serves and eats its food" (http://www.chipotle.com/#flash/fwi_story), and by factoring in the proximity of their inputs, they are beginning to impact not only the food system but the greater global environment as well.

One of the biggest problems with large-scale restaurant operations buying from local farmers is the desire of corporations to limit the number of suppliers they are buying from. Buying from only several suppliers minimizes cost and maximizes efficiency. Chipotle buys their beef from Niman Ranch, a middleman organization that functions as a co-op for small-scale sustainable cattle ranches that can sell their product under one brand name to big businesses. The beef is not coming from only one ranch, but Chipotle is buying beef from only one vendor. In Charlottesville, Chipotle has created a similar relationship with Polyface Farms to source pork Polyface "arguably represents America's premier non-industrial food production oasis. Believing that the Creator's design is still the best pattern for the biological world, the Salatin family invites like-minded folks to join in the farm's mission: to develop emotionally, economically, environmentally enhancing agricultural enterprises and facilitate their duplication throughout the world" (http://www.polyfacefarms.com/story.aspx).

Polyface and Chipotle form an unlikely perfect fit. Polyface wants to spread their knowledge of "healing the land, healing the food, healing the economy, and healing the culture" (http://www.polyfacefarms.com/story.aspx), while Chipotle believes that "growth can be good. Our size helps

us influence the decisions of our suppliers…it means encouraging growers to pursue humane and healthy practices, and rewarding farmers who eschew mass production in favor of quality. It means new and higher expectations from all of us about what we consume every day…Our size means we can change for the better the way more people eat" (http://www.chipotle.com/#flash/fwi_story). The farm's pork production has had to increase, but Polyface is willing to expand to meet the needs of Chipotle. Both sides win. Chipotle is able to push the envelope of how a fast food chain can buy and make a product while Polyface is increasing their business and has tapped into an nationally recognized restaurant to help spread the word of "beyond-organic" farming.

This marriage is setting the stage for how the small-scale farmer and big business can work together. It is proving that large corporate restaurants can have a positive impact on the local farm economy. Chipotle, like any restaurant, needs reliable sources for their ingredients. Especially in chain restaurants, it is important that there is consistency in quality and taste as well. Customers come in with specific expectations of what their chicken burrito is going to taste like and if that varies, all hell will break lose. The Charlottesville Chipotle would source more

ingredients locally if they had a reliable source, even if it was only for part of the year. Certain ingredients, like cilantro, lettuce and tomatoes, have much shorter shelf lives and it would be in Chipotle's interest to source more locally, but at this point, the demand is much greater than the supply (phone conversation with Phil Petrilli). Polyface was willing to increase their supply of pork to meet the demand of Chipotle. For the farm, it's a guaranteed source of income. For the restaurant, it's a source in which they are confident of both quality and quantity. Other farmers could do the same.

Subject Profile

The first Chipotle restaurant opened its doors in Denver, Colorado in 1993, by its founder and Chief Executive Officer, Steve Ells (www.chipotle.com). His intentions were to create a restaurant that fell under a new category of dining establishments known as fast casual (www.chipotle.com). The corporation's marketing slogan, "Food with Integrity," is Ells' philosophy on buying better food. This philosophy has led Chipotle to serve naturally raised meat, require sustainable practices in

www.google.com

farming, and eliminate the use of hormones in their dairy products. Since the beginning, the corporation has been making various changes to improve their approach to consumption with regards to sustainability, recycling, and their food philosophy (www.chipotle.com). Chipotle plays a major role in adding to the local economy. Continuing to buy locally will enhance Chipotle's stimulation of Charlottesville's local economy.

www.toddtransit.com

Food Miles: Calculation Methodology

Communications with Chipotle yielded a general idea of its food sources. The origin of the meats are fairly conclusive. For other products, though, specific location or farm names could not be ascertained. For example, we know that Chipotle's beans come from Michigan, but we do not know a specific farm, town or city of origin. In these cases, we researched locations where production of the particular ingredient is high and used that as the point of origin. Avocado farms, for instance, exist in abundance near Santa Barbara, California; Uruapan, Michoacan, Mexico; Quillota la Cruz, Chile. Knowing that Chipotle sources its avocados from the larger geographical regions, we measured the food mileage from the outlined subregions.

Food Miles

Average Food Miles Per Input
Tomatoes
Lettuce
Cheese
Sour Cream
Cilantro
Avocados
Chicken
Pork
Beef
Peppers and Onions
Rice
Beans
Input
0
500
1000
1500
2000
2500
3000
3500
Food Miles

Input	Source	Food Miles	Average Food Miles
Beans	Michigan	700	700
Rice	Arkansas	800	
	Mississippi	900	850
Peppers	Colorado	1800	
Onions	Upstate New York	550	
	Southern Canada	2000	1450
Beef	Coleman Natural Foods, Saguache, CO	1800	
	Niman Ranch, Thornton, IA	1100	1450
Pork	Polyface Farms, Swoope, VA	50	
	Heritage Acres, Joplin, MO	1000	
	DuBreton Natural Pork, Quebec, CA	950	50
Chicken	Bell and Evans, Fredericksburg, PA	300	300
Avocados	Mexico (Uruapan, Michoacán)	3000	
	California (Santa Barbara)	2600	
	Chile (Quillota la Cruz)	4500	3367
Cilantro	Florida (Belle Glade)	1000	
	New Jersey (Old Tappan)	350	675
Sour Cream	Dallas, TX	1200	1200
Cheese	Wisconsin (Algona)	1100	1100
Lettuce	California (Salinas)	2700	
	Arizona (Yuma)	2400	2550
Tomatoes	California (Woodland)	2800	2800
	Total Miles		16492
	Average Mileage per Input		1374
	U.S. Price Diesel Fuel (Cents Per Gallon)		405.9
	Average Fuel Efficiency 5-Wheel Tractor Trailer		5
	Cost of Fuel for Total Food Miles (USD)		$13,387.94
	Cost of Fuel per Input		$1,115.66

Where are the ingredients of the visual menu coming from?

rice: Arkansas and Mississippi; they source the rice more regionally, meaning that Chipotle branches up and down the east coast and moving into the mid-west are probably getting their rice from these areas

green pepper and red onion: fresh peppers and onions are only available in the US from May to mid-October and the growing season migrates from Colorado to Southern Canada to upstate New York

beans: Michigan; leading organic bean farmers in the country (perhaps the world?) currently they source 25% of their beans organically from there and that's all that's available

beef (for steak and shredded): right now they are sourcing from Myers and Coleman (Colorado)—small beef farms that are part of a co-op like Niman Ranch; beef is next item that Chipotle is hoping to source from Polyface

pork: Polyface is supplying approximately 100% of the pork to the Charlottesville store but since the animals vary in size and fat content, depending on the season, they will add pork from Neiman Ranch, Ozark Mountain Ranch (Ozark, Missouri), DuBreton Ranch (Quebec, Canada)

chicken: Bell and Evans, Fredericksburg, PA; because they are using more of the dark meat, there is an excess of white meat. Chipotle has worked with Panera as a source of the white breast meat. Other larger-scale poultry companies, like Tyson, have approached Chipotle to see what they can do to change their practices to become a chicken source for the growing restaurant chain

avacados: depending on the time of year because of migrating growing seasons, the fruit will come Mexico, Chile or California

cilantro: mainly sources from California; east coast cilantro season migrates from FL to NJ; typically not enough and of poor quality although it is one of the ingredients they would really like to source more locally because of its short shelf life

corn: central US; they fry their own chips using a Mission Tortilla (Oldsmar, FL) recipe that Chipotle alone holds the rights to; fried in soy oil

sour cream: small group of farmers working in association with Daisy Brand Sour Cream (Dallas, TX)

cheese: Wisconsin

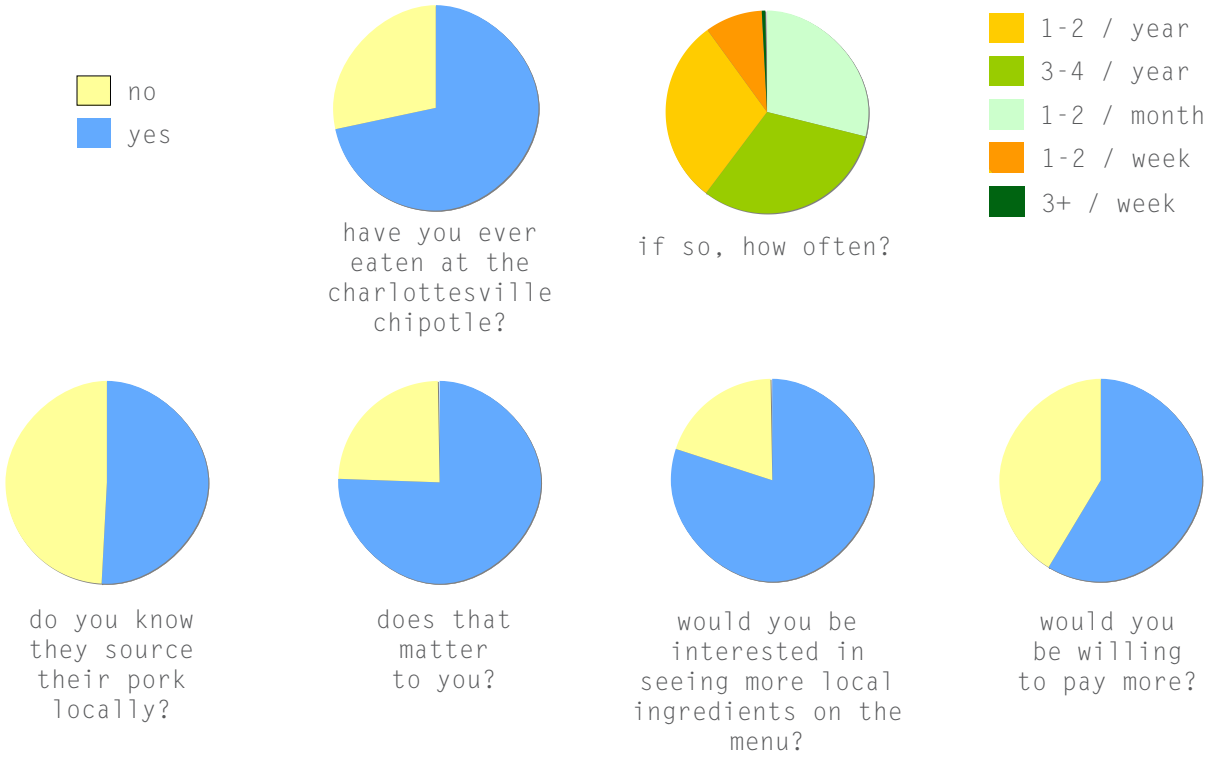
lettuce: California and Arizona; the growing season on the east coast is too short and there is not enough supply, although Chipotle would be willing to buy locally if they had a reliable source, even if it was only for four months of the year during the growing season

tomatoes: California; in a phone conversation with Phil Petrilli, it was made clear that if they had a confident supply, they would source more produce from local farmers even if it were only for part of the year

(source: phone conversation with Phil Petrilli)

Survey Results

In our research, we conducted a survey of 155 Charlottesvillians. Our goal was to ask residents general questions about their experiences eating at Chipotle and their views on the Charlottesville location's decision to source locally. We asked six questions ranging from have you ever eaten at the Charlottesville Chipotle to would you be interested in seeing more local ingredients on the menu and be willing to pay more for them? About 72% of the people surveyed had eaten at the Charlottesville Chipotle and 51% knew a large portion of the pork is local. More than 75% stated their knowledge of locally sourced pork was extremely important. A large portion of those surveyed, about 80%, also expressed they would be interested in seeing more locally sourced ingredients on the menu. Generally, these individuals would also be willing to pay more for locally sourced menu items. The majority of residents we are focusing on eat at the Charlottesville Chipotle about 3-4 times per year.

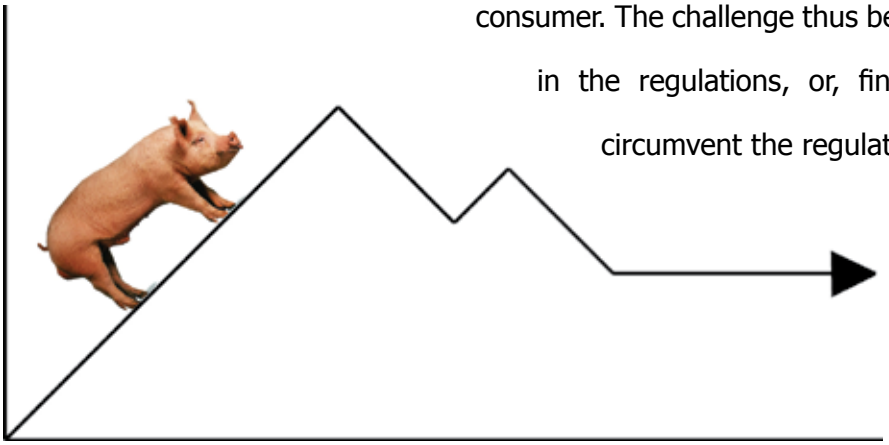


Challenges

There are three overarching challenges facing the Charlottesville community food system. Perhaps the easiest to overcome is the matter of connection. Restaurants, particularly corporate fast-food establishments, are rarely tied to regional or community food and economic systems. Tied instead to corporate structure, the challenge for companies like Chipotle is finding and communicating with local farmers and suppliers. Once these suppliers are identified, another challenge arises: the consistency and volume of supply.

In the case of the partnership between Chipotle and Polyface Farm, supply is not an issue because the farm can provide all the product--i.e. pork--the restaurant requires to serve its clientele. For other farmers and suppliers, though, Chipotle's demand is too great. If other corporate restaurant chains desired to source local food, this supply issue would remain a problem. And especially with meat, supply is determined by the proximity of federally managed inspection and processing facilities.

That is, regulation poses a serious challenge for farmers and restaurants with an interest in local food. Where local food producers may be highly capable of processing their own food, federal food regulations mandate inspection for a wide variety of products. The limited number of inspection facilities require farmers to ship their goods long distances. It costs too. Polyface Farm, for example, pays 1.07 USD per pound of meat for the outlined services. Because no farmer can afford to absorb a cost like this, it must be extended to the distributor (or restaurant) and consumer. The challenge thus becomes encouraging change in the regulations, or, finding solutions that legally circumvent the regulations.



Ideas and Opportunity for Change

Chipotle, as a large and profitable corporate entity, has a unique stance in the Charlottesville community food system. Its relationship with Polyface Farm is indicative of this stance. Chipotle identified Polyface as a potential supplier and worked over a period of seventeen months to incorporate its pork into the restaurant's menu. Not only did this alleviate Chipotle's transportation costs, but it allowed Polyface to sell a greater volume of all cuts of pork and showed a level of commitment to the community unparalleled by other corporate restaurant chains. Essentially, using local pork helped both parties financially and operationally, while establishing a new model of food purchasing and distribution. The opportunity for change is partially fulfilled.

If Chipotle continues to seek out farmers capable of supplying the volume and quality the restaurant demands, they could provide more locally sourced menu options and steadier revenue to the associated farmers and producers. For reasons of efficiency, Chipotle prefers to interact with as few suppliers as possible. In this mode, Chipotle could use its reputation as a builder of positive economic and social relationships to help initiate a cooperative of local farmers and producers. Their experience with Niman Ranch could prove valuable in the Charlottesville area.

Establishing such a cooperative would accomplish three objectives beyond those stated above. First, it would open a channel to local foods that other restaurants and large-scale food programs could access. This would increase demand for local products, perhaps incentivizing the purchase or conversion of land to serve agricultural purposes. (This, of course, has its own long list of community benefits.) If supply, then, could meet that demand, the price of local food--which tends to be higher--would drop, thus making fresher, healthier, and less-traveled food accessible to a broader range of consumers.

If the Charlottesville Chipotle successfully incorporates local food into its menu and further develops the methods for doing so, it sets a valuable precedent for other Chipotle locations as well. Considering the "Food with Integrity" program that permeates Chipotle's corporate structure, it seems plausible that the method used in Charlottesville could adapt well to other locations with similar access to farm fresh food.

Last, it would benefit Chipotle, local farmers, and the community to keep the University a part of this potential integration. Students, and even entire courses, in the Urban Environmental Planning department can dedicate research to causes and processes that enrich the community and provide pragmatic experience. This relationship would reinforce all involved parties' commitment to the Charlottesville community and its food system.

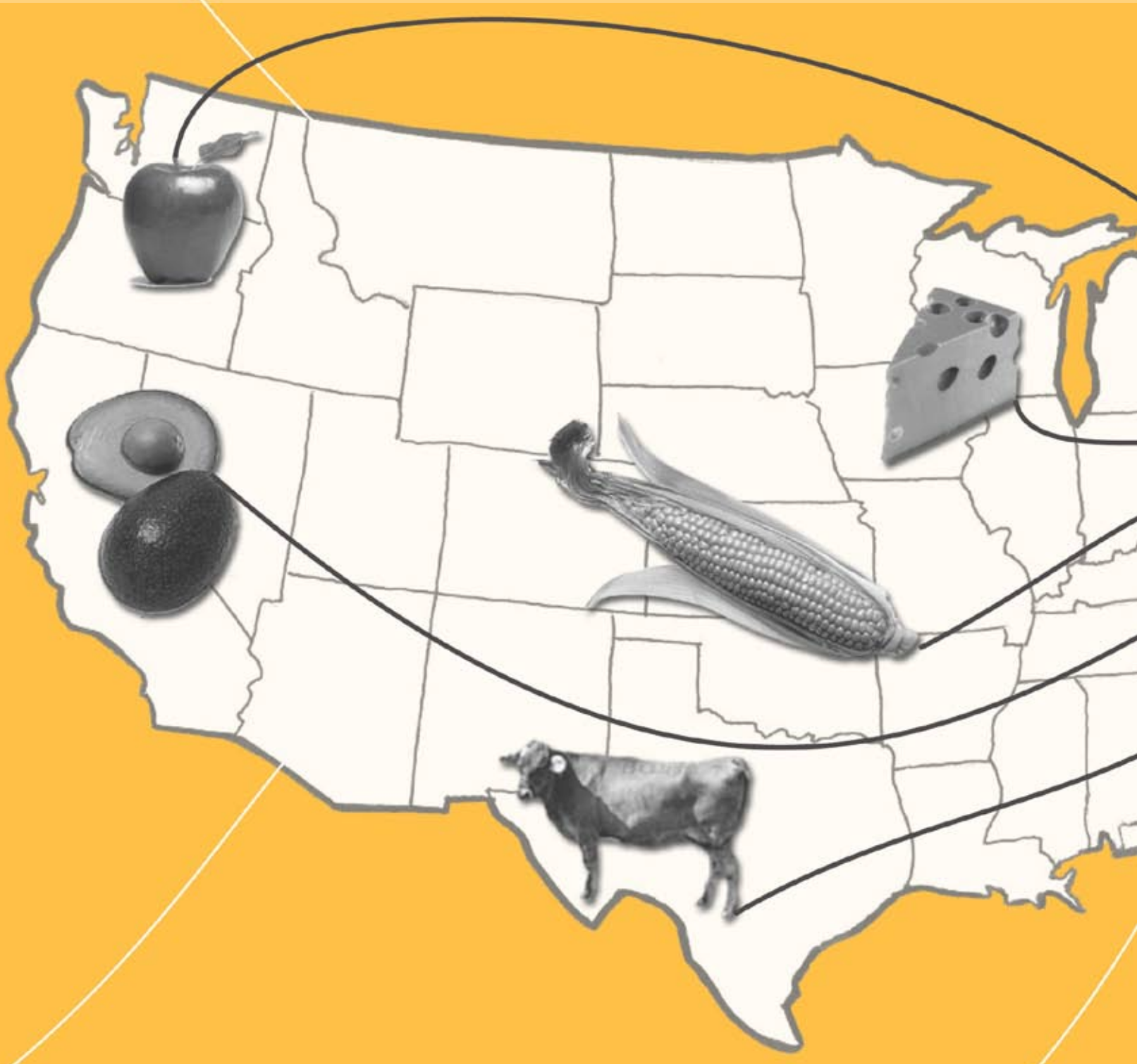
Conclusions

Chipotle defies the image of a corporate restaurant chain. Its perceived commitment to "Food with Integrity" is startling. Its corporate setup partially enables this. Each location seems committed to the corporation's highly ethical agenda, but also operates with great administrative autonomy. At the Charlottesville location, sourcing certain menu items locally is not the only example of ecological consideration. The manager is analyzing the implementation of geothermal power usage along with other green building solutions to further minimize the location's ecological footprint. Overall, Chipotle appears to understand the nuances of sustainable development and is not pursuing this agenda for marketing reasons alone. Accordingly, Chipotle will most likely thrive in Charlottesville and other localities. Their willingness to adapt to a particular region will allow them to eschew the costly externalities of food that many other corporate restaurants cannot avoid. But will Chipotle's success suppress local enterprises?

Earlier this year, Atomic Burrito, a local business that functioned very similarly to Chipotle, closed its doors. While the details surrounding the business' closure are inscrutable, one may infer that Chipotle's success might have drawn business away from the local alternative. This assumption inspires additional questions. Will farmers engage Chipotle as wholeheartedly as Polyface farm? Many farmers have a large investment, both financial and personal, in their land and in their work. Selling, or

wholesaling, their goods to a company like Chipotle or to a cooperative is an unsettling thought. The possibility that a large corporate entity might become abusive is enough to discourage farmers from amping up their production or entering into a new distribution arrangement with others.

The heart of the matter in these potential arrangements is trust. For companies like Chipotle (or any large institution), ensuring and protecting a mutually beneficial business relationship with local farmers and producers is imperative. Chipotle understands this concept, as does Polyface farm. Each characterizes the other as the perfect business partner. It will be interesting to see how this relationship evolves over time. Will it encourage new partnerships? Will the model these two enterprises created inform new business development or shift current agricultural practices? The answers are most likely yes. The more important question is: will establishing locally integrated food-based corporate ventures be a choice, or will the rising costs of food and fuel--they are inseparable--render this a necessity?



