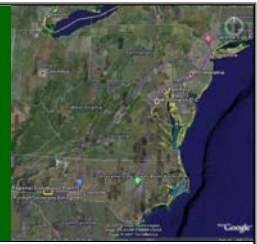




Sources of Food Served in Furman's Dining Hall: The Environmental Costs of Industrial Agriculture

Chris Bradt, Furman University, Fall 2007



Abstract

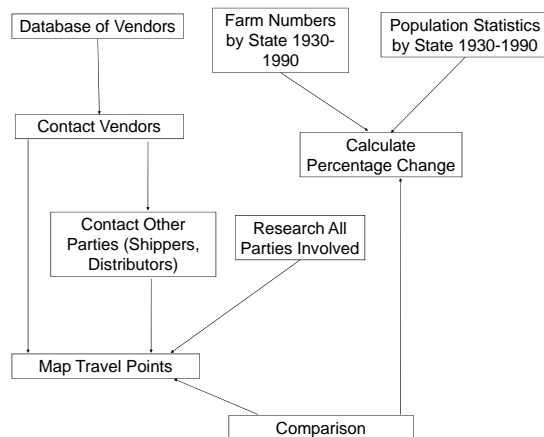
In the last century, people have become more removed from their food sources than ever before in human history. Even though we are only a few generations removed from a lifestyle in which subsistence farming was common, few people today consider the source of their food beyond the grocery store. This separation from such a basic aspect of life represents a fundamental problem with modern society: a feeling of distance from the natural world. This project aims to study the environmental cost involved in bringing food to the table at Furman University's dining hall. The hypothesis is that while Furman is one of the more environmentally conscious campuses in the country, it has not been able to avoid the environmentally costly processes of the American food growing, processing, and distribution system. An examination of the sources and travel paths of a selection of food items from a Tuesday lunch in the Dining Hall in May, reveals that the travel distances associated with much of the food served at Furman, even the locally grown produce, comes at a high environmental cost.

Background Research

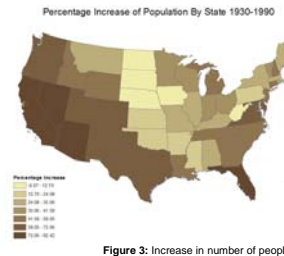
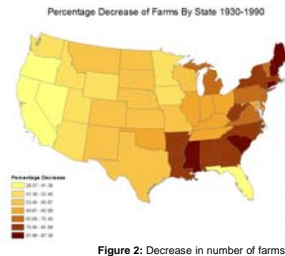
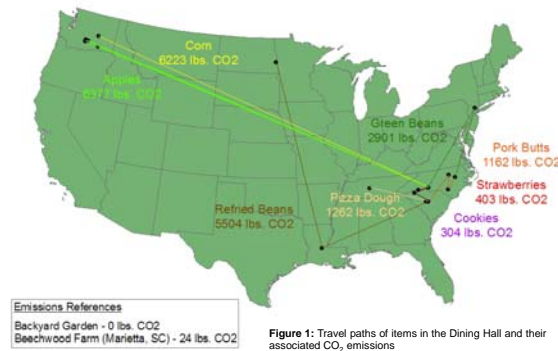
Before I began, I knew the most obvious obstacle would be picking through the massive bureaucracy of industrial agriculture and distributors. Some inquiries, like corn on the cob from National Frozen Foods, were surprisingly easy, and after a simple five minute phone conversation, I knew the entire travel path of the food item. In most cases, though, it was a seemingly endless game of tracking down more box label numbers and talking to a never-ending chain of growers, processors, shippers and distributors.

The first step of my project was contacting Susan Presto, Director of Dining Services, to see if she could provide me with the names of the companies from whom we purchase our food. I then proceeded to contact as many of the farms and shippers as possible, and after a few weeks, I had managed to track the complete paths of eight items in our Dining Hall. The paths of the pizza dough and cookies are not complete since it would have been impossible for me to track all of their individual ingredients within my time frame. In an attempt to illustrate the environmental footprint of the transportation, I used the typical gas mileage for tractor trailers and the pounds of carbon dioxide emitted per gallon of diesel fuel to calculate the pounds of carbon dioxide emitted for the transportation of each item.

Methodology



Food Travel and CO2 Emissions



Map Results and Explanation

Figure 1 illustrates the travel paths of each item tracked in the Dining Hall and the carbon dioxide (CO₂) emissions associated with their transportation. The food items included in this study are a sampling of a Tuesday lunch in May, and with the exception of the pizza dough and cookies, each item is traced back to the original farm. The two local produce purchases included in this study are strawberries from Chesnee, SC, and green beans from Goldsboro, NC. While the total travel distance of the strawberries remains reasonable, the green beans, which are grown only 336 miles away, are shipped to Mahwah, NJ, to be packaged before they are sent through the FreshPoint distribution plant in Charlotte to Furman, resulting in a total travel distance of 1296 miles and the emission of 2901 pounds of CO₂. While it is still advantageous to support local farms, the environmental benefit of this local purchase is erased by the long shipping distance.

Figures 2 and 3 offer complimentary data on the growing distance between Americans and the food they eat. Figure 2 shows the drastic reduction in number of farms in each state from 1930 to 1990. Even in the Western states where the drop is not as dramatic, the lowest decrease is still 28.57 percent in Nevada. Figure 3 shows the percentage increase in population for each state from 1930 to 1990. Even though imports and exports are not considered in this study, it is still obvious that the farms are much fewer in number even as the population has grown significantly, creating fewer options for local food and increasing the necessary travel distance for the food. Also, as farms have become fewer in number, they have become more industrial, having to focus on mass production of a single crop.

Conclusion

•Engaging in industrial agriculture has a significant impact on the environment through CO₂ emissions produced by transportation. As illustrated by the green bean example, the transportation of food items is not always rational and results in unnecessary environmental damages.

•There are fewer farms in America today, even though there are many more people. Although imports and exports are not considered, this statistic still suggests that American agriculture is becoming more industrial and that people are geographically getting further away from their food sources. While Furman makes an effort to purchase local food, they are by default engaged in a system of irrational food paths which runs contrary to the university's goals of sustainability.

Data Sources

*All US maps use a USA Contiguous Equidistant Conic projection with the North American Datum 1983.

Figure 1

US States: ESRI Database

Gas Mileage for Tractor Trailers: Yahoo Answers

<http://au.answers.yahoo.com/answers2/frontend.php/question?qid=20070719113317AAH1vIP>

CO₂ Emissions: Energy Information Administration

<http://www.eia.doe.gov/oiaf/1605/coefficients.html>

Paths of Food:

Apples:

Broetje Orchards – <http://www.firstfruits.com>

Borton & Sons – Marcus Hartmann, Pacific Pro

Evans Fruit Co. – Wesley Akiyama, Evans Fruit Co.

Sage Fruit – Chuck Yow, Sage Fruit

Corn: National Frozen Foods Headquarters

Cookies: Otis Spunkmeyer Headquarters

Green Beans: Konrad Gan, Supreme Cuts

Pizza Dough: Rich's Helpline

Pork Butts: Steele Byrum, Smithfield Foodservice

Refried Beans: JuDene Stroud, Allens, Inc.

Strawberries: Susan Presto, Dining Services

Figure 2

US States: ESRI Database

Farm Numbers: National Agriculture Statistics Service

http://www.nass.usda.gov/QuickStats/PullData_US.jsp

Figure 3

US States: ESRI Database

Population Numbers: US Census Bureau

<http://www.census.gov/population/censusdata/table-16.pdf>

Acknowledgments

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