University Dining

A Look at How We Fed Ourselves, and How Far We Have Come

Linda Bartusiak
Laura Sparks

Introduction

University Dining is a unique entity in the Charlottesville community. Not only is it a food distributor, but a consumer. Additionally, it is responsible for providing thousands of meals each day to students and staff at the University of Virginia, as well as members of the Charlottesville community. Accordingly, this project set out to analyze the sustainability efforts of UVA Dining, as well as student awareness and concerns around their food consumption. As UVA Dining provides food for twenty-seven locations around the University, the subject of this project was narrowed down to Newcomb dining hall. More so than other locations, Newcomb dining hall caters to the entire University community. It serves students of all years, athletes, faculty, and visitors—all with specific dietary needs. Hence, the facility is required to provide diverse and varied options each day in order to keep their customers satisfied. Moreover, for many students dining halls are their primary source of food. Having such a defined group of people using one food source increases the imperative for food safety and health beyond the level of other public food sources like a restaurant, because one error affects so many people. Thus, this project aimed to investigate the efforts of sustainability by UVA Dining as the importance of environmental awareness and impact becomes increasingly imperative to the future.

Goals of Project

The goals of this project were as follows:

To determine and analyze the food sources for a specific unit at the highly trafficked Newcomb Dining Hall.

To learn and weigh the nutritional efforts and impact of the Dining Hall. This includes gauging students' awareness and interest in their health, as well as the accessibility of health nutritional information of the food.

To ascertain the goals and efforts of UVA dining surrounding sustainability and the local food movement.

To determine if there are any further options and/or opportunities for UVA Dining to improve its sustainability while also acknowledging the challenges that the facility faces.

Subject Profile

UVA Dining

Although it is known as UVA Dining, the company providing food services for the University of Virginia is actually ARAMARK, the international food distributor. The name was simply changed in order to give the system a familiarity and comfortable feel for the consumers. Thus, the company is hired by the University rather than being a cohesive unit within the school's system. Nevertheless, the ARAMARK branch known as UVA Dining is still an integral part of the University of Virginia, and relies on the patronage of the students and faculty for business as well as advice and support. This is evidenced by the statement on aramark.com,

"In FORTUNE magazine's 2008 list of "America's Most Admired Companies," ARAMARK was ranked number one in its industry, consistently ranking since 1998 as one of the top three most admired companies in its industry as evaluated by peers and analysts. ARAMARK also ranked first in its industry in the 2007 FORTUNE 500 survey. ARAMARK seeks to responsibly address issues that matter to its clients, customers, employees and communities by focusing on employee advocacy, environmental stewardship, health and wellness, and community involvement. Headquartered in Philadelphia, ARAMARK has approximately

250,000 employees serving clients in 19 countries."

Thus, despite being a large corporation, ARAMARK is invested in pleasing its clients and keeping up good standards. Accordingly, the company has made an effort to become a part of the University of Virginia community.

Newcomb Hall

Newcomb hall was opened in 1958 as a student recreation facility. It was named after the University's second president, John Lloyd Newcomb, who was known for his interest in the activities of his students. The building's opening was meant "to provide a community gathering place and a center for student activities." Additionally, the building is the home of the Newcomb dining hall, a highly frequented facility due to its convenient central grounds location. Furthermore, the Newcomb dining hall has many offerings in order to please the finicky and diverse appetites of the students and its other clientele. According to www.virginia.edu/newcomb, the dining hall's layout offers myriad options daily;

"Northern Lights includes a pizza buffet, yogurt bar, taco bar, burger bar, and salad bar. Open Monday-Thursday for lunch. Southside Cafe is the food court offering stirfry choices, pastas, deli sandwiches, hot and cold entrees, and Belgian waffle bar. The Black and White Room has a spacious seating area. Pan Geos: The Granary, at the north end of the Black and White Room, presents the best in international vegetarian cooking, with regional recipes featuring potatoes, rice, pilafs, and grains."

With all of these options available, it is interesting to ponder the diverse origins of each ingredient and item, information not readily available to consumers.

Unit of Analysis

The specific unit of food selected to source and analyze consisted of three meal choices from lunch on the north side of Newcomb dining hall, the specialized and prepared meals section known as Northern Lights, on a typical weekday. Lunch is the most trafficked meal at Newcomb, so the analysis of this unit demonstrates a variety of food that would be typically consumed by patrons. The three meals consisted of the following:

Chicken Quesadilla:

Flour tortilla, Chicken, Tomato Salsa, Pepper Jack Cheese, Cheddar Cheese, Shredded Lettuce, Pico de Gallo, Sour Cream.

Chicken and Andouille Gumbo

Andouille sausage, Chicken, Okra, Tomatoes, Red and green pepper, Onions, Garlic, Celery, Cilantro rice.

Hummus Smoked Vegetable Wrap

Pita bread, Hummus, Baba Ganoush, Spinach, Lemon, Pepper, Smoked Vegetables, Toasted pita chips.

All of these descriptions and ingredients are stated as they were listed next to the meal in the dining hall.

Methodology

In order to acquire the information required to complete an adequate analysis of UVA Dining services, we conducted several personal interviews with those involved in the cause and industry. Our methodology timeline went as follows:

Basic research and readings on the UVA Dining, ARAMARK, and Sysco websites in order to familiarize ourselves with our subject of study.

Interview with Brent Beringer, UVA Dining, and Tom Fiammetta, Executive Chef of O-hill dining hall. At this meeting we discussed the goals, procedures of, and challenges facing the UVA Dining System, as well as their efforts toward a more environmentally system.

Interview with Lynda Fanning, UVA Nutritionist. At this meeting we discussed the nutritional efforts of UVA Dining as well as it's influence on students' eating decisions.

Interview with Kendall Singleton, founder and current member of the Green Dining CIO, an on-grounds student initiative to improve the sustainability of the dining halls.

Interview with Dave Wasson, Chef at Newcomb Dining Hall. Mr. Wasson helped us to pick our Unit, as well as gave us the names of the distributors we should call in order to source the selected food items.

Phone calls to various distributors in an effort to source the foods.

Compiling the food miles and map of locations from where the food derived.

Lastly, we discussed the future implications of the dining system and how/if any improvements would be possible.

Food Mile Analysis

In order to trace the miles traveled by the food in our selected unit, we called each of the distributors about their food products. While some of the distributors were very helpful and enthusiastic about the investigation, the larger distributors were reluctant to provide us with any detailed information. Accordingly, some of the products could only be traced to the distribution houses, rather than the specific farms or processing plants. The biggest challenge we faced was when calling Sysco, the distribution company that provides UVA Dining with eighty percent of its food. When we called Sysco, the customer service personnel would not provide us with any source of the foods beyond their distribution house if we did not have a personal account number. They even claimed that the most information they could get when searching with the food identification numbers was their brand. Thus, Sysco was a roadblock in our research. Nevertheless, listed below are the locations of the foods that we could source, at least with as much detail as possible:

Sysco-- Houston, Texas distribution center:
Chicken Breast
12 Inch White Tortillas

Sysco-- Harrisonburg, VA distribution center:
Squash and Zuccini Medly (the smoked vegetables)
Yellow Squash
Rice
Marinara Sauce

County Line Brand Cheese, Con Agra Foods-- Omaha, Nebraska:
Shredded Cheddar and Monterey Jack Cheese

Shenandoah's Pride Dairy-- Springfield, VA:
Sour Cream

Flowers Foods-- Thomasville, GA:
Pita Bread

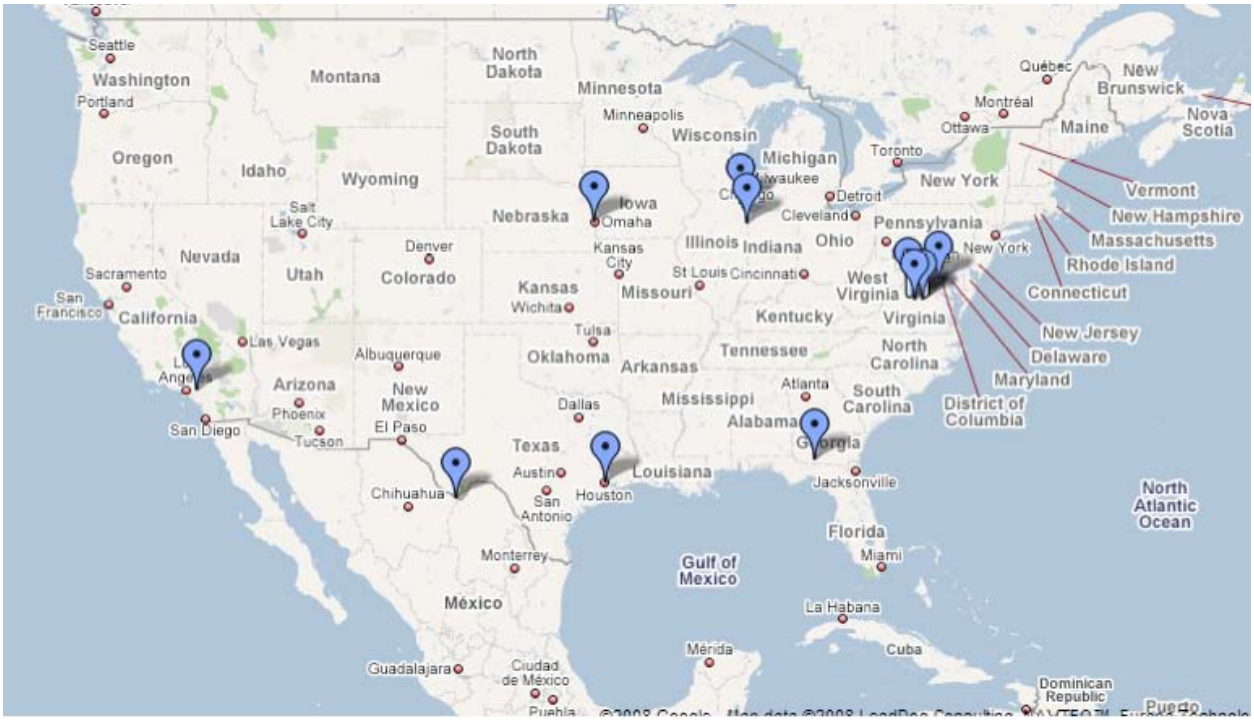
Johnsonville Sausage Inc-- Momence, IL:
Andouille Sausage

Twin Oaks Community Foods-- Louisa, VA:
Tofu

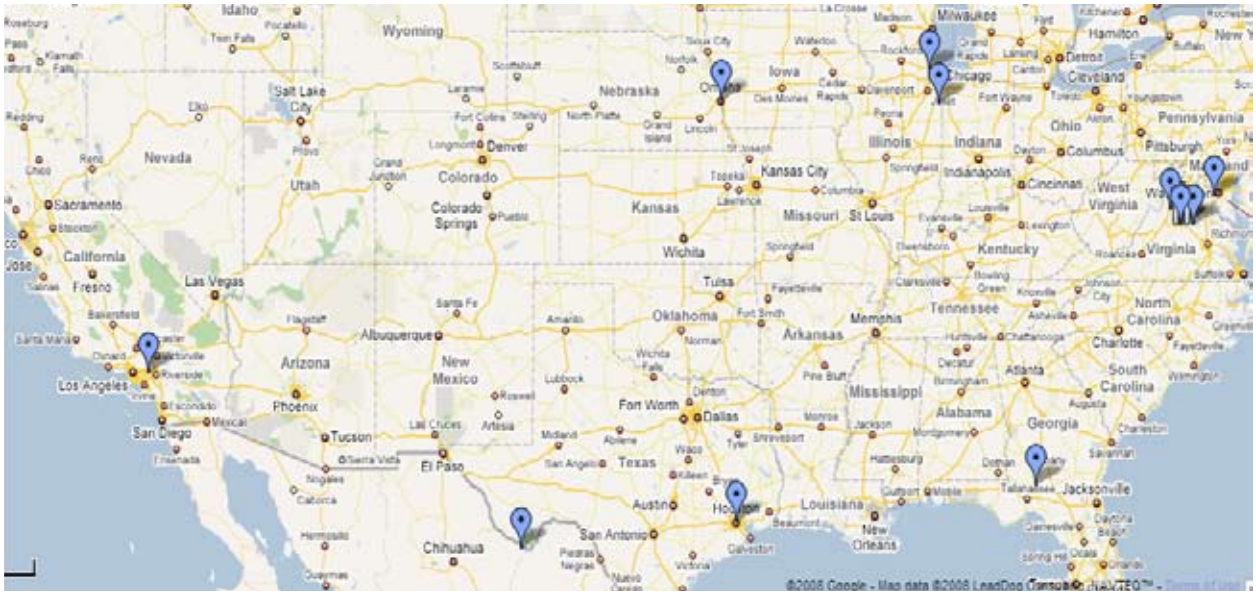
Cavalier Produce, Charlottesville, VA (they gather produce from local farmers when possible, but could not say which specifically because the specific source changes often and they will go out of local bounds if necessary):

Onions
Tomatoes
Cilantro
Spinach

After collecting as much information as possible from the distributors, we determined that the unit we selected of three meal choices collected a total approximate food mileage of 7,700 miles. Nevertheless, due to our running into difficulties with Sysco, the mileage is not as accurate as desired. The following is a map of the distribution centers and sources of the ingredients:



A more detailed version of the map:



Despite the fact that it appears the map is localized, at least as far as the country of origin is concerned, we again have to take into consideration that Sysco did not provide us with detailed information. Accordingly, it is safe to assume that many of the foods came from international locations, especially when out of season in the United States, despite their lack of placement on the map.

Findings, Insights, and Lessons for the Food System

Interview with Brent Beringer and Tom Fiammetta

Within this interview, we discussed the position and efforts of UVA Dining when it comes to the sustainability of the system. According to Mr. Beringer, his definition of local is within 250 miles. Nevertheless, the dining system still makes an effort to collect food from as locally as possible, even if this means defining Florida, or even Mexico, as a local source. Per ARAMARK standards, if a food can be sourced from a local location at a comparable price, the local option is required. Yet, even with this rule in place, it is impossible for UVA Dining to know for sure the source of the food. Currently, the company makes most efforts to source locally with their dairy products, eggs, tofu, and produce. Where produce is concerned, however, there are several limits in place. As the dining hall must provide a variety of food options for the students,

they cannot rely on only seasonal fruits and vegetables from the area. Virginia has a substantial winter, and hence cannot provide the produce required by the dining hall year-round. Accordingly, they are required to source from exterior sources in order to satisfy the needs of its consumers.

Even with their efforts of purchasing local foods, UVA Dining still acquires eighty percent of its food from Sysco. Accordingly, it is nearly impossible to determine the exact source of each product. Nevertheless, it is far more convenient and efficient for UVA Dining to work primarily through one dealer. As they must serve so many people each day, they must receive daily food shipments. Although gathering all of their food from local farmers would be ideal, it is not feasible that all of the local trucks would/ could come make deliveries each day. Essentially, from this meeting it was clear that an effort is made every day toward making UVA Dining more sustainable; however, there is still a long way to go before the system is completely environmentally efficient—if it even can be.

Interview with Lynda Fanning

UVA Dining Services has twenty-seven different locations, and each fills a different nutritional niche for the UVA community. Newcomb dining hall is a meal location that serves primarily undergraduate students. Its location on central grounds makes it popular with all years of students, and its proximity to classroom buildings makes it a popular lunch spot.

The nutrition content of the food served at the UVA dining halls is among the top priorities of Dining Services. This dictates not only what foods they like to serve, must also what foods they will not serve and what foods they must serve. It also dictates how food is prepare. To help both students and staff deal with all the complex nutritional issues that arise when you are the main or sole source of food for several thousand young adults, UVA Dining has a full time Ph.D. dietatian, Paula Caravati, on staff to plan meals and work with students.

One thing Paula does is to give individualized counseling to students with specific nutritional needs. This includes diabetics, vegetarians, students with food allergies, students with nutritional deficiencies, students with eating disorders, and others. There is a separate nutritionist on staff to deal with athletes. Paula can find different foods that students should or should not be eating, and develop a comprehensive meal

all times, largely produce. Furthermore, because of the liability that comes along with feeding such a large body of people, ARAMARK requires that each distributor it works with possess at least five million in liability insurance. Quite simply, some farmers cannot afford such an expense. Moreover, ARAMARK pays Sysco on a set schedule, and many local farmers need to be paid for their products as they are sold. Essentially, it is beneficial and practical, especially from a business and monetary perspective, for UVA Dining to involve a large distributor for at least a portion of their required products.

Ideas and Opportunities for Change

One way to increase the amount they can charge is to show there is a strong consumer demand for something that is a little more expensive. For example, at the UVA Dining Services-run Fine Arts Café, the menu consists almost entirely of local and organic products. Pricing is about 25% higher than the cost of comparable products at other dining café locations, but there has been a strong demonstration of consumer demand and willingness to pay at this location that allows prices to go higher. Following this logic, a survey being conducted currently asks all dining customers about their local, organic, and sustainable food preferences, and examines to what degree they are willing to pay more for this. UVA Dining can then use this information in the future to determine what changes they can make to their food sourcing.

Additionally, if the University were to desire to source more locally, the economy would need to

adjust in order to account for the change in demand. Thus, the University could release a timeline of when and how they plan to increase local consumption. The economy would then adjust accordingly, allowing for the successful infiltration of local foods into the dining hall. Furthermore, continued interaction with dedicated students is crucial. UVA Dining exists largely to feed the students of the University of Virginia, and as long as they are interested in the cause, the environmental issues and sustainability concerns will remain on the table for discussion. If the interest persists, UVA Dining could look into the possibility of hiring a full time Green Dining coordinator. This was done at Duke University, as it was recognized that investigating possible improvements to the sustainability of dining could easily be a permanent and full time responsibility.

Conclusions

After completing this investigation, it is clear that UVA Dining is making an admirable effort to make their practices more sustainable. Although there is still work that can be done, the fact that the organization is aware of the issues and is making an effort by working with students demonstrates a positive outlook for the future of the dining facilities at the University of Virginia.

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www.cavalierproduce.com
www.flowersfoods.com
www.twinoaks.org
www.virginia.edu/newcomb
http://www.aramark.com
http://www.duke.edu/sustainability/2006-09-19tavey.html
www.campusdish.com
www.johnsonville.com

recommendation plan that will ensure that students get the proper balance of nutrition. For students with a more generalized interest in healthy eating, Paula also conducts nutrition classes on how to plan and eat a healthy and balanced diet. Finally, Paula is also responsible for the published nutrition information about dining hall food. This information is available online, as well as on electronic kiosks in the dining halls, so that students can get real time information about the foods they are planning to eat.

UVA Dining and Paula are very careful about their nutritional outreach approach to students. They do not seek out clients, they serve the clients who come to them. While the nutrition information is readily available, it is not right next to the foods being served. The reason they are so careful about their nutritional outreach efforts is the prevalence of eating disorders among college students. Approximately 3% of students at UVA have full blown eating disorders, and an amazing 60% of undergraduate students have "disordered eating," which can often turn into a full scale eating disorder. Paula works with those who comes to her, but professional wisdom has decided that if you push nutrition on students too heavily, you can increase the chance that a student will develop or worsen an eating disorder.

For many foods served at Newcomb Dining Hall, the nutrition comes in the way it is prepared. UVA Dining purchases very few prepared foods, so most of the food that is served in the dining halls is prepared daily from scratch. Prepared foods are rarely as healthy as fresh or from scratch foods, so this practice alone adds a lot to the nutritional content of the food in Newcomb Dining Hall. UVA Dining also recently went through the process of removing all oils with transfats from their cooking. Transfats are the least healthy type of fat, and have been proved to cause and exacerbate heart conditions and high blood pressure.

Green Dining

As learned through the interview with Kendall Singleton and the Green Dining website:

According to the Green Dining website , UVA Dining actively promotes sustainability by:

- Seeing how its actions and plans fit in with UVA's vision for a sustainable future
- Maintaining certification from the Virginia Department of Environmental Quality in the Virginia Environmental Excellence Program through its Dining operation's environmental action plan
- Offering 10.4% local food (grown within a 250 mile radius of UVA) in its dining halls and convenience stores, including:
    - o salsa from The Farm at Red Hill

    - tofu from Twin Oaks
- Offering a wide selection of organic foods (more than 45 items) at The Crossroads
- Promoting the new Fine Arts Café, that features many natural, local, organic, and fairly traded items
- Making official its complete transition from buying conventional shelled eggs to buying ones that are cage-free
- Developing a student and faculty run garden in Hereford Residential College
- Surveying students to assess the existing demand for sustainable foods
- Collaborating with interested student groups, faculty, and staff in the creation of sustainable dining guidelines for UVA
- Sponsoring a Local Harvest Theme Meal in several of its dining locations (as a collaborative effort with UVA Student Council's Environmental Sustainability Committee)
- Participating in recycling in customer and service areas
- Collecting and recycling 100% of our waste oil
- Using bio-diesel in all Dining vehicles
- Installing pulping machines at all residential dining rooms to reduce the landfill burden
- Researching how other colleges and universities have been successful in their procurement of sustainable foods
- Purchasing Green To-Go containers that are are made of environmentally friendly substitutes for plastic or styrofoam. These new products are created from health conscious natural fibers such as grass, reed plasma and sugar cane. Though they are biodegradable when composted with soil and water, they can with stand food at both hot and cold temperatures. These new to-go containers are recyclable, natural, non-toxic, biodegradable, water proof, oil-proof and microwaveable.

University Dining has greatly benefited from a student founded organization known as Green Dining. These students brought the importance of making the practices of the dining services more sustainable into the eyes of the university at large. These students currently meet with interested Dining personnel, including Brent Beringer, as often as possible in order to discuss food issues, debates, as well as opportunities for the future of the system. Currently, they define dining sustainability as, "sustainable practices foster the health of the environment in which we live, produce, and consume our food." Additionally, they discuss and work to decide the benefits and importance or various food movements or practices. For example, at a meeting this past spring, the group produces the following lists while conferring:

Why local?

1. Reduce CO2 emissions
2. Foster a greater sense of Charlottesville community
3. Maintain biodiversity
4. Improve food quality and flavor
5. Keep dollars in our local economy

6. Ensure food security

Why seasonal? (aka 'featuring seasonality')

1. CO2 emissions
2. Growing efficiency
3. Nutrition / good taste
4. Regional appreciation of cultural heritage

Why organic practices?

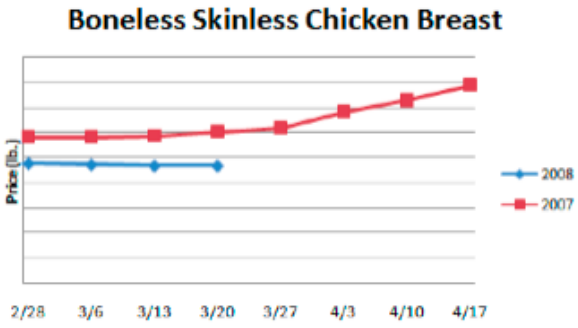
1. Health benefits -- pesticide free, nutritious
2. Environmental benefits -- healthy soil, less contaminated run-off
3. Ethical treatment of animals

By taking the time to go over these important issues along with the dining officials, the members of Green Dining have demonstrated that at least part of the student body cares about the source and environmental impact of their food services. As a result of their extensive work, "UVA Dining received state certification for its commitment to environmental management. UVA Dining is the first higher education dining operation to have reached the Environmental Enterprise (E2) level in the Virginia Environmental Excellence Program (VEEP)."

Challenges facing this part of the food system

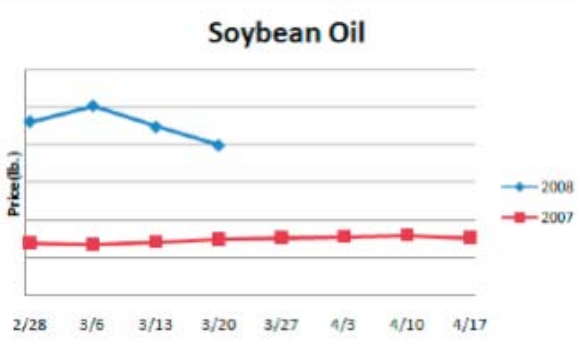
One constraint on the type of foods UVA can serve comes from the monetary restrictions in place. Food prices in general are rising due to increases in energy prices. UVA Dining only has a set amount of money to try to purchase all the food they need due to set dining hall prices. While Dining Services can recommend a price, the Board of Visitors is ultimately responsible for setting the prices of all student meal plans. The BOV is only willing to set prices so high, because too much of an increase will provoke a reaction from students and their parents. This price sensitivity of their average consumer is a constraint on what they can afford to pay for food. Accordingly, the following graphs demonstrate the current market trends found on Sysco.com:

> Poultry Report:
> The 6 week moving average for broiler egg sets is now just 1.8% larger than a year ago, the smallest gain since April 07. Chicken output expansion compared to last year should lessen this summer.



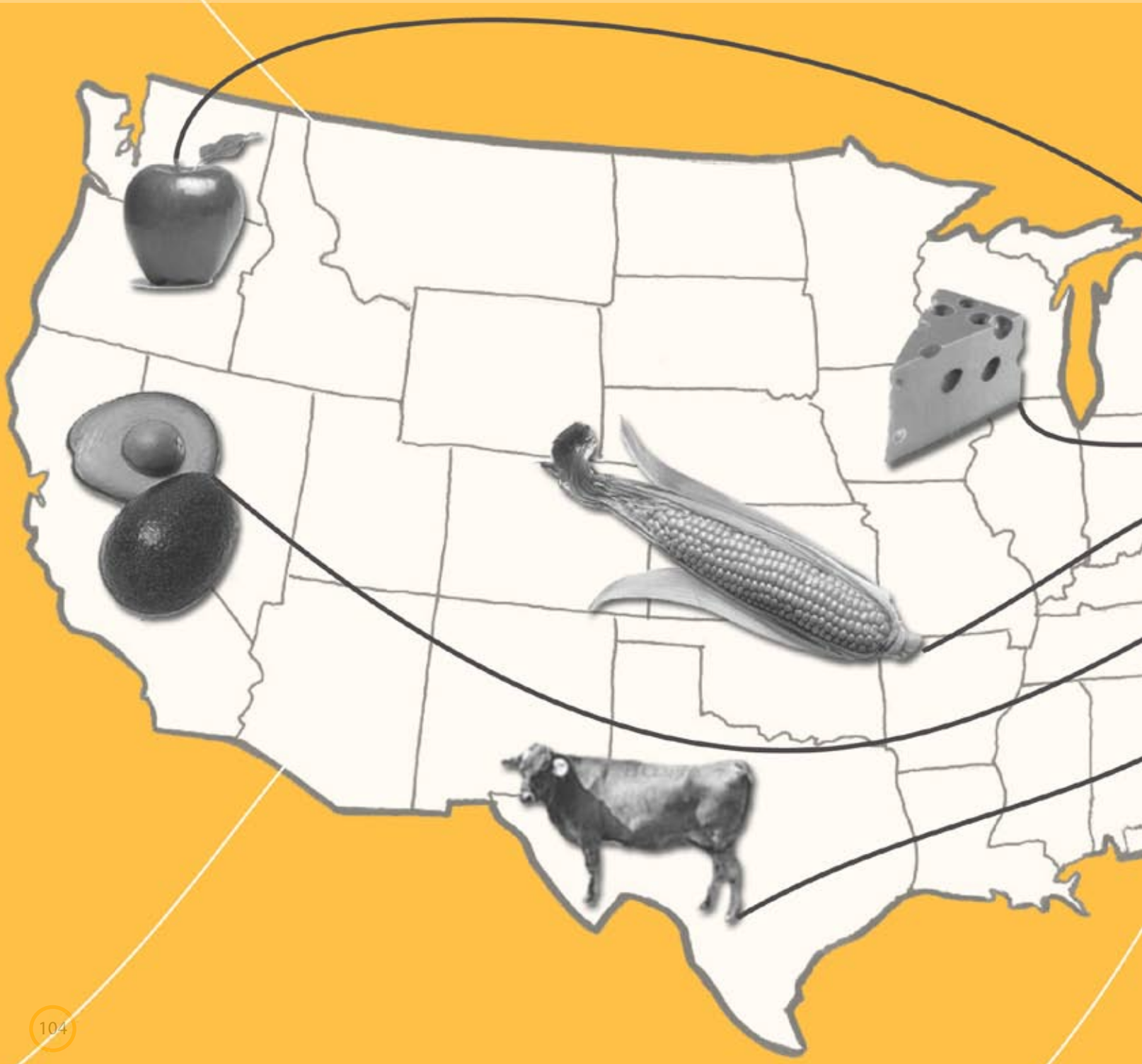
The chicken breast markets typically begin an upward course in April that carries into July.

Oil and Grains Report:
Grain prices are retreating this week due in part to world financial market uncertainties. Volatile grain prices are anticipated this spring.



Another challenge posed to the UVA Dining system is the sheer size of their consumer base. As discussed with Brent Beringer, if UVA Dining were to attempt to immediately start sourcing all of their foods locally, they would entirely exhaust the resources of the area. Due to the number of people that the dining facilities must serve on a daily basis, finding all of their resources within a 250-mile radius would leave no local products left for other consumers. The city market would lack all produce and local CSAs would become entirely wiped out by the demands of the university. Thus, while entire locally sources foods may seem ideal, it is not a realistic option at this point in time.

Additionally, due to the unique nutritional needs of the university, as well as specific requirements of ARAMARK, University Dining essentially needs to employ a large food distributor. First and foremost, they need to keep many more items available than are locally obtainable year-round. Students need as many healthy food options as possible because they are picky and choosy about what they consume. Without involving a large distributor UVA Dining would not be able to afford the foods that they need to stock at



Jefferson Area Board for Aging

Challenges and Opportunities for Sourcing Local Food for a Specialized Population

Megan Bucknum
Regine Kennedy

Profile

The Jefferson Area Board for Aging (JABA) was founded in 1975 and serves clients throughout central Virginia. Its mission is:

> "… to add dignity, security, independence and fulfillment to the lives of older adults and their families."

JABA provides services ranging from case management to health insurance counseling and health services for clients and has eight senior centers, three adult day care centers and an assisted living facility. The meals that JABA provides, through its centers and home-delivered meals service, are only a portion of the total services offered by this non-profit organization. This project focuses on a single meal served to clients at the adult day care at the Hillsdale facility in Charlottesville, VA. Judy Berger, the Community Nutrition Manager, described the selected meal (oven-fried chicken, string beans, pears, macaroni & cheese and low-fat milk) as a client "favorite". In addition to providing approximately forty meals daily for the adult day care clients, the Hillsdale facility prepares over two hundred meals for home delivery. JABA is committed to incorporating fresh, local food into its menus. In early 2008, JABA established a Community Food System Project Advisory Board made up of community members equally concerned with using local food and able to assist JABA with it goals to varying degrees. Board members include several farmers, a local legislator, individuals from different Schools at the University of Virginia and other community organizations. JABA articulates the steps required to integrate local produce into its menus including menu items that reflect produce seasonality, use of local food for 20% of the menu in 2008 and purchasing extra fresh food during peak growing seasons and storing it through freezing or canning. (See Appendix A).

JABA
Services for Senior Health and Independence

The three primary goals of this project are to determine the environmental costs of a specific meal served at JABA's Hillsdale facility; to increase the percentage of local food used in each meal served; and to provide concrete findings that can be used to take advantage of available funding grants.

Determining the environmental costs of the current and local food networks is an important factor to gauge the total costs of these two systems. Although environmental costs, such as food miles, are not actually reflected in the price JABA pays for its food, they are born by the greater community and environment in terms of reduced air and water quality, loss of habitat, etc.

JABA currently has a Community Food System Project Advisory Board made up of community members who can assist them in achieving their goal of 20% of the meal sourced locally in 2008 . JABA looks forward to achieving a higher percentage in subsequent years. Members of the Board include local farmers, legislators and other community stakeholders. Our project goal supports JABA's local food use goal and seeks concrete measures to implement a greater percentage of local food used in the menus they serve to their clients.

Grants available for local, state and federal food programs depend on concrete numbers and figures to determine the viability and feasibility of the projects that they support. Thus using the research and findings for possible funding options was important to this project. Truly implementing a new food system can have high costs at the beginning and ongoing costs if additional labor is required to maintain the new system.

Methods

In our initial interview with Ms. Berger, we toured the facility to gain an understanding of the current method JABA uses to source food for their facility. This information was used to analyze the possibility of accessing affordable, local, fresh food that could positively affect the overall health and nutrition of the clients they serve. Additionally, we attended two meetings of JABA's Community Food System Project Advisory Board to gain a better understanding of the community connections they were making and the level of support the participants could offer to the project's success. Finally, we interviewed staff and clients at the Hillsdale

facility to assess their understanding and commitment to using local, fresh food in the meals served.

A favorite client meal was selected (oven-fried chicken, string beans, pears, macaroni & cheese and low-fat milk) from the menu at the Hillsdale facility. For the project, a quantity of forty meals was used because the facility prepares approximately forty meals daily. The number of meals served increases to approximately sixty meals in winter months and around the holidays.

The selected meal was broken down into individual items and multiplied to get item quantities for forty total meals as follows:

			Total for			
Selected Menu:	**Amt/meal**	**Item**	**40**	**Meals**	**Conversion Total**	
Oven Fried Chicken	2 oz.	frozen	80	oz	5	Lbs
Macaroni & Cheese	1 Cup	homemade	40	Cups		
10 Cup yield						
elbow macaroni	8	oz	32	oz	2	Lbs
cheese	2.25	Cups	9	Cups	3.5	Lbs
milk	2	Cups	8	Cups	0.5	Gallons
butter	2	Tbls	8	Tbls	0.25	Lbs
flour	2	Tbls	8	Tbls	0.25	Lbs
String Beans	0.75	Cup frozen	30	Cups	11.25	Lbs
Pears	0.75	Cup canned	30	Cups	7.5	Quarts
Low Fat Milk	1	Cup	40	Cups	2.5	Gallons

The sources of the menu items were researched and appropriate food miles were allocated to each item based on its origin. The selected meal was analyzed two ways: first, by the current method of purchasing from US Foodservice and second, by finding local providers for each menu item. Both analyses included 'Food Mile Costs', which were quantified at 48.5¢ per mile based on the 2007 IRS Standard Mileage Rate for Business . To clarify, 'Food Mile Costs' are not actual costs being paid by JABA, but are an attempt to quantify the environmental cost of the transportation component of food distribution. Corresponding carbon offset costs were also used and calculated at a rate of $1.63 per 1,000 miles traveled. Although these two costs are extrapolated from "theoretical costs," they represent some of the hidden costs of transporting food.

Current Food Supplier Network:

In JABA's current, distributor-based method of food sourcing, the menu items have a variety of origin sources from all over the country. The process of gathering this information was difficult and reflects of the lack of transparency in large, corporate food distributorships.

JABA is a client of US Foodservice, a company who buys from other companies around the country primarily based on cost, not distance from distribution facilities. The US Foodservice distribution center that services Charlottesville is in Roanoke, VA; a distance of 122 miles from JABA's Hillsdale facility. The US Foodservice Corporation is based in Columbia, MA, but each subsidiary location does its own ordering and distributing for its clients. Considering this, the distance from the distributor to JABA is not very far and would make a relatively condensed food system if all the food was actually coming from the Roanoke/ Salem, VA area. However, this distribution location serves only as a "pit stop" for the food, and is not the location of growing regions or processing plants.

Photo Courtesy of wilipedia.org

Local Supplier Network:

For the purpose of this project, 'local' was defined as 'within Virginia', preferably within 100 miles of the Hillsdale facility. Several sources were used to find local food suppliers including participants in JABA's Community Food System Advisory Board, the 'Buy Fresh Buy Local' guide and internet searches. When suppliers were difficult to find using these methods, other suppliers made suggestions, which attests to the local food

supplier network already in place and the ways in which they support each other as well as other community members (e.g. JABA and graduate students) working on community food projects. Potential suppliers were contacted via email or phone and prices used were quoted from written or verbal correspondence or published, on-line price lists. Food miles were determined from the actual postal address of the supplier to the JABA Hillsdale facility in Charlottesville.

Finally, the two methods were compared in terms of total cost.

Findings

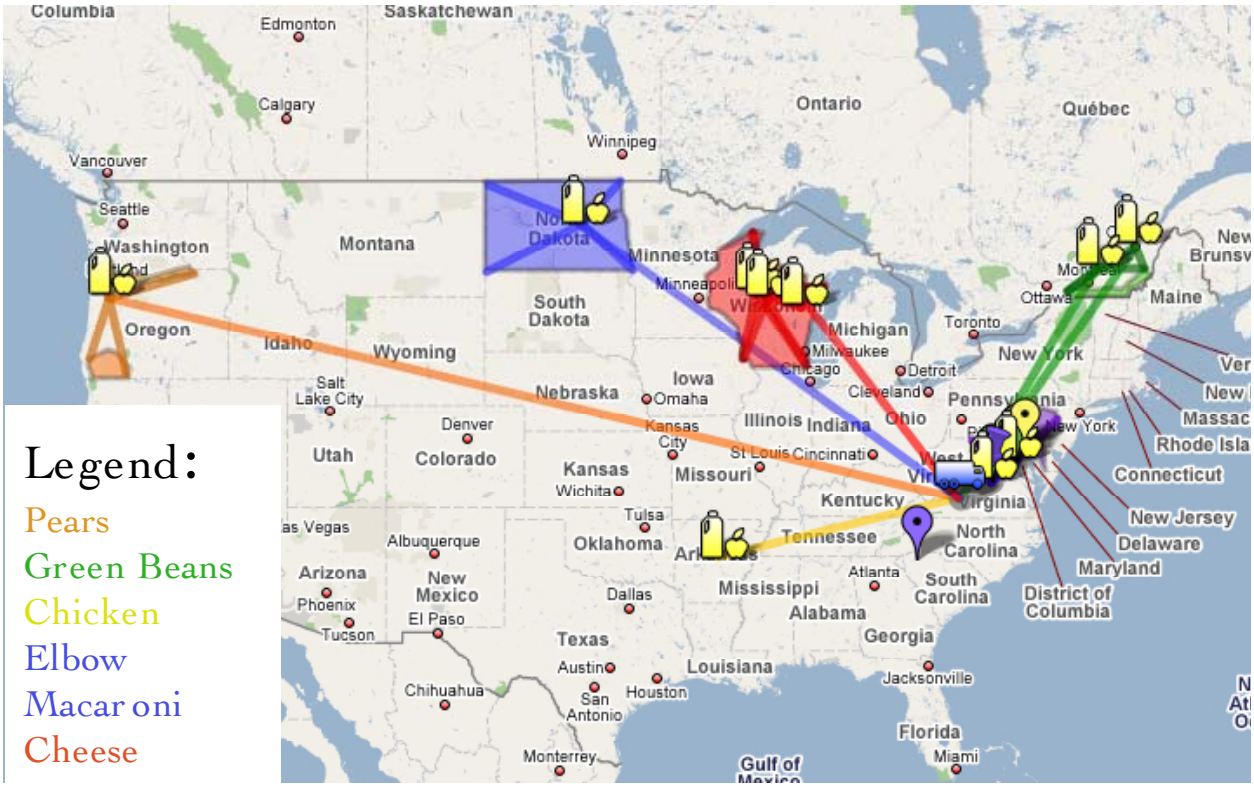
Comparison of the two food networks yielded interesting results. Although the current, distributor driven food system yields less expensive food items than the local, direct supplier system, the difference in food miles is significant.

	Current		Local	
		Environmental		Environmental
Food Item	**Food Costs**	**Food Miles Cost**	**Food Costs**	**Food Miles Cost**
Chicken	$34.77	$533.35	$25.50	$24.25
elbow macaroni	$11.57	$635.00	$7.98	$1.94
cheese	$10.81	$863.72	$30.63	$130.95
*milk	$19.60	(see below)	$19.60	(see below)
*butter				
flour			$0.23	$27.65
String Beans	$6.77	$540.76	$33.75	$6.31
Pears	$20.00	$1,338.72	$20.00	$38.80
*Low Fat Milk	$10.00	$208.22	$10.00	$208.22
Sub-Total	*$113.52*	*$4,119.76*	*$147.69*	*$438.11*
TOTAL	**$4,233.28**		**$585.80**	

Current Food Supplier Network:

Findings for the current food supplier network reflect a typical distribution network that spans many states, countries and regions. The findings extend through the United States and into Canada and are explained in detail on the following pages. Each menu item is evaluated by distance using charts as well as a map.

The following map displays the routes that menu items take to reach JABA's Hillsdale facility in Charlottesville. Each menu item is designated by the color shown on the legend, each processing or distribution plant is labeled with a yellow placemarker, distances are lines made with the color of the menu item and each growing region is designated by a geometric shape of the same color.



Each menu item is further analyzed by distance, with the following charts showing the cost per menu item for forty meals, as well as the extrapolated environmental costs. The charts show that the total costs to serve the selected menu to forty clients at JABA's Hillsdale Center is $113.52, which is the actual price JABA pays each time this meal is served. The environmental cost of this meal, shown in the 'Environmental Food Miles Cost' column, is calculated by multiplying the total food miles by 48.5¢/mile and totals $4025.84. It is important to understand that this number is a theoretical cost born by the environment generally, and not an actual price that JABA is absorbing each time they serve this meal. The cost to offset the carbon generated from transportation of the food items for this meal is calculated by adding $1.63 for every 1,000 miles. The total miles are 8302, therefore the carbon-offset cost for these forty meals is $13.53. Assigning a currency value to specific environmental degradation generated by this meal helps to measure the overall impact this method of long distance food distribution system has on environmental quality.

Current Supplier	Selected Menu	Amt/ 40 Meals		Unit Cost	Food Costs
US Foodservice	Oven Fried Chicken	5	Lbs	$34.77/48 (4 oz) pc	$34.77
	Macaroni & Cheese				
US Foodservice	elbow macaroni	2	Lbs	$29.00/5 Lbs	$11.57
US Foodservice	cheese	3.5	Lbs	$15.44/5 Lbs	$10.81
Shenandoah's Pride	milk	0.5	Gallons	$0.49/unit	$19.60
US Foodservice	String Beans	11.25	Lbs	$13.53/20 Lbs	$6.77
US Foodservice	Pears	7.5	Quarts	$5.00/10 Lb box	$20.00
Shenandoah's Pride	Low Fat Milk	2.5	Gallons	$4.00/Gallon	$10.00
				TOTAL	**$113.52**

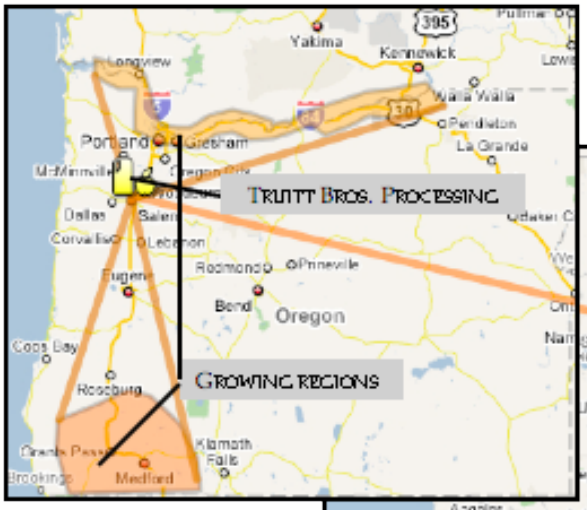
Menu Item	US Foodservice Supplier Location	Miles from JABA		Environmental Food Miles Cost	Combined Food Costs and Food Miles Costs
Chicken	Arkansas	1028	miles	$498.58	$533.35
Cheese	Wisconsin	1287	miles	$624.20	$635.00
Elbow Macaroni	North Dakota	1757	miles	$852.15	$863.72
Green Beans	Quebec, Canada	1101	miles	$533.99	$540.76
Pears	Oregon	2719	miles	$1,318.72	$1,338.72
Milk	Maryland & Pennsylvania	408.7	miles	$198.22	$208.22
	TOTAL MILES	8302	**TOTAL**	**$4,025.84**	**$4,119.76**

Pears:

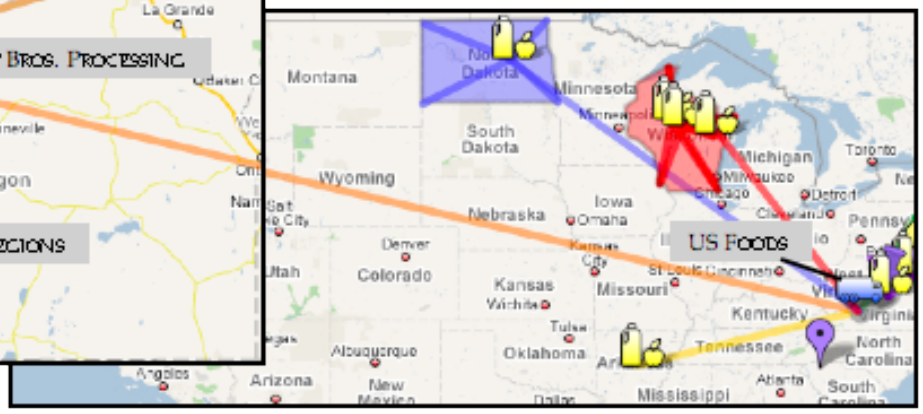
The Pears used in the meal were most likely grown in two different regions in Oregon; one along the Washington border along the Willamette River and the other in the more southern region in the Rogue River Valley near the city of Medford, OR. These pears were processed, packaged and distributed by the Truitt Brothers Co. in Salem, Oregon. They sell directly to US Foodservice and ship to the distribution center in Roanoke, which later delivers them to JABA.

	Growing Region to Processor (mi)	Processor to Distributor	Processor/Distributor to US Foods, Roanoke (mi)	US Foods to JABA (mi)	Total (mi)
Pears					
Growing Region #1	302.6	0	2267.28	122	2691.88
Growing Region #2	356.92	0	2267.28	122	2746.2
Average Distance (mi)	2719.04				

PEARS FROM GROWING REGION TO TRUITT BROTHERS PROCESSING



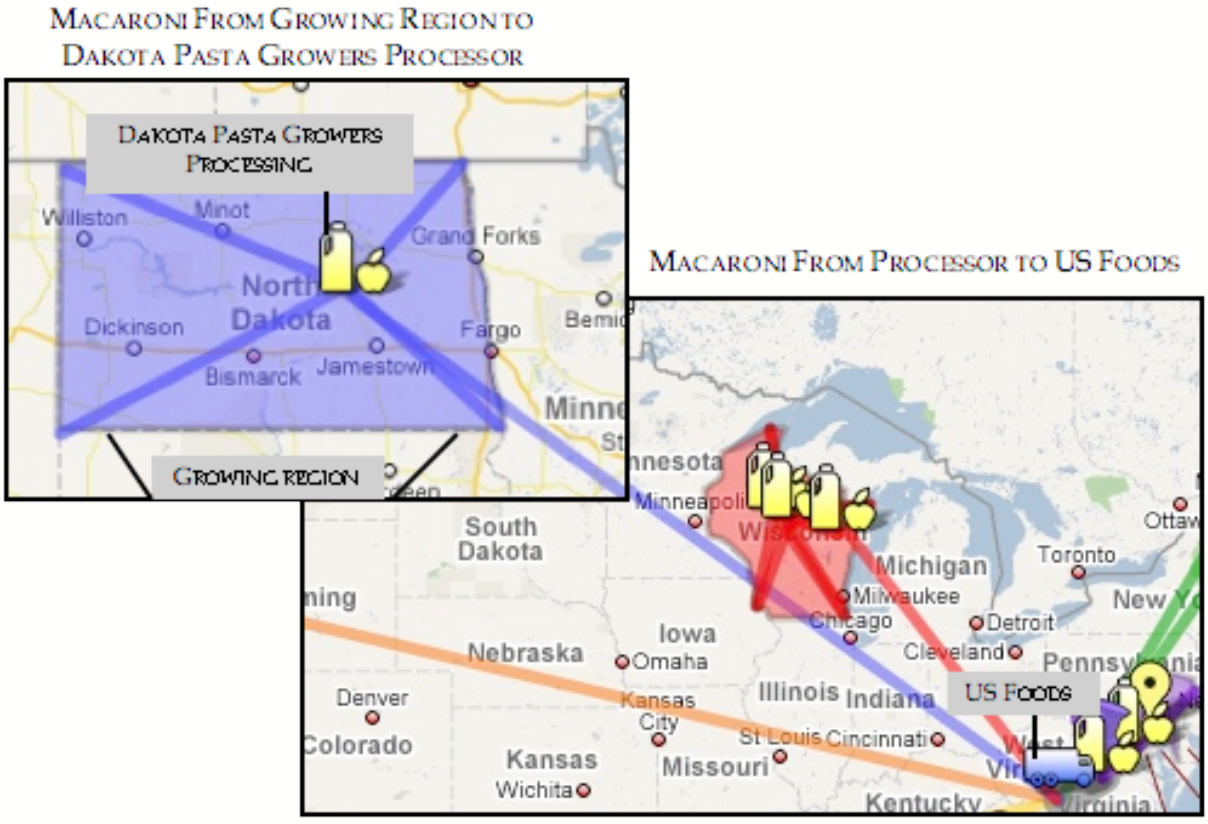
PEARS FROM TRUITT BROTHERS TO US FOODS



Elbow Macaroni:

The elbow macaroni pasta for the macaroni and cheese component of the meal is made by Dakota Growers Pasta Co. in North Dakota. They try to buy wheat to make the pasta from local farmers in the North Dakota region. The pasta gets processed, packaged and distributed from their location in Carrington, North Dakota. It seems as if they are one of the biggest pasta suppliers for US Foodservice in general.

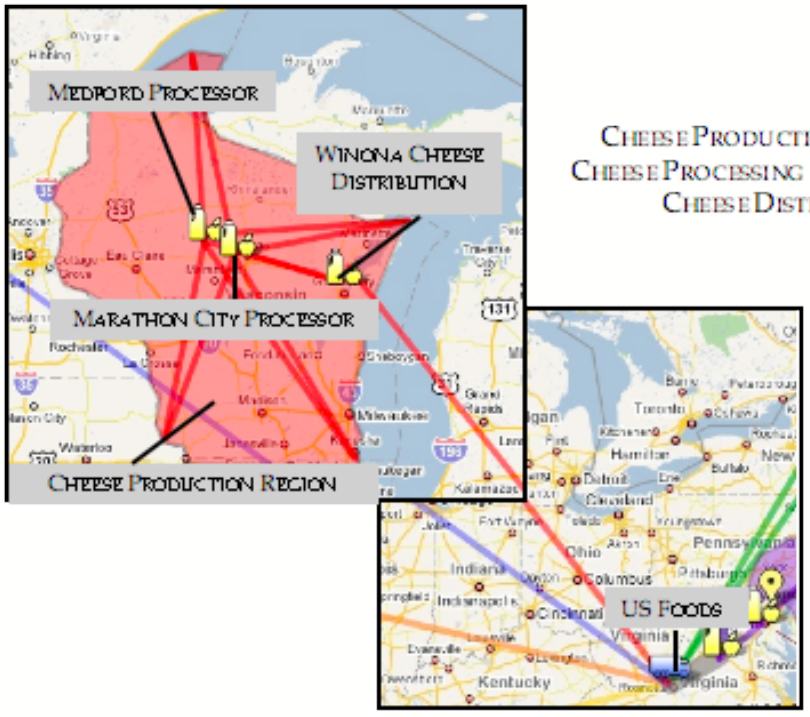
	Growing Region to Processor (mi)	Processor to Distributor	Processor/ Distributor to US Foods, Roanoke (mi)	US Foods to JABA (mi)	Total (mi)
Elbow Macaroni					
growing region farthest northwestern distance	240	0	1,437	122	1799
growing region farthest northeastern distance	130	0	1,437	122	1689
growing region farthest southeastern distance	164	0	1,437	122	1723
growing region farthest southwestern distance	258	0	1,437	122	1817
Average Distance (mi)	1757				



Cheese:

Cheese that is used to make the macaroni and cheese portion of the meal is purchased from Winona Cheese by US Foodservice. Winona Cheese is a company that buys from Marathon Cheese, who processes it and packages it for distribution. Marathon Cheese has two different processing and packing plants; one in Marathon City, Wisconsin and one in Medford, Wisconsin. The cheese most likely went through one of these facilities before it went through Winona Cheese's warehouse in Green Bay, Wisconsin. The cheese is then shipped out of Green Bay to US Foodservice in Roanoke, before reaching JABA in Charlottesville.

	Growing Region to Processor (mi)	Processor to Distributor	Processor/ Distributor to US Foods, Roanoke (mi)	US Foods to JABA (mi)	Total (mi)
Cheese					
processor #1 (Marathon)					
growing region farthest northwestern distance	167.04	103	871	122	1263.04
growing region farthest northeastern distance	145.04	103	871	122	1241.04
growing region farthest southeastern distance	195.75	103	871	122	1291.75
growing region farthest southwestern distance	163.77	103	871	122	1259.77
processor #2 (Medford)					
growing region farthest northwestern distance	150.42	142	871	122	1285.42
growing region farthest northeastern distance	169.27	142	871	122	1304.27
growing region farthest southeastern distance	219.17	142	871	122	1354.17
growing region farthest southwestern distance	165.46	142	871	122	1300.46
Average Distance (mi)	1,287.49				



CHEESE PRODUCTION REGION TO CHEESE PROCESSING AND PACKING TO CHEESE DISTRIBUTION

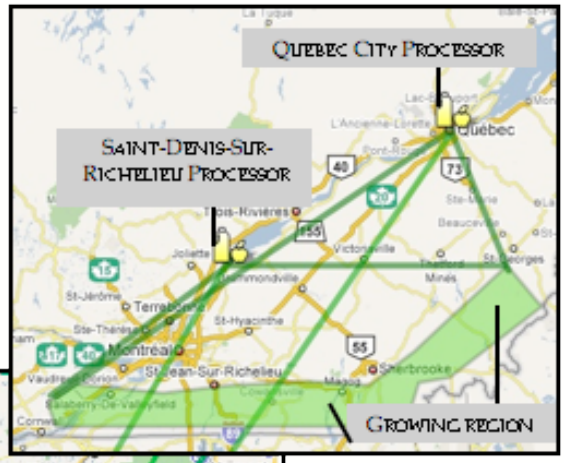
CHEESE DISTRIBUTION TO US FOODS

Green Beans:

The Green Beans were purchased from Bonduelle Canada, where most of the beans sold come from the growing region that runs from Southern Quebec along the St. Lawrence River bordering the United States. There are two processing plants from which the green beans were distributed from to US Foodservice in Roanoke, and later delivered to JABA. Both of these processing plants are within the Quebec Province, one is in Saint-Denis-Sur-Richelieu and the other in Quebec City.

	Growing Region to Processor (mi)	Processor to Distributor	Processor/Distributor to US Foods, Roanoke (mi)	US Foods to JABA (mi)	Total (mi)
Green Beans					
processor 1	205.24	0	704	122	1031.24
processor 2	257.69	0	791.83	122	1171.52
Average Distance (mi)	1101.38				

GREEN BEAN GROWING REGION TO PROCESSORS



GREEN BEAN PROCESSORS TO US FOODS

Chicken:

Finding the miles and different processors for the chicken proved to be much more difficult than the other menu items. Tyson Chicken was the supplier that US Foodservice bought from and the shipment most likely came from a processing plant in Arkansas. Tyson Chicken was not able to provide information regarding the specific processing plant that the chicken was processed. The food mile number for this particular item was calculated by taking the average of the distances from the twelve chicken processing plants in Arkansas to US Foodservice in Roanoke, and then adding the distance to JABA.

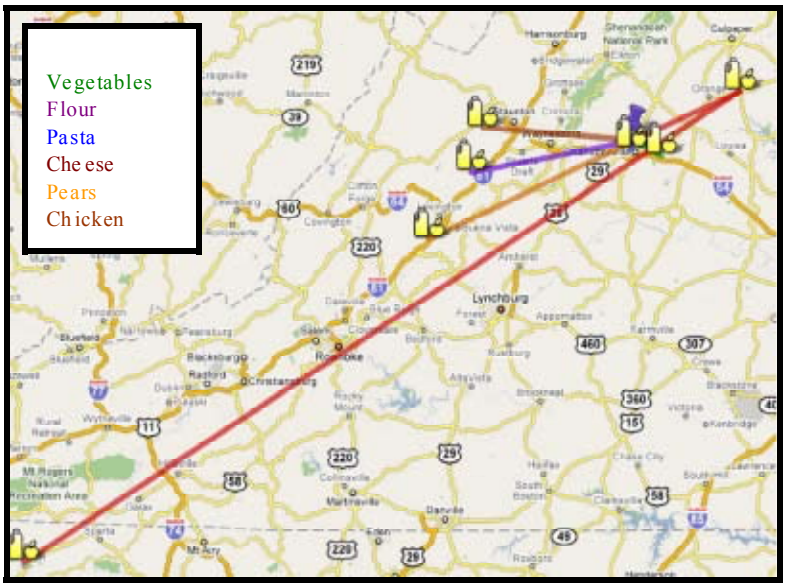
	Growing Region to Processor (mi)	Processor to Distributor	Processor/ Distributor to US Foods, Roanoke (mi)	US Foods to JABA (mi)	Total (mi)
Chicken (Arkansas)					
Bentonville: 801 SE 8th St.	not found	not found	977	122	1099
Berryville: 110 W Freeman Ave	not found	not found	933	122	1055
Clarksville: 301 E Cherry St	not found	not found	865	122	987
Dardanelle: 1291 N Highway 7	not found	not found	846	122	968
Grannis: no address	not found	not found	912	122	1034
Hope: 275 Hempstead 227 N	not found	not found	879	122	1001
Nashville: 100 E Cassady St	not found	not found	907	122	1029
Pine Bluff: 4211 Emmett Sanders Rd	not found	not found	784	122	906
Rogers: 212 E Elm St	not found	not found	978	122	1100
Rogers: 400 W Olrich St	not found	not found	973	122	1095
Russellville: 1510 S Arkansas Ave	not found	not found	841	122	963
Springdale: 2210 W Oaklawn Dr	not found	not found	961	122	1083
Van Buren: 802 S 28th St.	not found	not found	917	122	1039
Waldron: 10 First St	not found	not found	910	122	1032
Average Distance (mi)	1027.93				

DISTANCE FROM ARKANSAS TO US FOODS

Local Food Suppliers Network:

Suppliers for the local network were found for all food items except milk and butter. JABA currently uses Shenandoah's Pride for their milk products and research showed that, although the milk distributed in Virginia is from Maryland and Pennsylvania, it is the best option for JABA considering the stringent regulations imposed by the Virginia Department of Health (VDH) and the United States Department of Agriculture (USDA).

Prices listed are retail, therefore, wholesale prices may be available if these were to become regular suppliers to JABA. Additionally, limited quantities were researched for this project, so greater quantities may yield lower prices or necessitate multiple suppliers to fulfill the food requirements JABA has for its other programs. Local suppliers for all food item were found within 100 miles of the JABA Hillsdale facility, as shown on the map below. The greatest distance was incurred by Marshall Farms Natural Cheese, which has to send it milk to Jefferson, NC to be processed.



Local Supplier	Selected Menu	Amt/ 40 Meals		Unit Cost	Food Costs
Polyface Farm	Oven Fried Chicken	5	Lbs	$3.00/Lb	$25.50
	Macaroni & Cheese				
Mona Lisa	elbow macaroni	2	Lbs	$3.99/Lb	$7.98
Marshall Cheese	cheese	3.5	Lbs	$8.75/Lb	$30.63
	*milk	0.5	Gallons		
	*butter	0.25	Lbs		
Wade's Mill	flour	0.25	Lbs	$4.50/5 Lbs	$0.23
Roundabout Farm	String Beans	11.25	Lbs	$3.0/Lb	$33.75
Virginia Gold Orchard	Pears	7.5	Quarts	$20.00/10# box	$20.00
	*Low Fat Milk	2.5	Gallons		
				TOTAL	**$118.09**

**Suppliers for milk and butter that can be distributed directly to consumers are lacking within Virginia due to state and federal regulations.*

Local Supplier	Location	Miles from JABA		Environmental Food Miles Cost	Total Costs for 40 Meals
Polyface Farm	Swoope, VA	50	miles	$24.25	$49.75
Mona Lisa	Charlottesville, VA	4	miles	$1.94	$9.92
**Marshall Cheese	Unionville, VA	270	miles	$130.95	$161.58
Wade's Mill	Raphine, VA	57	miles	$27.65	$27.88
Roundabout Farm	Keswick, VA	13	miles	$6.31	$40.06
Virginia Gold Orchard	Natural Bridge, VA	80	miles	$38.80	$58.80
			TOTAL	**$229.89**	**$347.98**

***Although Unionville is only about 40 miles from Charlottesville, the cheese is processed in North Carolina and returned to Unionville for sale[6].*

About The Suppliers:

Polyface Farm: A well-known local food supplier, they could potentially supply JABA with pork, beef and eggs (pending regulatory changes), in addition to the chicken used here.

Mona Lisa: Makes several varieties of handmade pasta, available fresh or frozen.

Marshall Farms Natural Cheese: An organic dairy that, due to regulatory restrictions, must send its milk for cheese to Jefferson, NC to be processed.

Wade's Mill: Offers several varieties of stone-ground grains from its historic mill.

Roundabout Farm: During its harvests, produces several vegetable and fruit varieties for its CSA customers, the Charlottesville farmer's market and local restaurants and grocery stores.

Virginia Gold: During its harvests, produces several varieties of Asian pears.

Other suppliers were found to supply vegetables, but there were few suppliers found for the chicken, pear and cheddar cheese portions of the selected meal. Other seasonal fruit options found to be available in Virginia are peaches, apples and melons. Cheddar cheese was nearly impossible to find, but goat cheese was more readily available locally.

In addition to food costs, implementing a comprehensive local food system at JABA would require

a larger kitchen and staff because the food is not prepared and processed like the food received from US Foodservice. Costs for equipment and construction are industry averages and reflect minimum additions based on the anticipated additional space and labor required to implement the new system by JABA's current cook.

Equipment		**Item Cost**	**Qty**	**Ext Cost**
Refrigerator		$2000-$3000/ea	1	$2,500.00
Freezer		$2000-$3000/ea	1	$2,500.00
Mixer		$1000-$2000	1	$1,500.00
Food Chopper		$1000-$1500	1	$1,250.00
Range		$2000-$4000	1	$3,000.00
Work Tables		$200-$400/ea	4	$1,200.00
Utensils		$30 - $150/ea	30	$1,800.00
			Sub-Total	*$13,750.00*
Construction				
Kitchen Expansion and Remodel		$50-$80/sq ft	600 sq ft	$45,000.00
			Sub-Total	*$45,000.00*
			TOTAL	**$58,750.00**
Personnel – Per Year Additional Costs				
Cook	FT salary + benefits	$20-$28,000	1	$25,000.00
Prep Cook	PT salary + benefits	$15-$20,000	2	$35,000.00
Volunteers			3	$0.00
			TOTAL	**$60,000.00**

Additional labor for using local food for the menu we analyzed includes: cutting and preparing the chicken carcasses; preparing the cheese sauce (currently, 'Cheese Sauce' is an inventory item at JABA) for the macaroni & cheese; snapping the ends and blanching the green beans; and peeling and slicing the pears. Adding these additional steps will put significant stress on the current kitchen staff and facility, therefore, implementing greater use of local foods, will require JABA to be creative and, perhaps, reach out to the community for support. Also, implementing this system will create temporary and permanent jobs. Temporary jobs include construction jobs generated for the building of new facilities; permanent jobs include additional kitchen cook and prep persons needed. Thus the social benefits of implementing a local food

network are felt most in Charlottesville and its immediate surroundings, but also go beyond the boundaries of JABA or Charlottesville to reach neighboring communities and provided a reliable, sustainable network.

Challenges

Several challenges were found facing this part of the food system from tracing the origins of the food in the current food distribution network to navigating the minefield of VDH and USDA regulations.

Tracking food through multiple companies and regions proved difficult, and in many case impossible to track more precisely than a state or region. This problem is a result of both the lack of corporate transparency as well as the impossibility of tracking individual items whose growing location and processing plants change based on seasonality. For companies to meet consumer demand, food distributors need to buy from multiple growers. The average consumer may not accept inclement weather conditions as a valid excuse when their favorite food is not available, so the distributor, or processor, must buy from whatever region can continue to produce the product. Tyson Chicken, for example, simply processes too much chicken to be able to track which plant most likely processed the chicken that ended up in JABA's freezer.

Finding fresh, local substitutes for some food was difficult due to seasonality and the length of the growing season of Virginia. (See Appendix A). Although Virginia's soil does not lend itself to growing every type of produce, a great variety, of vegetables especially, are available for a great part of the year. Additionally, the use of greenhouses extends the growing season, especially for lettuces and tomatoes. However, they are not always economical or feasible to build for some farmers.

Accommodating preferences and dietary restrictions of the specialized population that JABA serves differs from the general population. Specific dietary requirements for low-salt and/or sugar items and preferences, such as for soft food due to sensitive or lacking teeth, are things that JABA has taken great care to consider and accommodate while developing their current menus, therefore, replacing a specific menu item cannot be done lightly. For example, replacing pears with apples, which are much more readily available for a greater part of the year in Virginia, creates either a dissatisfied client who may not eat the apple because it is hard (relative to a pear) or additional labor for the JABA kitchen staff to prepare apple sauce

or in some way make the apple more palatable to its clientele.

Finally, providing food that meets State and Federal food regulations is a challenge of potential local suppliers and limits JABA's food choice options. In addition to general regulations, JABA must follow the VDH's 'Special Requirements for Highly Susceptible Populations' (See Appendix B). These requirements are specifically concerned with pasteurized foods (prohibits the use of raw eggs), prohibited re-service (prohibits the use of food from a previously opened package) and prohibited food (raw or partially cooked eggs, fish and meat). Based on interviews with representatives at JABA and several potential local food suppliers, the most onerous of the regulations are the VDH's restriction of raw egg use and the USDA inspections required to serve dairy products. The VDH restriction limits the local food JABA can purchase to cook on site and the other is a cost that small farmers cannot afford.

Ideas And Opportunities

Several ideas presented themselves during the course of this project. As previously mentioned, JABA is committed to incorporating fresh, local food into its menus. Through its established Community Food System Project Advisory Board, JABA is bringing community members together to assist with its local food goals. Through this integrated and dynamic process, suppliers and stakeholders can work together to address impediments JABA and suppliers face in achieving its goal of 20% of the menu being local food. A greenhouse at the Hillsdale facility currently supplies JABA with herbs and lettuces, and plans are underway to harvest fruit from fig trees on the property as soon as they start producing. Additional planting beds are available on the facility grounds for additional small-scale produce production.

Additionally, a local processing plant would be extremely helpful for JABA and would enable them to serve local food to their clients during off-peak harvest seasons. Although JABA intends to do some freezing for off-peak use, the current facility is too small and the storage space too limited for this process to take place in sufficient scale to provide all of the food needed during low and non-harvest months.

Moreover, the information generated by this study, and JABA's current efforts, can be provided to other local institutions for duplication or educational purposes. Local area schools, food banks and other social and community institutions can build on the success and connections this project has made to support local food suppliers and create a new industry in processing local food for use during off-peak times of year.

Furthermore, local legislators must be encouraged to change regulations to accommodate local food systems. Without risking the health of populations served, especially specialized populations like those served at JABA, regulations could be modified to be less onerous for small-scale suppliers who can provide fresh, healthy food to the local community.

Finally, concrete information may be helpful to securing grants from the USDA's 'Community Food Projects Competitive Grants Program' or other Virginia state grant programs to support JABA's endeavors.

Conclusions

The exercise of tracking current food distribution patterns and comparing those with the opportunity for local food sources provides insight into the current food system of both this country, as well as many parts of the world. JABA was wonderful to work with because they are committed to shifting to a more locally sourced menu. This commitment contributed to extensive cooperation, especially in terms of answering questions, providing a sample menu and providing invoices of their US Foodservice purchases. Comparing actual US Foodservice invoice amounts and quoted prices from alternative, local suppliers showed that, while food costs were much lower for the current distribution system, when the food miles (as an environmental cost) are calculated, the local food network was significantly less expensive. Although the purchaser

is not paying the price of the calculated environmental cost of food miles upfront, this cost will eventually be bore by the purchaser, as well as everyone else, in the form of road maintenance and increased air and water pollution.

It is imperative that these costs be included to truly evaluate how a food system interacts with the community. This is especially true when trying to create a food system that will be sustainable. The environmental costs mentioned above may not fall to the initial purchaser but rather to future generations. The creation of a sustainable system does not create a burden for future generation, but rather tries to provide solutions for the current generation and several generations to come. Local food options that were selected for this project can help develop a viable, local economy that continues to create jobs, produce food and support a local community culture. At JABA, its senior clients can share their local food experiences and provide historic examples that compare how they have seen food quality change through the years.

Finally, this project hopes to demonstrate the benefits of shifting from a long-distance food distribution model that relies on cross continental transport to a more transparent, community based system, where relationships and increased food quality can be fostered.

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Appendices

Appendix A

PRODUCE HARVEST SEASONS

Prepared and provided by JABA

Time of Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
early month	b. potatoes s.potatoes spinach collards cabbage onions	cabbage s.potatoes collards	s.potatoes collards	spinach	carrots spinach lettuce	carrots spinach g.beans y.squash zucchini n.potatoes	carrots g.beans y.squash zucchini n.potatoes tomatoes cabbage corn broccoli cauliflower lettuce melons	carrots g.beans y.squash zucchini n.potatoes tomatoes corn lettuce melons onions	carrots g.beans y.squash zucchini b.potatoes corn lettuce melons onions	carrots g.beans s.potatoes lettuce onions cabbage b.potatoes spinach broccoli cauliflower	collards s.potatoes lettuce onions cabbage b.potatoes spinach broccoli cauliflower	collards s.potatoes lettuce onions cabbage b.potatoes spinach broccoli cauliflower
mid month			spinach	lettuce		cabbage	b.potatoes onions		tomatoes spinach	collards		
late month					g.beans y.squash zucchini broccoli cauliflower	tomatoes			broccoli cauliflower			

Steps for integrating local produce into JABA menus for 2008:
1. Create menus to reflect produce availability in central Virginia.
2. During peak seasons, 20% of each daily menu will be local food (e.g. for a five-item menu, one entrée will be local).
3. During peak seasons, additional produce will be purchased for long-term storage by freezing.
4. Other processing methods (e.g. canning) for long-term storage will be explored for future years, as well as options for larger storage space.
5. Our goal is to buy and store enough food during peak seasons to hold us during slow harvest months.

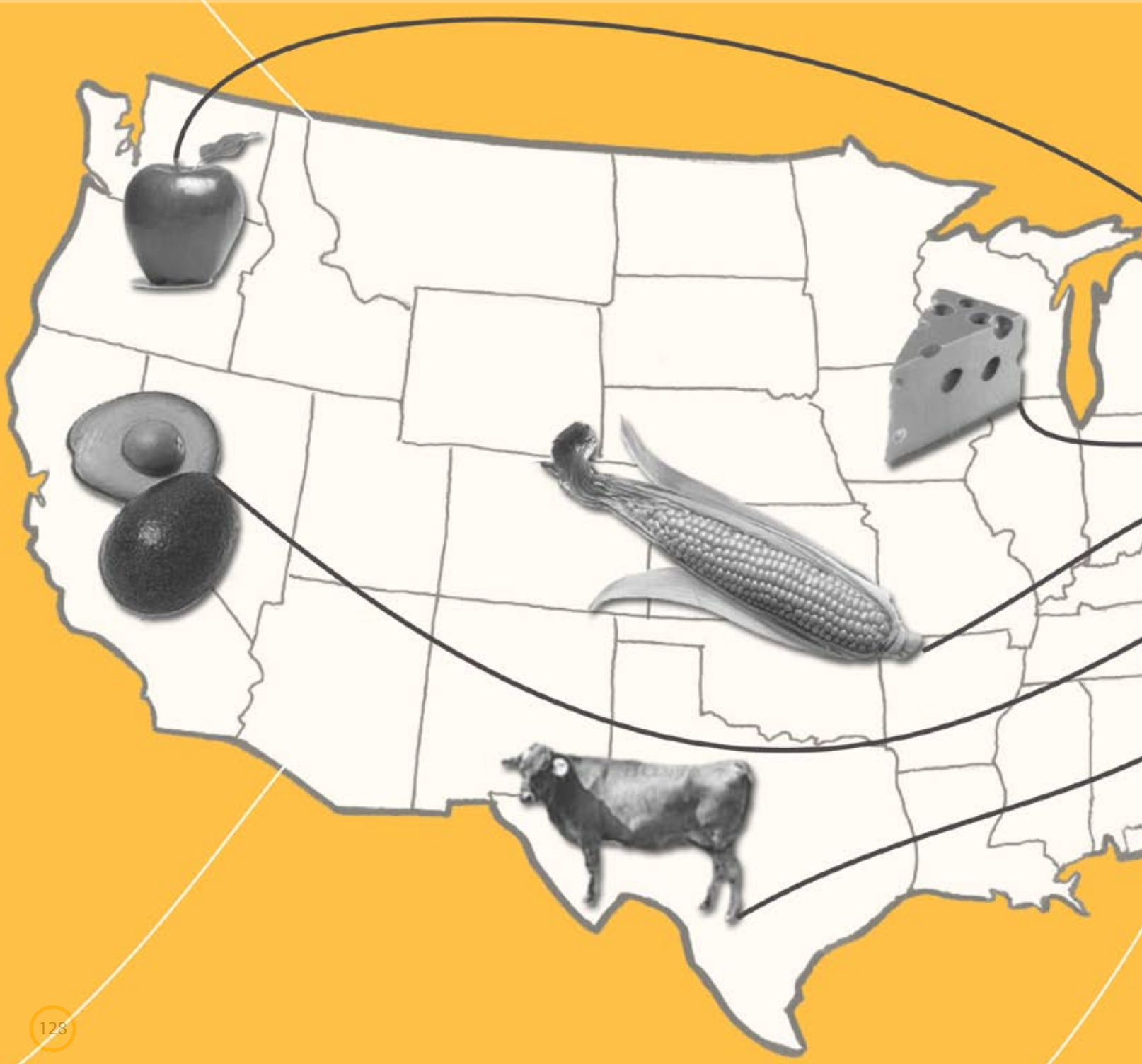
Appendix B

VDH VIRGINIA DEPARTMENT OF HEALTH
Protecting You and Your Environment

Article 8 Special Requirements for Highly Susceptible Populations
Hide details for 12 VAC 5-421-950. Pasteurized foods, prohibited reservice, and prohibited food.*12 VAC 5-421-950. Pasteurized foods, prohibited reservice, and prohibited food.*

12 VAC 5-421-950. Pasteurized foods, prohibited reservice, and prohibited food.*

1. A food establishment that serves a highly susceptible population must comply with the requirements specified in this section.
2. Prepackaged juice or a prepackaged beverage containing juice that bears a warning label as specified in 21 CFR 101.17(g), Food Labeling, may not be served or offered for sale.
3. Pasteurized shell eggs or pasteurized liquid, frozen, or dry eggs or egg products shall be substituted for raw shell eggs in the preparation of:
    1. Foods such as Caesar salad, hollandaise or béarnaise sauce, mayonnaise, and egg-fortified beverages; and
    2. Except as specified in subsection E of this section, recipes in which more than one egg is broken and the eggs are combined.
4. Food in an unopened original package may not be re-served.
5. The following foods may not be served or offered for sale in a ready-to-eat form:
    1. Raw animal foods such as raw fish, raw-marinated fish, raw molluscan shellfish, and steak tartare;
    2. A partially cooked animal food such as lightly cooked fish, rare meat, soft-cooked eggs that are made from raw shell eggs, and meringue; and
    3. Raw seed sprouts.
6. Subdivision 2 b of this subsection does not apply if:
    1. The raw eggs are combined immediately before cooking for one consumer's serving at a single meal, cooked as specified under 12 VAC 5-421-700 A 1, and served immediately, such as an omelet, soufflé, or scrambled eggs;
    2. The raw eggs are combined as an ingredient immediately before baking and the eggs are thoroughly cooked to a ready-to-eat form, such as a cake, muffin, or bread; or
    3. The preparation of the food is conducted under a HACCP plan that:
        1. Identifies the food to be prepared,
        2. Prohibits contacting ready-to-eat food with bare hands,
        3. Includes specifications and practices that ensure:
            1. Salmonella Enteritidis growth is controlled before and after cooking, and
            2. Salmonella Enteritidis is destroyed by cooking the eggs according to the temperature and time specified in 12 VAC 5-421-700 A 2;
        4. Contains the information specified under subdivision 4 of 12 VAC 5-421-3630 including procedures that:
            1. Control cross contamination of ready-to-eat food with raw eggs, and
            2. Delineate cleaning and sanitization procedures for food-contact surfaces; and
        5. Describes the training program that ensures that the food employee responsible for the preparation of the food understands the procedures to be used.



The Blue Ridge Area Food Bank

Investigation and Glocal Analysis

Ben Chrisinger
Lauren Short

Subject of the Project.

In our research project, we hoped to accomplish three different components:

1) To understand how the food bank system works in the Blue Ridge Area
2) To trace the input food items distributed from the food bank to their sources
3) To investigate how to incorporate local agriculture and products into the Blue Ridge Area Food Bank system and implement our findings.

The objectives are listed in order that they were pursued; each served as a building block for full comprehension of the next step. The objectives were ultimately completed to varying levels of success, as certain obstacles arose during the process of the project that impeded some research. In the end, however, we felt successful in the information we were able to accumulate, the relationships we established, and the assistance we provided for many of our contacts for this project.

Our subjects in this project, the Blue Ridge Area Food Bank, and specifically the Thomas Jefferson Area branch, are part of a system of food banks nationwide that currently play an essential role in providing for many of America's "food insecure" citizens. According to the Blue Ridge Area Food Bank, a person who experiences "food insecurity" includes anyone at or below 130% of the Federal Poverty Level, anyone who receives food assistance from a pantry or soup kitchen once a month, or anyone who earns federal Food Stamps once a month. In their region, which encompasses 25 counties and nine cities and spans about 245 miles north to south, these "food insecure" number 129,000 people. Table A below provides a more detailed description of the demographics served by the BRAFB.

Careful examination of the statistics describing citizens who struggle with food insecurity in the BRAFB region implicate larger problems of poverty and lack of adequate welfare programs to provide for basic needs. The Food Bank addresses this problem by providing emergency relief for the area through its four Area branches. It delivers provisions to those in the greatest need free of charge with few questions asked. These donations are provided with the understanding that many people below the poverty level receiving aid or even above the poverty level working low wage jobs are unable to afford any food for their families, let alone food of adequate caloric intake and proper nutritional value. Although the BRAFB cannot possibly meet the needs of its recipients on a daily basis, its food serves many as an essential supplement to money spent on food from wages or federal Food Stamps.

Table A: Blue Ridge Area Food Bank Population Served	
93%	of those served by the Food Bank are children under the age of 18.
49%	are the working poor.
70%	have incomes below the national poverty level.
32%	had to choose between paying for food and medical care.
38%	had to choose between paring for food and paying for rent.
48%	of food pantries and 54% of shelters reported that since 2001, there has been an increase in the number of clients who have come to their emergency-food program sites.

Source: "Hunger Has a Cure: 2006-2007 Annual Report." Blue Ridge Area Food Bank.

While a food bank does tremendous service to its community, it is important to recognize its inherent limitations. Food banks provide food for emergency relief in order to do just that- prevent malnutrition or starvation in an emergency situation. Its food is often distributed in the form of donations to the people it serves without requiring work in return. Although some food bank agencies provide programs to encourage recipients to become involved, take ownership and help reduce food insecurity themselves (through cooking classes and volunteer programs), many food banks do not ask for such contributions. The result is an organization that may engender complacency within the community it serves. Despite the food bank's assistance, its existence may create a social stigma against those who accept food bank donations, thereby perpetuating a label of helplessness by outside community members.

Questions arise as well about the success of a food bank system as a way to reduce the population of "food insecure" individuals. The band-aid approach that food banks adopt is certainly invaluable; without this model for assistance the situation for individuals who already experience limited access to food would likely worsen. This approach, however, does not address the larger question of why 129,000 people in the region are 'food insecure' as a means to answering the essential question of how their situation may be improved. To address these questions would potentially mean confronting deeply seeded issues of poverty, affordable housing, employment and other systemic social problems. Without confronting these distill causes of food insecurity, however, the need for the product from the food bank will continue at a

growing rate. Therefore, the success of the food bank to meet the high level of community needs in fact highlights a failure of society and aid organizations to solve the real problem of poverty.

In the region's current state of need, it would be neglectful to deny the importance of a thriving food bank system. We see a place for the Blue Ridge Area Food Bank to meet the needs of its recipients and the community food system as best it can. These hundreds of thousands of people served are a uniquely "captive" audience for the food bank programs, so the food bank bears the responsibility of providing healthy and practical foodstuffs. The immediate concerns of food intake by the BRAFB certainly include health of recipients. When the Food Bank is put into context of working within a larger community, however, its responsibilities grow to encompass economic and environmental in addition to nutritional responsibilities. In our project, we address how the Blue Ridge Area Food Bank currently meets these needs and project some new ways it might do so in the future.

Profile of the Subject

The mission of the Blue Ridge Area Food Bank is "to reduce hunger through programs and partnerships which efficiently obtain and distribute nutritious food and other products to people in need" (Hunger Has A Cure: 2006-2007 Annual Report). In order to accomplish this, the BRAFB reaches a region of 25 counties and nine cities across central Virginia. The length of their jurisdiction is approximately 230 miles. The headquarters and central distribution location in Verona, Virginia sources food to the four area branches- the Shenandoah Area branch in Verona, the Thomas Jefferson Area branch in Charlottesville, the Lord Fairfax Area branch in Winchester, and the Lynchburg Area branch in Lynchburg. From these Area branches, the food is distributed to hundreds of agencies- churches, local government centers, and shelters- who distribute the goods through their food pantry or soup kitchen. The agencies open their doors to the public with varying frequency; while some agencies offer their services to the public everyday, others are only open once a month. Intake of food by area branches often originates from the headquarters' warehouse, but this route may also be bypassed so that the four local branches and agencies accept donations from their local communities.

The entire food bank accepts about 10 million pounds of food each year worth about $10 million from various sources. These include 5-6 million pounds of food from America's Second Harvest program, a charitable network of food banks nationwide sponsored by USDA and private food production companies. The USDA also directly donates about 1.5 million pounds of goods yearly. Regional food processing companies including Target, Sysco, McKee, White Wave, Walmart, Tyson and Purdue, which are located within the BRAFB's jurisdiction, donate approximately 2 million pounds each year. Local food drives and food donations by local agencies constitute 0.5-1 million pounds of food annually. Also, depending on the harvest, the Food Bank receives about 600,000 pounds of hearty produce like potatoes from a Volunteer Farm in Woodstock, VA.

Methods and Glocal Analysis Findings

After completing part 1 of our objectives in which we researched the working of the food bank system, we had a better idea of how to achieve part 2, in which we would trace the food inputs to the BRAFB back to their original sources. To simplify this task, we identified a unit distribution that an average family would receive from the food bank. For convenience's sake, we worked with the Thomas Jefferson Area Food Bank (TJAFB) branch to track down a participating agency who received their food pantry goods from this branch. We identified the Holy Comforter Catholic Church as the most frequented program; Holy Comforter serves approximately 600 people in need per week.

Through a series of interviews and a visit to the Church, we found out how their specific distribution system worked. Food Bank products are ordered by the church by taking into consideration: a) what products are available at the TJA food bank that week and b) the anticipated recipient need at the Church. The food distributed could be given out to anyone who requested the service regardless of income, but all recipients could only receive the food once a month. The food pantry was open for two hours three times per week, and a soup kitchen meal held once a week on Thursday at lunch. For the purposes of our project, we traced an allotment of food to a family of four from the food pantry for a one month period.

A family of four received five grocery bags of food in a one month period at Holy Comforter. Four

of these bags were filled with identical food that came directly from the food bank. The last bag of food included products gathered either from local food drives, Church donations, or Church-bought goods meant to supplement the USDA product. All of this food was intended to maximize the nutritional content for recipients by providing balance between food groups. A typical distribution amount would include: (See Appendix A for pictures of the type of food we encountered)

-Grains: pasta, rice, cereal
-Vegetables/legumes : Canned green beans, dried beans
-Fruits: Canned apple sauce, fruit cocktail cups
-Meat: Canned chicken, canned tuna, frozen bologna
-Prepared Foods: Beef Chili, Cream of Mushroom Soup
-Snacks: Crackers, popcorn, granola bars

After identifying the typical monthly allotment for a family of four, we went to work tracing the food products back to their sources by contacting producers. While email and phone contact were initiated, phone calls proved more successful to what extent we experienced any success. The process was extremely frustrating and largely uninformative. Many phone representatives explained that due to non-disclosure laws, companies were not required to reveal the location of the processing plant, let alone the location of the ingredient producers. Only if the food was processed and packaged outside of the United States did the food product have to be labeled as such, but no insight as to where in the U.S. food came from was necessary to convey. In the end, our calculations of food miles had to be estimated roughly from the center of the state where each processing company's headquarters were located since we received almost no specific information from the companies themselves. We reasoned that the location of the company headquarters is often includes a large processing plant, so is a high likelihood of the product coming from it. In some other cases, corporate correspondents revealed the state of the product's processing plant, but not the specific locale. For these reasons, it was necessary to estimate the distance from which these products came based upon an average distance from the center of the state to the TJA Food Bank. The other distances traveled included:

-Canned Vegetable Soup from Tennessee- 560 miles
-Crackers from Michigan-621 miles
-Canned Green Beans from New York or Wisconsin- 464 miles or 1033 miles, respectively

-Couscous, Vanilla wafers, Campbell's Soup from Illinois -828 miles
-Canned tuna farmed in Fiji- 7584 miles

We were able to use the vague information we gathered from companies and our own calculations and observations of the BRAFB to draw some conclusions about the current industrial food that is currently integral to the BRAFB system. (See Appendix B for our Glocal maps)

Insights and Lessons: The Impact of BRAFB on its Recipients and the Larger Food Community.

Participants in a food system generally fall into three categories- producers, retailers and consumers. In the U.S., all of these roles are driven by the free market, so money is exchanged for goods between two or all three of these entities. In this system, dollars serve as votes where consumers cash in their votes for their preferences of food based on their tastes, values and needs. Such a choice may involve a family buying organic broccoli for health reasons or bread from a local bakery to support small businesses. Food dollars as votes allows producers and retailers with highly demanded products to succeed and expand to satisfy consumers. Likewise, producers and retailers with few dollar votes fail or learn to adapt to consumer needs. While the BRAFB, which attempts to feed 129,000 people in its region, represents a significant number of consumers in the region, the Food Bank as an entity does not participate in the economy of the food system like other producers, retailers or consumers. Because the people served by this organization and the organization itself have extremely limited access to resources, they have few choices or dollar votes at their disposal. As a result, they accept the food votes of other consumers who provide food products to the BRAFB. Although the BRAFB and its recipients have little true choice about what types of food products they receive, recipients of the Food Bank product must accept the consequences of these choices as consumers do, for better or worse.

From our inquiry about the intake and distribution of the BRAFB products, we found that the current system presents problems for the environmental, nutritional and economic health of the BRAFB recipients and the larger food community. The products distributed in the system are mostly pre-packaged, non-perishable goods. While some concerns related to the current dependence on this type of food were clearly visible during the investigation, others are growing concerns that we expect to worsen in the coming months due to the dismal state of the U.S. economy.

The current product used in the BRAFB system greatly impacts the environment. To preserve and package goods in order to prepare them for travel and market requires great expenditures of energy and fuel for machine use. Also, the packaging generates a great deal of trash. The most costly environmental impact of industrial food is the transportation required between farms, processing plants, retailers and finally to the BRAFB system. While this could not be accurately represented by our map due to the dearth of information available to us about where the farms and processors were located, we could tell that even the shortest distance from the processing plant was about 475 miles (a processor of Kroger brand canned Green Beans). The average commercial tractor trailer truck gets about six miles for every gallon of fuel, meaning that over 79 gallons of fuel were required for the closest donated food to our family of four in order to travel from processor to the TJA branch location.

It was clear from the food that we investigated that the Holy Comforter Church and the BRAFB made concerted efforts to create balanced meals for their recipients, to they limited extent they could do so. The products available to them through America's Second Harvest are mostly non-perishable goods, which contain high amounts of preservative chemicals. Their preference of these products is reasonable. Non-perishable foods travel long distances easily , and are convenient for storage, both in the Food Bank and in the home of the recipients. Additionally, these foods provide the most calories per dollar and are the cheapest to purchase and maintain . The chemical preservatives in these products, however, can be harmful to consumers' health. Often these products contain high amounts of refined sugar, sodium or other complex and harmful chemicals. A food as wholesome as green beans, for instance, when canned, stores about 15% of the Recommended Daily Allowance of sodium in one serving in order to preserve it. Our findings make it clear that when weighing the costs with the benefits of non-perishable foods, health is often forced to take a backseat to cost-effectiveness in favor of these processed goods. The limited financial means of the Food Bank and its recipients forces it to adopt such cost-conscious decision making measures. The repercussions of such a decision are seen in the obesity crisis rampant in the United States today. There exists a strong correlation between obesity and diet-related health conditions, and low income demographics in the U.S. This is due in large part to limited access to nutritious food by people of low income.

While it would seem that the current industrial food system maximizes cost-efficiency as previously mentioned with the use of non-perishable goods, the current system also includes many drawbacks that will likely make it a less financially appealing option in the near future. Due to rising oil costs, the transportation of food products over hundreds of miles is becoming very costly to producers. The long distances that food must travel to reach the plates of Food Bank product recipients make the cost of transportation high, even when gas prices are stable. With the rapidly increasing gas prices today, transportation costs of food have shot up in correlation. Even if food producers have been able to bear these costs up to the present, continual depletion of oil and corresponding increases of price per barrel will likely force companies to pass this cost on to the consumer by raising retail prices for food. As crude oil prices have peaked this past week to nearly $120 per barrel and gallon prices rise to about $3.51/gallon , commodity prices are forced upward. This means that the USDA will no longer be able to provide the same amount of goods to the food bank for the same price. As a result, either the supply of food available for those in need will decrease, or the USDA, local donators and the Food Bank will have to increase their budget for buying food products. When this price increase happens, the BRAFB may begin to search for more local sources of food products.

Challenges to the Current System

The challenges faced by the Blue Ridge Area Food Bank arise at each of the three distribution levels: Region (based in Verona), Area (Thomas Jefferson Area), and Agency (Holy Comforter Church). Another layer of challenges is superimposed on the three system levels, and delineates the origin, either internal or external. Some challenges come from within the system and are inherent to the nature of food distribution, while others are from an outside source, often regulatory. Table B summarizes both the internal and external challenges faced at the three administrative levels. Adding yet another degree of complexity, we can examine different sets of challenges: to health, to local food, to affordability, among many others. Throughout our research, the complexity of the BRAFB System was made starkly apparent by the complexity of the challenges they must face.

Internal challenges refer to the obstacles inherent to a food collection and distribution system, not independently imposed by an outside entity. Many internal challenges have solutions already in the planning process, requiring some changes in things like shipping or storage capacities. While these cases may be relatively easy obstacles to overcome, others are deeply ingrained in the system processes and would require many large-scale changes to address, or are not even perceived as addressable by Food Bank officials. For example, the regional challenge of serving over twenty counties is something that could be solved by downsizing the BRAFB coverage area, however, this is not something Food Bank officials are interested or willing to do out of interest for the communities they serve.

Several internal challenges are common to all three levels of the BRAFB system, including transportation, dealing with perishable goods, and balancing quantity with quality. Transportation concerns are present for all system scales, however, they are most pronounced at the Regional level where managers must coordinate product pick-up and drop-off with the America's Second Harvest Program and organize transportation to each Area food bank (as far as 108 miles away). The planning and oversight required for transit management requires a great deal of attention from BRAFB officials at the Regional level. The highly discounted USDA-program foods currently absorb many of the transit-related expenses, thus these costs are not currently cited as a significant burden on the system, however, we postulate that as global fuel prices continue to rise, the BRAFB will be challenged by their reliance on transporting food from place to place.

Perishable products often have a greater nutritional value than non-perishable and processed goods. Dealing with the perishable foods presents a significant challenge to the entire BRAFB System, as these foods are often difficult to transport (or have special transit needs), require infrastructure for storage, or need to be distributed in a timely manner. All scales of the system have to consider how to transport perishable goods that they receive (though this is chiefly a concern for Regional operations), as some items might be damaged in transit (tomatoes), or will spoil without proper refrigeration (meat products). Once received by a BRAFB facility, these goods present a challenge of proper storage. Again, refrigeration is a primary concern, and though both the BRAFB Headquarters in Verona (Regional) and the Thomas Jefferson Area Food Bank, or TJAFB (Area), have industrial-scale coolers to store some perishable goods, most

agency organizations are reliant on household-size refrigerators and freezers to store a limited amount of goods.

Providing a fairly complete offering of nutritious dietary options is another internal challenge for the BRAFB System. Officials at every level expressed their desire to be able to provide "healthy" meal options to food bank users, though in this context choosing healthy meal options may mean that a BRAFB official chooses not to purchase or accept cheaply available soda or candy in the interest of their customers. However, food bank managers must frequently balance the benefits between quality and quantity, as many products are offered at low or no cost through the USDA program, and though the nutritional value of these foods may be questionable, they are able to be purchased in much larger quantities. These sorts of judgment calls are most frequently made at the Regional scale, where most of the UDSA product decisions are made, but both the Area and Agency officials realize the fact that less nutritious foods are frequently the more readily available and cost-effective.

The variability of the USDA's food bank supply and state food regulations are among the external challenges to the Blue Ridge Area Food Bank System, at all levels of operation. Through the USDA America's Second Harvest food bank program, BRAFB receives much of its food products at little or no cost (excepting transportation expenses), however the availability of a variety of food products is far from consistent. At the Regional scale, food bank officials do their best to find a variety of low-cost foods in large quantities to pass along to the Area food banks, who in turn allocate products out the Agency organizations. This concern was most significantly expressed to us at the Agency scale, where managers told us that sometimes the USDA products they depend greatly upon are limited or not easy for customers to take (too heavy or large). When supplies are limited, Agency organizations must supplement the USDA products with goods from their own food pantry shelves, stocked by community food drives and donations from local grocers. In the absence of planned food drives, these food pantry shelves are very finite resource, as they are not meant to operate as the primary source for food. Under the current Food Bank system, the USDA products are an essential component to food distributions, however, the inconsistency in their content can place a strain on food bank managers, especially at the Agency level.

Table B:

Internal and External Challenges to the Blue Ridge Area Food Bank System			
	Region	Area	Agency
Internal	-Distribution to 3 distant area food banks requires large transportation costs. -Ability to distribute perishable goods limited -Coordinate massive effort to cover entire Blue Ridge/Piedmont region of VA	-Ability to distribute perishable goods limited (time-dependent)	-Ability to distribute perishable goods limited (time and space-dependent) -Volunteer-run program -Depends on variable community donations to supplement USDA product
External	-USDA/America's Second Harvest Program is not a consistent source of a balanced diet, though it is consistently the cheapest option -State regulations prevent certain local donations (baked goods, meats, dairy, etc)	-State regulations prevent some local donations (baked goods, meats, dairy, etc)	-Fairly extensive documentation/record-keeping mandated by USDA Program

Ideas for the Future

Throughout our investigation of the Blue Ridge Area Food Bank system the importance of local food incorporation has been emphasized to us by BRAFB officials. The Food Bank has made progressive efforts to achieve this goal, including purchasing refrigerated trucks and hiring Food Security Specialists. As a stated goal of our project, we were looking for potential opportunities for local inputs to BRAFB, and we were encouraged by the food bank's ambitious hopes for getting local, nutritious foods to their beneficiaries. We hoped to facilitate a connection between the food bank and the local food community by contacting community farmers, local/slow food advocates, and other stakeholders.

Through a series of email contacts, we were able to begin conversations with Paul Brandt, a representative of Market Central, a nonprofit organization devoted to improving the Charlottesville City Market. From our initial meetings with Mr. Brandt, we learned that City Market vendors used to donate their extra produce and baked goods to local charities (including the Women's Center and Salvation Army), though this

was operated largely by interested individuals rather than an through an established system. It was Mr. Brandt's opinion that with the organizational support of Market Central, and the transportation support of the Thomas Jefferson Area Food Bank, a similar program could be easily reestablished.

Since our initial meeting, we have continued to facilitate this discussion and have involved Tony Tracy, Food Security Specialist with the Thomas Jefferson Area Food Bank, as well as Anne Friedlander, director of Holy Comforter's Soup Kitchens and Food Pantries. Both Mrs. Friedlander and Mr. Tracy expressed an interest in developing this partnership with Market Central, though they noted that considerations will need to be made by TJAFB in advance to best accommodate this program and make it successful. For example, TJAFB will need to provide a volunteer or employee every Saturday to pick up the produce after the City Market, and the Agency organizations (like Holy Comforter) will need to have a representative pick up a portion from the TJAFB warehouse. The details to this arrangement can be easily worked out with continued dialogue between Market Central and TJAFB.

From speaking to numerous Food Bank representatives and community members, it is evident that both the local food community and food bank officials are interested in creating a system for food donations after Saturday City Market. Both groups have representative groups or individuals to broker such a deal: for the food bank, their Food Security Specialist, and for local market vendors, the Market Central organization. We feel that both parties are currently poised to make this important connection between Charlottesville local food sources and the Food Bank, and can arrange this sort of a partnership within a matter of months.

Conclusions

To draw meaningful conclusions about the Blue Ridge Area Food Bank System, we must again recognize its three distinct scales of operation: Region, Area, and Agency. Though some conclusions apply to the food system as a whole, many are only germane to one specific level of operation. Though in our initial survey of the food bank system we questioned the overall efficacy of food banks as a tool for public welfare, here we have been specifically mindful of the food bank's mission: "To reduce hunger through programs and

partnerships which efficiently obtain and distribute nutritious food and other products to people in need." In drawing conclusions, we hope to make meaningful observations about the system that might reveal opportunities to increase efficiency or implement new programs.

As its own food system, the Blue Ridge Area Food Bank attempts to serve over twenty counties in Virginia's Piedmont, where nearly 130,000 people live below the poverty level. To effectively reach those in need, BRAFB has introduced two layers of bureaucracy that report to the Regional office: the Area and Agency organizations. This system appears to be effective and tries to enable individuals at the Agency level to focus on distribution, rather than acquisition. The two existing levels of administration have proven to be essential to the overall efficacy of the system, though we might hypothesize that another intermediary added to the system might place too much distance between the BRAFB and the community it attempts to serve. It is important to note that the current system forces interdependence: BRAFB relies on its Area and Agency organizations to distribute the products it acquires, while Agencies and Area organizations rely on BRAFB for the majority of their food for distribution.

Though the current system allows the Blue Ridge Area Food Bank to oversee an extensive project, the sheer area of its operation mandates that food bank managers must make accommodations for transit costs and infrastructure. The model for food bank systems typically mandates that the organization function simultaneously as a consumer and supplier, thus creating a need for freight considerations, especially on the scale of BRAFB. The food bank is fortunate enough to be able to purchase food and only pay for the cost of shipping, however we are concerned that rising fuel costs may jeopardize this convenience. Food suppliers will undoubtedly be forced to raise their prices to adjust to the increased cost of fuel, and we might expect suppliers to the food bank system to act accordingly; either food donations to the food bank will decrease, or the products purchased by the food bank will come at a higher cost. Even regardless of donations, the network of shipping from Verona to Area food banks will become more expensive and force food bank officials to make decisions about how to increase their budget for transit.

In light of these ominous predictions, the Blue Ridge Area Food Bank is making great progress towards creating an effective plan to maintain their level of output, provide more nutritious food, and decrease its reliance on transportation in spite of a pending fuel crisis. Outgoing BRAFB chief operating

officer Tom Hill expressed that the Food Bank will be making significant efforts to better incorporate local foods into their system, not only to reduce fuel costs, but to increase overall food security. He cited BRAFB's current partnership with the Volunteer Farm in Woodstock Virginia as an example of an effective input of nutritious, local foods to the food bank system. This relationship demonstrates movement in the right direction, however, the high costs associated with non-industrial farming may prove to be prohibitive to the establishment of other donation-based partnerships. It would behoove the Food Bank system as a whole to develop a framework for partnering with local farms in a way that tangibly rewards small farmers for being a supplier to the Food Bank. The budget of the BRAFB will not allow for large-scale purchasing of local goods (assuming common market prices for local foods), thus some sort of special partnership needs to be designed to accommodate both interested parties.

The goals of the Blue Ridge Area Food Bank are inherently difficult. Any effort to provide nutritious, free food to over 100,000 people on a regular basis is truly monumental and requires some degree of industrial-style efficiency and bureaucratic delegation. The system designed by BRAFB allows them to serve numerous communities at a very personal level by using Area and Agency organizations as extensions of the larger entity. The current dialogue between the Food Bank and Charlottesville growers is encouraging and offers a grand opportunity to design a model of distribution for other food banks and farmer's markets in our region and state. It is clearly evident that the Blue Ridge Area Food Bank is making decisions with the welfare of their beneficiaries in mind, and their current initiatives to bring local products into the food bank system reflects their forward-thinking and progressive way of planning for the future.

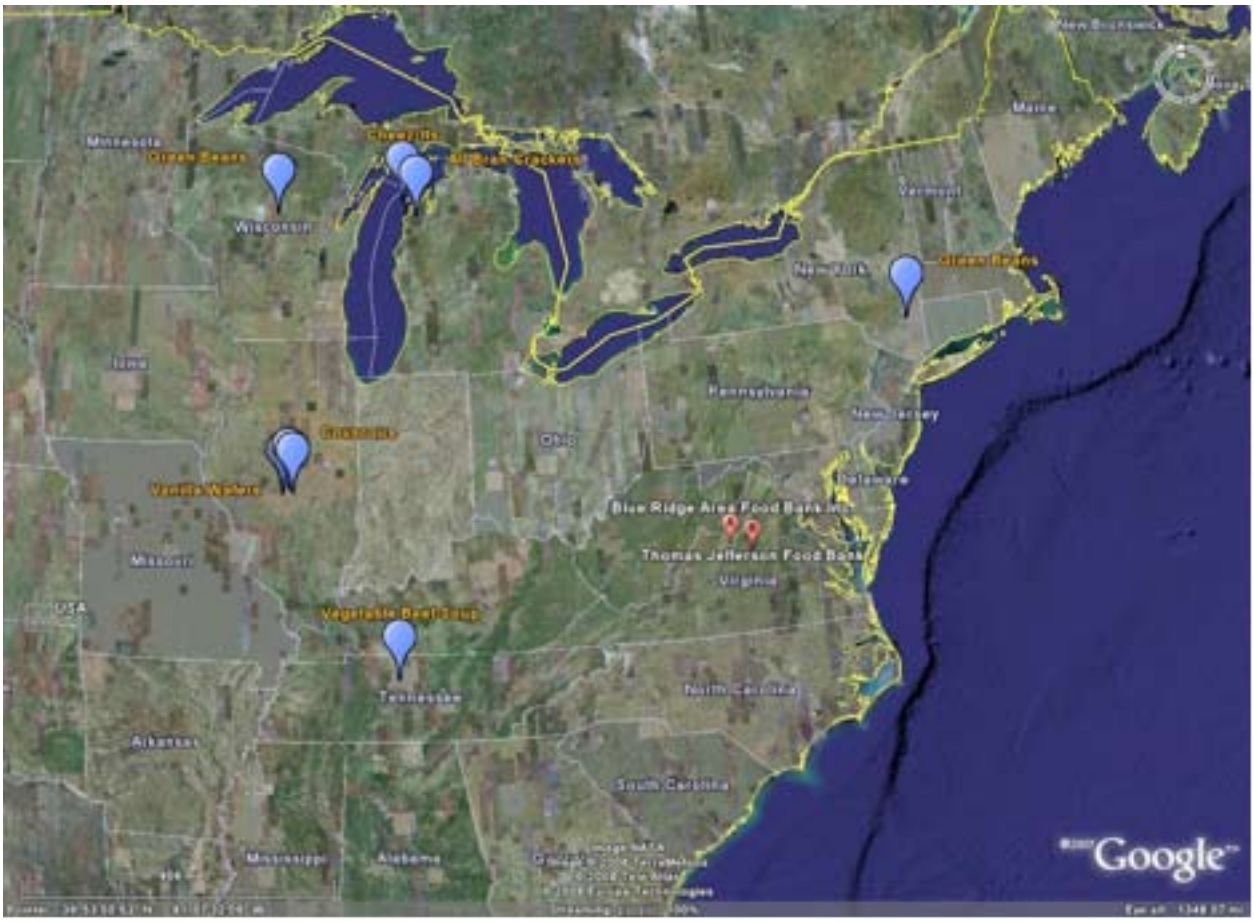
Appendices

Appendix A

The contents of one USDA bag of food from Holy Comforter Catholic Church in March 2008. Each bag included a box of cereal, dried beans, pasta, and four cans of vegetables. A family of four received four of these bags monthly.

The contents of a supplemental bag of food from the Holy Comforter for one month. Each bag included canned fruits, vegetables, soup, tuna, two boxes of crackers, and three types of pasta.

Glocal Maps:



National Map:

Distances traveled from processors nationwide to BRAFB (Verona, VA) to TJAFB (Charlottesville, VA)

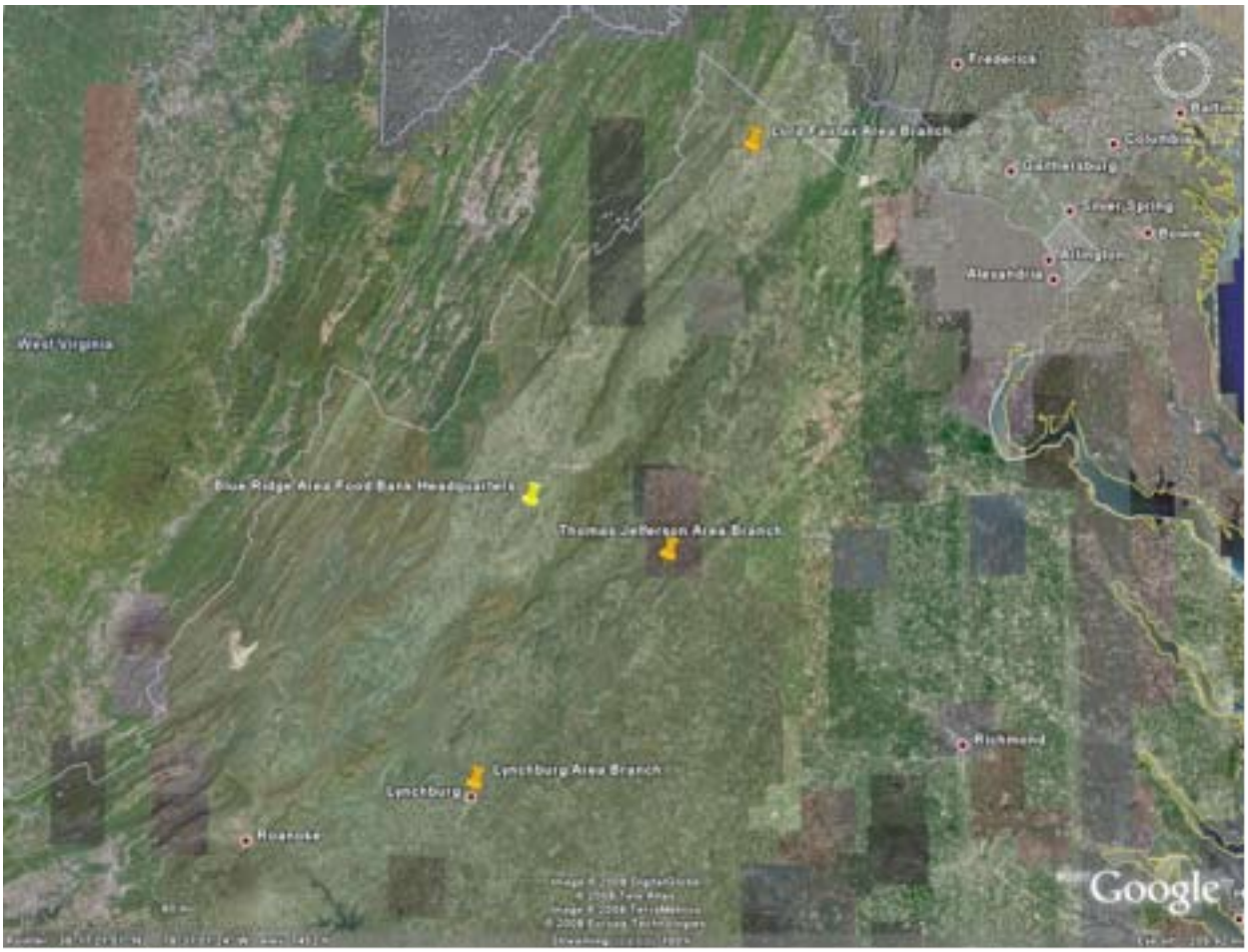
-Canned Vegetable Soup from Tennessee: 560 miles

-Crackers from Michigan: 621 miles

-Canned Green Beans from New York or Wisconsin: 464 miles or 1033 miles, respectively

-Couscous, Vanilla wafers, Campbell's Soup from Illinois: 828 miles

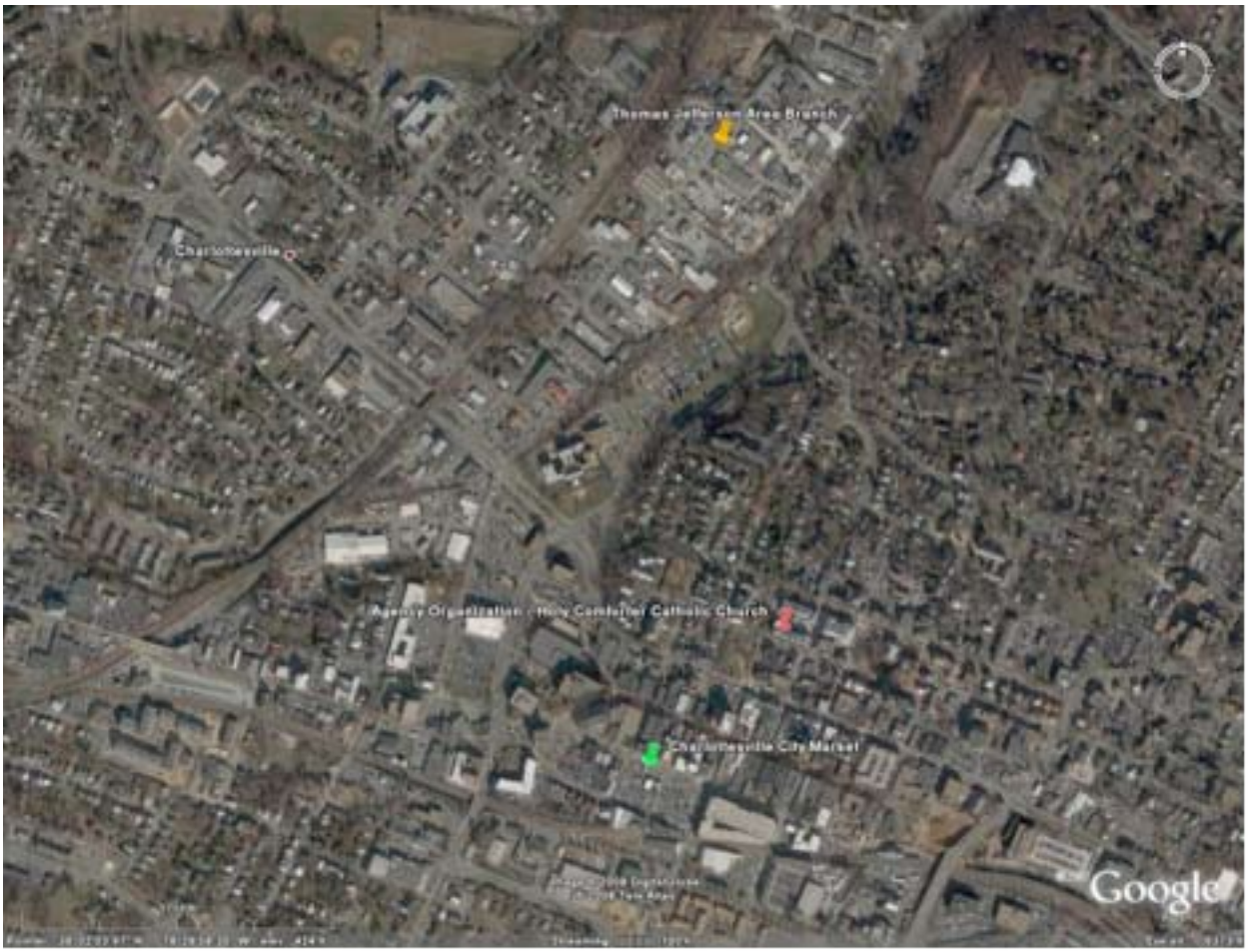
-Canned tuna farmed in Fiji: 7584 miles



Regional Map: Blue Ridge Area Food Bank

-Length of district: appx. 230 miles

-Distance from Verona (Headquarters) to Charlottesville (TJAFB): 44 miles



Local Map:

-Distance from TJAFB to Holy Comforter Catholic Church: 1 mile

-Distance from City Market to TJAFB: 1.2 miles

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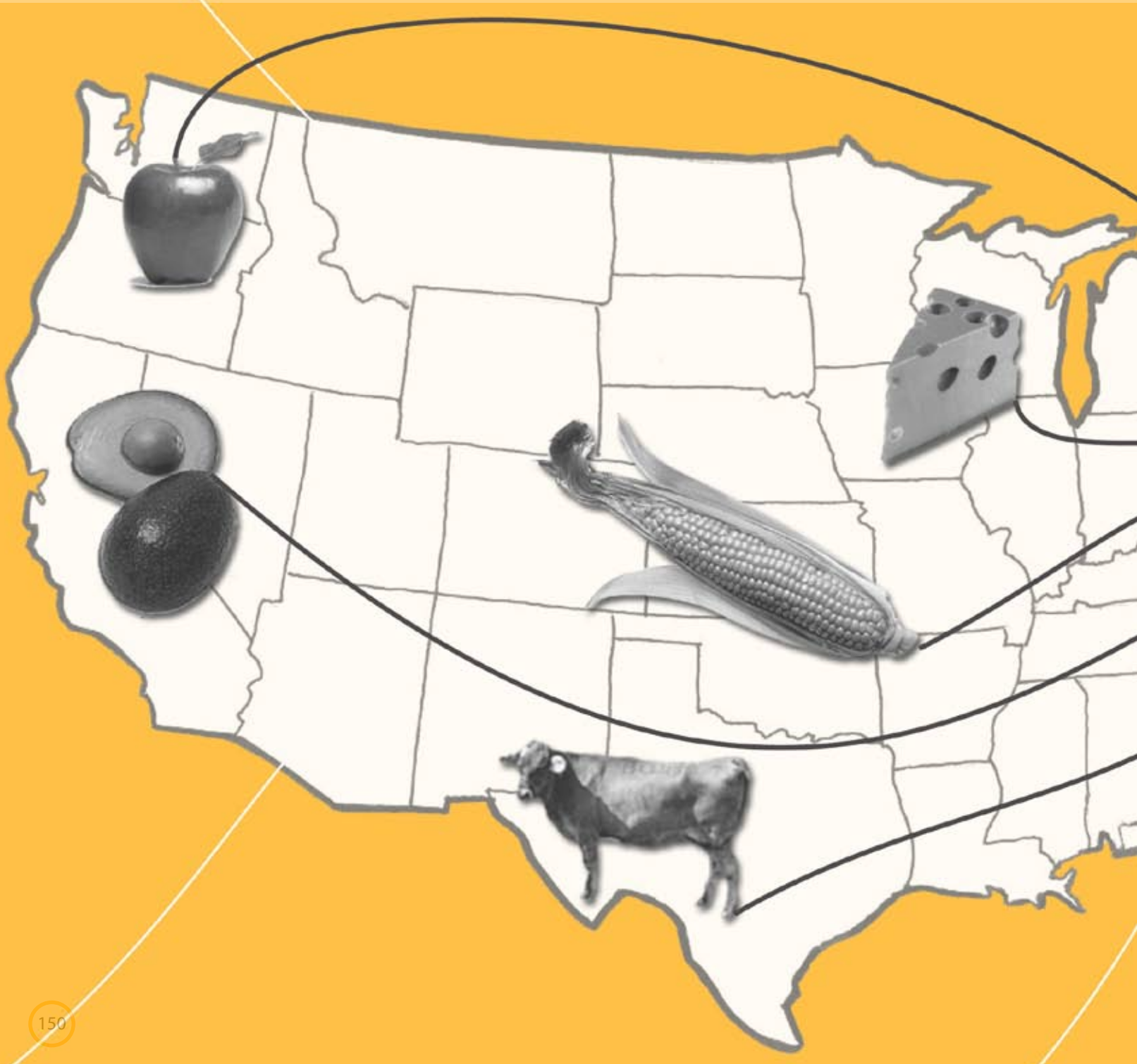


Food Equity in the Charlottesville Food System

A Study of Issues Facing the Folley Family

Jennifer Feigert
Thomas Roberts

Introduction

News reports, blogs and individuals alike are buzzing about the local food movement in the United States that has exploded in the last decade. Smaller farmers, environmentalists, sustainability activists, planners, students and various members in communities across the country are collaborating to build more self-reliant food economies by integrating food production, processing, distribution and consumption into a sustainable, local food system. These localized systems are still, however, only a small part of our national food system and an even smaller part of the global food system.

Throughout the semester, we have studied the environmental, social and economic advantages of local food, which is based on the development of local relationships. We have also examined the health benefits of eating organic. Local and organic food is quickly becoming a symbol of not only delicious and great quality food, but also a marker of high status. Ironically, due to the way our economy, policies and food-related institutions are structured, the simplest and most natural foods cost significantly more than highly processed, well-traveled commercial foods.

What does this mean for our community food system in Charlottesville? Is local and organic food even on the radar of low-income consumers working to feed their families? What are the health implications for those individuals in Charlottesville who cannot afford to purchase these health-promoting and community-building foods? What are their alternatives? What are the consequences of this fundamental inequality for our entire community; and what can be done to bridge the gap?

Goals

For our project, we chose to examine whether low-income Charlottesville residents can afford to be healthy. Our primary objective was to gain a new perspective of the Charlottesville community food system by examining what it looks like from the point of view of Harold Folley, a low-income consumer, and his family. We seek to understand his awareness of health and nutrition and how that knowledge interacts with larger societal issues such as access and social justice. We endeavor to study "glocal" equity in Charlottesville by

placing local and nutritious food options in a low-income context based on the experience of Harold and his family. Finally, we will propose ideas and opportunities for change to help bridge the gap between low-income consumers and access to a health-promoting diet.

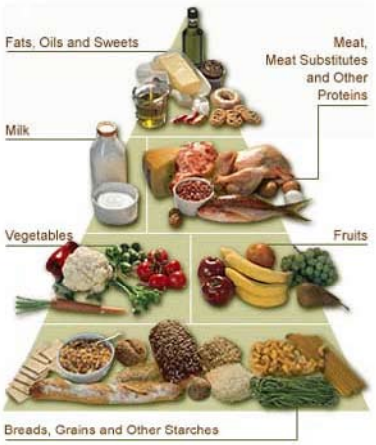
Ultimately, we hope this project will serve as a tool to raise awareness about issues of access and social justice within our food system. We hope that the spread of social consciousness through time and space will dismantle the social institutions that structure the Folley family's budget, housing situation, diet and overall health, allowing for equal access to resources, especially healthy foods. This redistribution of resources would allow low-income residents who have been excluded from the mainstream local food movement to purchase healthier and more local foods. In addition to improving the health of these residents, this improved system would reinforce the sustainability of our regional food system.

Subject

The subject of our analysis is the family of Harold Folley, who resides in the Westhaven Public Housing Units of Charlottesville. Harold is a prominent member of the Westhaven community and supports a large family on a relatively low income. We were interested in discovering how his situation relates to the larger community food system, gauging the Folley family's awareness of healthy eating habits and their importance, and uncovering how the Folley's socio-economic status influences their food purchasing and consumption.

The Folley household is home to Harold, Clarissa and five children. The family lives in a three-bedroom, subsidized-housing unit where they pay $785 per month. Even though they live in some of Charlottesville's lowest cost housing, almost 40% of Harold's $2000 monthly income goes to housing costs. When this cost is compounded by school supplies, gas and other expenses, little money remains for food. The Folleys shop for groceries every other week when Harold gets a paycheck. They allot $150 for two weeks worth of food. During the school year, the five children are provided with free breakfast and lunch by the Charlottesville City School System. This assistance helps offset the cost of cost of food for the household during the school year; but what happens during school breaks? These are some of the questions that we will explore further.

Diabetes Food Pyramid



Harold has Type II Diabetes, which means he often suffers from abnormally high blood sugar levels resulting from low levels of the hormone insulin caused by insulin resistance. His condition may be managed with a combination of insulin injections, medications and dietary treatment. In past years, as a result of his classification by UVA Health Center staff in the lowest income bracket, the majority of his medication costs have been covered by the University of Virginia Health System and government programs. Currently, Harold pays only four dollars per month for his medications. Although this medical coverage allows him to control his Diabetes with regular, affordable insulin, Harold has been unable to take steps to reduce his insulin dependency through healthy eating habits.

Dietary treatment is especially important for people with diabetes because they must take extra care ensure that their food is balanced with insulin and oral medications to help manage their blood glucose levels (ADA). Ideally, the best meal plan will help a diabetic improve their blood glucose, blood pressure, and cholesterol numbers and also help keep their weight on track. For many diabetics, designing a satisfying and healthy meal plan is the greatest challenge to dietary treatment; and thus organizations like the American Diabetics Association recommend working with a doctor or dietitian to create a meal plan that meets an individual's unique needs (ADA). In fact, although, they are not part of the federally mandated Medicaid benefits package, some nutrition counseling services are already provided as a state-sponsored option under Medicaid in nearly every state.

For Harold, however, the barrier to a healthy diet is not lack of knowledge: He understands completely what he should be eating to treat his diabetes. He also understands the health benefits of fresh fruits and vegetables, whole grains, and lean protein apply to everyone, not just individuals with Diabetes.

Methods

Our methodology evolved throughout the progression of our research. Because our most important objective was to try to understand the community food system from Harold's point of view, we spent the majority of our time talking with Harold and his wife, Clarissa. We started with an introductory conversation to discover ways we could make this a mutually beneficial project. On Wednesday, February 13 at 5:15 PM, we arrived at the Westhaven Community Center and met with Harold and Clarissa. We presented the goals of our project and asked Harold and his family if they had any specific goals, concerns or questions. As the conversation unfolded and we all became more comfortable, we spoke more generally and touched on a variety of subjects. Certain themes emerged repeatedly throughout our conversation including affordable housing, limited budgets, high costs, awareness, good nutrition and overall health and well-being. These themes guided our research towards aspects of our community food system that affect or, in some cases, neglect the Folley family.

We maintained contact with Harold throughout the project by way of telephone conversations, official project meetings, and informal encounters. After hearing Harold's thoughts on various aspects of the food system in Charlottesville, we established specific issues we wanted to investigate and how we could best research them. Our methodology integrated different research mediums including frequent discussions, a food log, grocery shopping with Harold at Kroger, the grocery receipt, a more detailed examination of the food available at Kroger, a similar investigation at Whole Foods, a cost-comparison between the two grocery stores, tracing the sources of foods purchased by the Folley's, meetings with local organizations involved in the Folley food system, and internet research for background information and to follow up on our findings. More detailed explanations of each form of gathering information are discussed below. As partners, we communicated by way of telephone conversations, e-mail exchanges and frequent meetings to share and discuss individual findings and to plan our next steps.

Discussions

We met frequently with Harold to learn what aspects of the community food system in Charlottesville affect him and his family; and how they relate to larger issues of accessibility and health. We

posed various questions, whose answers often turned into insightful discussions and typically included an anecdote or two. A couple questions that instigated particularly interesting conversations included: What influences your food decisions? What are your priorities when grocery shopping? What percentage of your income goes towards food? What problems do you face when shopping for food? What, if anything, can and/or do you do to minimize cost? We aimed to ask questions that did not suggest any particular answer but rather, ideally, invited honesty in the spirit of trust and mutual benefit.

Food Log

We were able to take a close look at the Folley's diet by examining the Folley Family Food Log, which we designed and delivered to the family after they generously agreed to record what they eat for two weeks. Clarissa took charge of the food log and we are grateful for her time and effort. The log provided space to note food, and drinks consumed, as well as brand names if applicable for breakfast, lunch, dinner and snacks. After two weeks, we picked up the food log and began to review Clarissa's notes, which provided us with a good idea of what foods and drinks are included in the Folley's diet.

We faced a couple unforeseen challenges upon attempting a nutritional assessment from the log. First, portion sizes were not included. For example, one morning breakfast consisted of "eggs" and "toast." To address this unknown dependant variable, we decided to analyze meals based on one serving portions, except where noted. So, for the breakfast noted above, we based our analysis on two eggs, and two slices of medium sized bread. We also had to decide how to deal with condiments and fat added during preparation such as butter to pasta, mayonnaise added to a sandwich or, in the case above, milk added if the eggs were scrambled and jam or butter for the toast. We chose to ignore these variables because it would be impossible to accurately include them in our analysis. Overall, the food log was a simple but effective way to learn in more detail what types of foods and drinks comprised the Folley diet.

Grocery Shopping

On Saturday, April 5 at 2 p.m. we met Harold and two of his sons in the parking lot outside of the Kroger on the right side route 29 north, about two miles from Grounds. For the following hour, our objective was to observe what the process of grocery shopping is like for the Folley family. We noted, in particular, Harold's remarks, comments and questions from the two little boys, Harold's responses back, the food purchases made, the food purchases not made, the interactions between Harold and other individuals in Kroger, and the overall atmosphere throughout the trip. We were interested to learn not only what kinds of foods the Folley's purchase, but also what the process of purchasing groceries is like for the family and how it impacts their overall wellbeing. Harold and his boys were on a first-name-basis with a few Kroger employees, friendly to everyone around, and seemed to be in good spirits while shopping. More details on this experience and what we learned from it are found bellow, in "Findings."

Grocery Receipt

Harold generously allowed us to retain and look over his receipt from the grocery shopping trip to Kroger discussed above. While we were careful not to jump to any subjective conclusions about the contents of the receipt, we objectively evaluated the items purchased for cost, quality and nutritional value. We compared the items on this receipt to other items in Kroger as well as to similar items available at a more upscale food store known to promote organic and nutritious items: Whole Foods. The qualitative and quantitative findings we drew from the grocery receipt and price comparisons provided us with telling information about the structure of our community food system.

Examination of the Food Available at Kroger

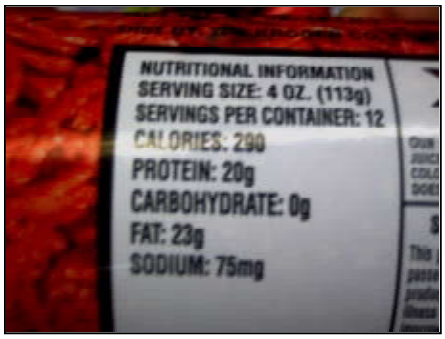
Following our grocery shopping trip with Harold, we returned to the aisles of Kroger to look more closely at the options available for purchase. Due to the size and scope of the huge grocer, we chose to look at the costs of brand names items compared to their Kroger, or generic, counterparts, and at the specific food

choices Harold made in the context of what other items were available for purchase at the time. Additionally, conducted a qualitative comparison between the processed foods frequently purchased by the Folley's and the healthier items found in the produce section and the deli area.

Cost Comparison between Kroger and Whole Foods

After collecting Harold's grocery receipt and examining price variations between brand and generic items at Kroger, we switched gears and proceeded to Whole Foods. We took Harold's list of purchased goods from Kroger, collected the same items at Whole Foods, and then calculated the cost of the food in our cart, which came from the exact same list as Harold's purchases, but was bought from a very high end food retailer. We followed Harold's example as closely as possible, choosing the Whole Foods generic brand whenever available, unless there was a special deal on another brand in which case we chose whichever was the least expensive. An example of the method we used is given below. It is also worth noting that these hamburgers from Whole Foods are sold by individual patties, whereas the meat from Kroger is sold in bulk.

Whole Foods hamburger patty = 3.99/lb



Kroger Ground chuck: 48 oz = $5.97

= $1.99/lb

Tracing the Source: Food Map

Next, we traced, as best we could, the source of selected foods from Harold's grocery list in order to create a food map. Many processed foods originated at private corporations that were unwilling to provide information about the source of their products. Additionally, many distributors refused to provide information about their sources. In these cases, we marked the last distributor, factory or headquarters to which we

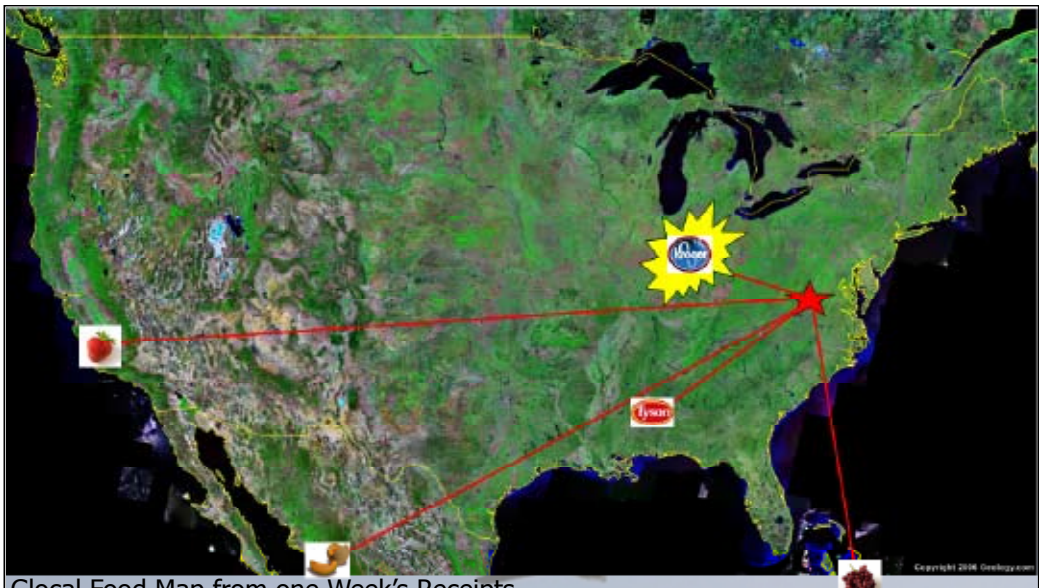
were able to trace the product. As a result of these difficulties, we were only able to trace a few of the 35 products listed on the receipt to their original source. The remainder were represented by there known distribution center, which was most recently Kroger's national headquarters in Cincinnati, Ohio.

Local Organizations

We met with Social Services and Loaves & Fishes, two local organizations that play a role in the Folley's food system. Sue Moffett at Charlottesville Social Services provided us with information about the history of Food Stamps and how the system works in Charlottesville. She also included some interesting anecdotes from her own work; and discussed the possibility of increasing the access of low-income consumers to fresh fruits and vegetables through the Farmer's Market.

We also met with members of Loaves & Fishes during one of their Tuesday evening distribution times. Although we did not schedule a formal meeting, by arriving at the distribution site fifteen minutes before they closed we were able to discuss their program while also helping to clean the center. In a short period of time, we had learned about the number of residents they serve regularly, the sources of their food, the nutritional value of their food, and issues controlling these factors.

Glocal map with explanation



Glocal Food Map from one Week's Receipts

The glocal map for the Folley family's diet was based on selected items from a shopping receipt for one week of food. The total cost of the $79.76, and all of the items purchased were either Kroger brand products or the least expensive brand of that particular product. Because of the huge proportion of items that were Kroger brand (18/35 products or 51% of all purchases), most of the products were not able to be traced to their origin. Tyson Chicken, another corporation that provided a significant portion of the Folleys' purchases, was also unwilling to provide information about the sources of their products.

Of the products that could be traced based on their labeling, none of them originated within 1000 miles of Charlottesville. The Folley's grapes came from Chile, their cantaloupe from Mexico, and their Strawberries from Southern California. This map demonstrates that no foods consumed by the Folley family during this particular week (April 5th to April 12th) were local. Additionally, it is worth noting that none of the foods purchased during this trip to the store were organic or ecologically grown. These factors indicate that the foods consumed by the Folleys come at a very high ecological cost. Every single 5 calorie strawberry, for example requires approximately 400 calories of jet fuel to travel across the United States. When the inputs for inorganic fertilizers and pesticides are added to the equation, each of these calories consumed by the Folleys requires several hundred calories to produce.

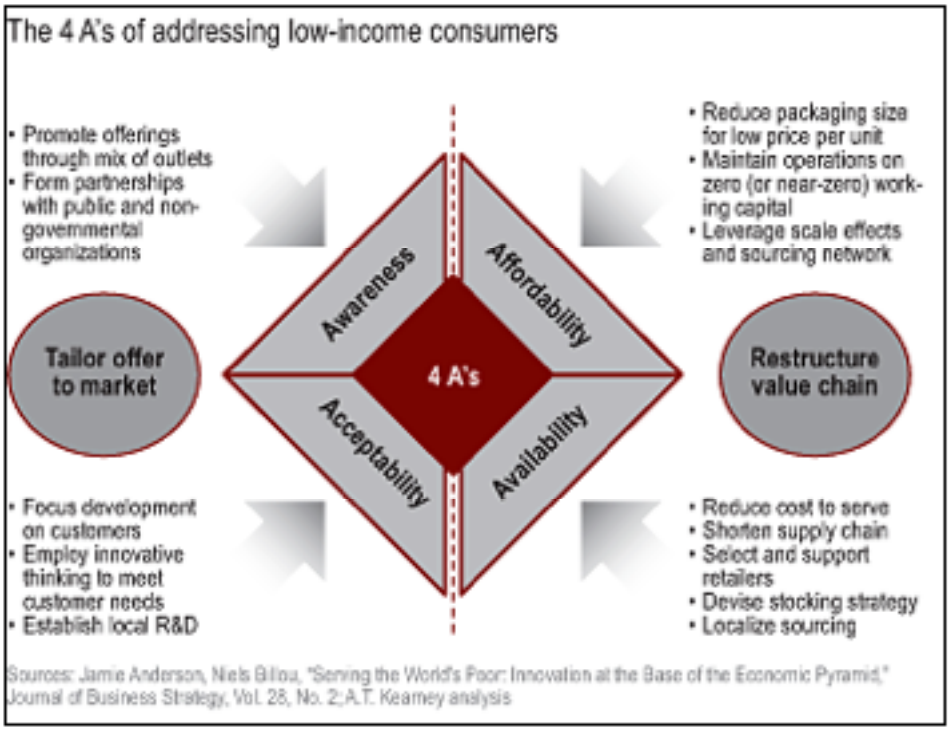
From our interviews with Harold and Clarissa, it became clear that the Folleys do not make such unsustainable food choices as a result of ignorance or apathy. Even though they are conscious of the benefits of local and organic food, forces outside of their control dramatically limit their food options. The reasons for these unsustainable food purchases and their effects will be explored in the coming sections.

Challenges facing our food system

Despite our fundamental need for food to survive, most people go about their daily lives completely oblivious to the enormous, complex and pervasive system that keeps us fed. As a nation, our community food system is strong, advanced and productive; and yet, we are facing health problems and nutrition inadequacies of mammoth proportions. Our smaller community food system here in Charlottesville also faces serious challenges. For our project, we examined the problem of access to healthy food: Many Charlottesville

residents have great trouble obtaining a nutritionally sound diet. Thus, although nutritious food is available in our town, it is not accessible to many of our fellow community members.

Problems of access to adequate nutrition, which may have financial, physical or social origins, hit people with a limited income the hardest. These disadvantaged socio-economic groups are particularly vulnerable; and, consequently, they may be forced to eat a "less than optimally varied or nourishing diet," resulting in "social inequalities in patterns of ill-health" (RTTT). Although food choice is a matter for the individual, the U.S. government has a responsibility to ensure that every American has proper access to healthy food so that every American - independent of age, gender, race, socio-economic status, or place of residence – has an equal opportunity to make healthy choices.



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Even if the government refuses to acknowledge this charge as a moral duty, it should nevertheless act on the imperative in the interests of public health, disease prevention and the nation's future financial health, which could suffer greatly from public costs of treatment for preventable medical conditions such as diabetes, hypertension and heart disease. Diet-related health inequalities follow nutritional equalities, which follow unequal access to nutritious food. To fight health-inequalities and stall the mounting cost of

treating future complications of malnutrition, we must close the gap between low-income individuals and a healthy diet by either increasing their purchasing power or by increasing the range of foods available to include healthy options at affordable prices. First, however, we must reject the elitist approach to public health that claims "life expectancy would grow by leaps and bounds if green vegetables smelled as good as bacon" (Doug Larson). We must also denounce the assumption that eating a healthy diet will be easy once "people learn the value of such foods and can identify them in the marketplace as result of education and good labeling" (Raloff). These misleading representations of the reasons why some people don't buy fresh fruits and vegetables must be replaced with reasons why many people can't do so, which involve understanding, most importantly, that access to nutritious food is not universal. "We thought that we had the answers," Bono once said. "It was the questions we had wrong." The question we should be asking is: can everyone living in Charlottesville afford to be healthy?

Findings, Insights & Lessons:

Over the two months that we worked with Harold Folley and his family, we were able to collect significant information from the food log, frequent conversations, grocery shopping, and meetings with related organizations. We explored the hypotheses that families living in public housing have difficulty accessing sufficient food, and that local and nutritious food options are completely inaccessible in this environment. Through our work with the Folleys, we determined that access to sufficient food is not a problem in this community as a result of the assistance provided by various aid organizations; but that many people have almost no access to local or nutritious foods.

We began our research by reviewing the food log completed by the Folleys that documents their food consumption over one week. A sample of two days from this log can be seen in Figure 1. As discussed previously in the methodology section, we faced some problems while interpreting information from the food log. However, the qualitative information gathered from the recordings in the log indicates that the diet of the Folley family was predominately composed of foods low in nutritional content. This data contrasts strikingly to the information obtained in discussions with Harold and Clarissa Folley about their

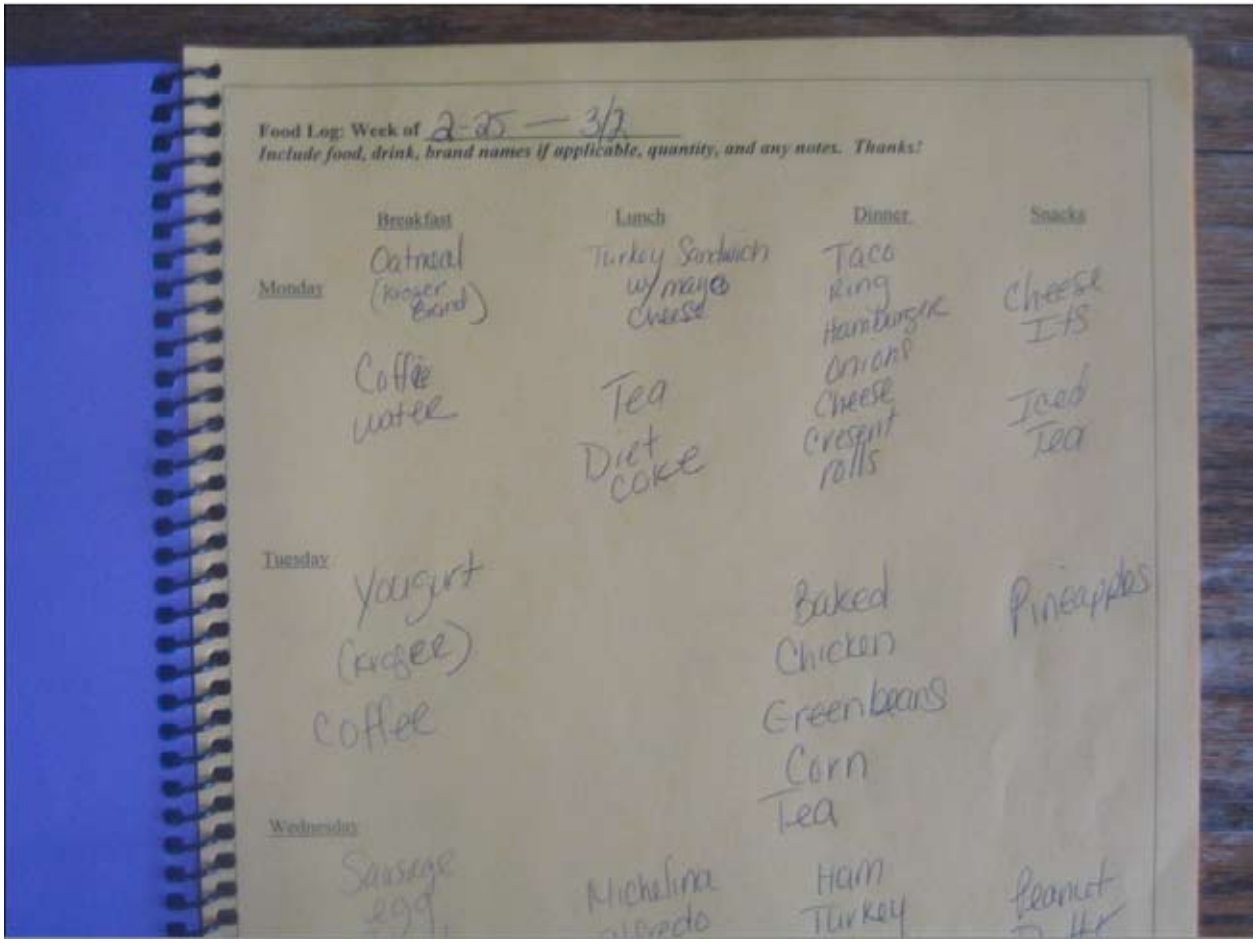

Figure 1

knowledge of nutrition and healthy foods.

We continuously found in our conversations with the Folleys that they are very aware of what foods are healthy and what foods they should be eating to promote wellness. Harold knew what was meant by the term "local food," describing it as "food from close by that is free of chemicals, pesticides, and antibiotics." He said he has learned a lot about local food from one of his co-workers who is a local farmer. Harold was also very clear about the importance of eating "fresh fruits and vegetables" to control his diabetes; and that he is not currently eating the best diet for a diabetic. When asked whether he eats a healthy diet, Harold responded with an animated "Hell No!" Along with this nutritional awareness, one of the recurring themes of our conversations was the desire for "fresh vegetables." Harold said that the desire for fresh vegetables was one not isolated to himself, but shared among many residents living around him in the Westhaven community. If our conversations with Harold revealed his knowledge of healthy and local foods and his desire

for them, but he is not currently eating them, then there must be factors beyond the control of the Folleys that influence their food purchasing decisions.

From our frequent conversations with the Folleys, we found that they are exceptionally knowledgeable of the aspects of the Charlottesville food system that affect their lives. Unlike many Charlottesville consumers who may actively pursue local or organic groceries and yet remain completely oblivious to the costs of the foods available for purchase, Harold and Clarissa are aware that food from Harris Teeter costs, on average, about one dollar more than food from Reed's Supermarket and Kroger, where they do their shopping. They also commented that recently, Food Lion has become too expensive for their regular shopping trips. Harold and Clarissa talked extensively about relative prices, even inside Kroger, noting, for example, that oftentimes low-fat versions of a particular product are more expensive then full-fat versions. Harold knows that financial restrictions prevent his family from eating the most beneficial diet for good health; but, at the present time, he has no choice but to provide the food he can afford with what he has.

To elaborate on how prices control what products are available for purchase to the Folleys, we are going to return to their food budget. As previously mentioned, the family spends approximately $150 every two weeks on food, which amounts to $300 per month or 15% of Harold's income. This figure breaks down to $10.70 per day for food in the household. During the school year, the Charlottesville City School System provides the five children living in the household with free meals. However, during breaks from school, all seven members of the family live at home and eat all of their meals at home. Assuming that during a break from school each family member eats an average of three meals per day, the entire Folley family consumes an equivalent of $3.57 worth of food per meal, or $0.51 per meal per person. To compare, a salad from Revolutionary Soup costs five dollars or more, an individual dinner swipe at Newcomb Hall costs over ten dollars, and an entrée from Basil costs over thirteen dollars, not including beverage or tip. Harold frequently commented on the extremely high cost of eating out at local restaurants, and these examples explicitly shows his reasoning. Based on the family's food budget, these establishments, which are so familiar to members of the University community, are completely inaccessible. So, what do the Folleys eat? Simply put, they buy and eat what they can afford.

We found that, with almost no exception, the Kroger brand is strikingly less expensive than other-

wise identical items with a well know brand on the front of the packaging. A shocking example of this price disparity can be seen in Figure 2, where "Apple Dapples," Kroger's name for Kellogg's Apple Jacks, is priced at $1.89 per box and sits end-to-end with the branded Kellog's Apple Jacks priced at $3.19 per box. These cereals are identical except for their packaging. Overall, we found most Kroger brand items to cost almost half as much as their recognizable counterpart. This comparison isn't even related to nutrition; it simply demonstrates the inaccessibility of many items located in budget supermarkets to families like the Folleys.

During the trip to Kroger that we observed, Harold purchased one week's worth of food with a total bill of $79.76, including tax. The day of our trip coincided with the first day of Charlottesville City Schools' spring break; Harold indicated that he was trying to purchase some extra food for the kids who were going to be home all week, but that he was also concerned he would exceed his $75 budgeted for the week. He consistently picked out brands on sale; and if there were no special deals, he bought the least expensive option.

The receipt from this trip can be seen in Figure 3. It reflects a wide range of food including chicken breasts, soda, cereal, strawberries, bread, flour, carrots and bacon. However, the quantity of the healthier items purchased, like grapes or strawberries, was much smaller than that of the more processed, fatty items such as ground chuck or barbeque chips. Take, for example, the box of about twenty strawberries Harold purchased for $2.50, compared to the 48 ounces, or twelve servings, of ground chuck priced at $5.98. The receipt also noted that the Folleys saved $27.18 with their Kroger card, which is 27% of their total bill before the discount. These savings make a huge difference.

Figure 2

Figure 3

To further evaluate the information from the shopping trip with the Folleys, we conducted a mock shopping trip to Whole Foods, an area retailer known for supplying organic and local foods, and attempted to purchase the equivalents of the items listed on the receipt from the Folleys' trip. We found a dramatic difference between the costs of items at the two stores. The summary of the trip to Whole Foods can be seen in Figure 4 below. After we removed several items that could not be found at Whole Foods (bologna and bulk packaged soap) from the list, we found the cost of Harold's groceries from Whole Foods to be $165.44. This total is more than double the $73.63 sum of the same items from Kroger. If the Folleys were to attempt to shop for the organic and local foods offered at Whole Foods, they would not even be able to purchase half of the quantity of food now needed for the household. Furthermore, when we compared the unit costs of selected items from these two stores, we observed dramatic differences. Chicken serves as a particularly telling example: The Tyson's brand chicken on sale in Kroger was listed at a unit price of $0.99 per pound. The organic, naturally raised, Whole Food's equivalent was listed at a unit price of $6.29 per pound. These figures demonstrate a price increase of almost 650% from the Tyson's chicken to the option we most closely associate with healthy eating habits. These comparisons effectively prove that organic and local food options in supermarkets are not available to households like the Folleys.

We also asked Harold about other options within the current local food system to investigate what has prevented him from utilizing them so far. He explained that Community Supported Agriculture programs (CSAs) were not an option for him because, when living paycheck to paycheck, he never has a surplus of anything near the almost $400 needed to purchase a share. Additionally, and perhaps more importantly, Harold commented that until our questioning about CSAs, he was unfamiliar with these programs because they have never been advertised or even mentioned in his community. We also asked Harold about the Charlottesville Farmers' Market and Farmers in the Park. He again cited inaccessibility and lack of knowledge about the markets' offerings as huge barriers; he has never seen an advertisement for these establishments in his community. He elaborated on the specifics of his first point by explaining that his family, and many other families living near him, must buy food in bulk to reduce costs. The need to buy in bulk and limitations of paychecks and food stamps limit his household to one grocery trip every two weeks and some other households to one trip every month. Such infrequent trips make purchasing many fresh vegetables dif-

ficult because, as Harold put it, "if you buy fresh carrots at the beginning of the month, you ain't gonna have carrots at the end of the month." Unless new food systems are developed to allow low-income families access to foods more frequently, they will remain confined to purchasing predominately frozen and non-perishable goods.

Whole Foods Grocery List & Prices

Chicken breasts (x4 packages): $6.29/lb (7.9 lbs = $49.81)
12 pack soda (x2): 12 packs unavailable, 6 pack = $2.49 (24 sodas = $9.96)
Boxed cereal (x2): organic, $3.39 each (2 boxes = $6.78)
Bacon (x2): $4.49 each (2 packages = $8.98)
Pepper: organic, $2.99
Ground chuck (x2 at 3lbs each): $4.19/lb family pack (6 lbs = $25.14)
Large bag of chips (x3): $2.99 each (3 bags = $8.97)
Grapes: $2.49/lb (1.7 lbs = $4.23)
Salsa: $2.99
Salad bar: $3.36
Pre-packaged ham: $3.69
Pre-packaged turkey (x2): $4.99 each (2 packages = $9.98)
Strawberries: organic, $4.99 each
Carrots: $2.29
Loaf of bread: $2.29
Bagged lettuce: $2.99 each
Flour: $2.39
Italian salad dressing: organic, $1.99
Non-dairy creamer: $1.89
Soap (package of 6 bars): sold individually, 1 bar = $0.99 (6 bars = $5.94)
American cheese: $3.79

Total at Whole Foods: $165.44

Total at Kroger: $73.63

Figure 4

When interpreting these findings, it is important not to hold institutions like Whole Foods and the vendors at local markets responsible for the inability of low-income communities to access local and nutritious foods. These establishments represent only the surface of our nation's large, complex agriculture system, which is characterized by large subsidies for corporate agriculture which produces the corn and soybeans that are processed into so many of the cheapest foods available in our country. Figure 5 is a chart created by The Money Blog that shows the effects of these subsidies on the prices of many well known foods. Many foods composed primarily of byproducts of highly-subsidized corn such as cornmeal, Cheetos, and Coca Cola can be purchased at very low costs: 200 calories cost less than 50 cents. Contrarily, fruits and vegetables – especially those produced locally – cost much more: $1.45 per 200 calories for apples and $2.55 per 200 calories for grapes. The disparities in these prices can be traced back to our national government's farm policies, and it is important to note that these policies negatively affect many local farmers just as much as low-income families like the Folleys.

Findings from our research reveal many barriers actively preventing the Folleys from accessing quality foods. The major factor is money. Nutritious and local foods are quite simply inaccessible to the

Folleys. They are aware of their benefits and have expressed a desire to purchase them, but they cannot afford to do so within our current food system. This inequity must be addressed by members of the local food movement in order for the movement to truly become a success. In a city where 25% of the residents live below the poverty line, low-income needs and concerns must be addressed to create a sustainable and just local food system.

Ideas & opportunities for change

After we concluded our research, we collaborated with Harold on how to improve local and nutritious food options in low income communities. We propose the following three steps listed on the table below.

Recommendation to Improve Food Access
for Low-Income Communities

1. Make local and nutritious foods available at affordable prices at stores where low-income households shop.
2. Find ways to engage the low-income residents with the existing farmers' markets
3. Work with low-income residents to help them develop systems to grow and distribute fruits and vegetables.

Our first recommendation is to find ways to make local and nutritious available in stores frequented by low-income families. With the exception of a small organic food section, the Kroger on Hydraulic Road where the Folley's shop has very few pesticide and chemical free options and no local food options. Harold said "if local food is there and I can afford it, I'll buy it." Thus, the challenge becomes making these foods available to all who would like access to them. Of course, this is a complicated process that will involve much more than simply lowering costs in the store; but we must begin making steps to place local and chemical-free foods in budget food stores.

Our second recommendation is to engage low-income residents in the existing farmers' markets. We envision two steps in this process: First, infrastructure that accepts food stamps as a form of payment must be set up at the farmers' market. Second, advertising that provides information about what the farmers' market offers and what transportation options are available should be targeted at low-income communities.

Along with Meghan Magennis, a fellow UVA student, we met with Sue Moffett from the Department of Social Services and Stephanie Maloy from the City Market to discuss these issues. The greatest challenge, they explained, is that purchases with food stamps require a wireless network, which is not set up in the Water Street parking lot or at Meade Park. Theoretically, if we were to install a wireless network at the Farmer's Market, low-income individuals could use their food stamps to buy fresh fruits and vegetables at reasonable prices. We continue to work with Meghan, communicate with Karen Waters from the Quality Community Council and with members of Charlottesville City Council in an effort to secure the approximately $1600 required to rent a ZBT machine that accepts food stamps and to establish a part-time position for an individual who can operate the machine on Wednesday evenings at Meade Park. In the coming weeks, we will be surveying vendors at the market and making arrangements to begin accepting food stamps at Farmers in the Park later this season or at the beginning of next season. Access to the Farmer's Market for people subsisting off of food stamps would be a great first step towards healthier diets for low-income communities. After we accomplish this goal, we will work with the agencies involved and establish connections in low-income communities to create an effective advertising campaign.

Our third recommendation is to work with low-income residents to develop systems to grow and distribute fruits and vegetables. The Quality Community Council's Urban Farm project is a great example of a local, sustainable system. We encourage Charlottesville residents to support this project as it continues to expand to new sites and demonstrate to residents of other areas how they can grow their own food and improve their health. We also encourage local agencies to work with the city market to donate leftover produce to low-income communities. Harold proposed a program where food is distributed weekly do different public housing projects through a regular rotation between the sites. He indicated that positive responses to such a program would be overwhelming if it could be implemented. If individuals living in public housing can work with city agencies to create and expand these projects, huge steps will be taken to improve access to local and healthy foods in Charlottesville's low-income communities.

Conclusions

Through the generosity and sincerity of Harold Folley and his family, we were able to have the opportunity to see our community food system from a perspective all-too-often ignored. Harold provided valuable insight into some of the issues that control the decisions of the 25% of city residents living below the poverty line. These perspectives need to be considered as the concept of glocal food and the local food movement continues to grow in this region. Currently, almost all nutritious, and even more so local, food is completely inaccessible to low-income residents living in Charlottesville's public housing project; and it is the responsibility of local leaders to ensure that these communities are not excluded as new programs are developed.

There are already several measures underway to address the concerns raised by this study; but there is much more that needs to be done to create a sustainable food system in the Charlottesville community. In addition to the work necessary at the local level to reduce inequities, measures must be taken to change policies at the national level to reform our government's broken system of misplaced subsidies. If these measures can be taken up in the future, the needs of all communities continually being addressed, we will be able to create a truly glocal food system where everyone has access to local and healthy food options.

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