



Healthy Food, Diverse Farms, Vibrant Communities

Cooperator

Harold and Marilyn Andersen, Joel and Amy Logan, Dean Lewis and Anita Maher Lewis, Susan Posch, Teresa Opheim and Rich Schuler and Tomoko Ogawa

Project Timeline

May 2010 to July 2011

Staff Contact

Tomoko Ogawa, 515.232.5661 tomoko@practicalfarmers.org

Web Link

http://tinyurl.com/pfilocalfoods

Funding

Leopold Center for Sustainable Agriculture On-Farm Research and Demonstration Program

Documenting local and distance food purchases

Written by Tomoko Ogawa

Abstract

Six cooperators documented their local and distance food purchases between May 1, 2010 and July 31, 2011. For this study, local food was defined as food produced within Iowa. After 15 months of data collection, the data showed that: a) while the lowest 15-months average of local foods purchases among the participants was 14.3%, half of the participants spent less than the annual national average food expenditure, b) for all the participants, percentage of local foods purchases changed with the season. This change was different among participants, as their food habits impacted how their trend line shaped, c) the total food expenditure decreased as the percentage of local foods purchases increased, d) all the participants for this study had ties to a local food network in their community and practiced preserving, which helped them buy local produce.

campaign, which encourages people to take the pledge to spend 10% of their weekly food dollars locally, and "The 10% Campaign" in North Carolina, where people can join at any time to submit weekly updates on how much they estimate to have spent on local foods. These programs are easy to join, and have served as great marketing tools.

based on a rigorous record-keeping. The foundation of the study is that to increase local food purchases, or intentionally



Local food study participant Rich Schuler

spend a certain percentage of dollars on locally-raised food, it is important to first grasp how much money an individual is currently spending on foods grown locally and in distant places

Background

About 30 PFI members indicated interest in increasing their food purchases from PFI farmers in our 2009 member survey. There are many programs where people pledge to buy more local foods as well as studies on the economic benefits to the community in buying local. Examples of these local foods initiatives include the "Greater Des Moines Buy Fresh Buy Local"



Local food study participants Joel and Amy Logan

Although the aforementioned food accounting systems are "easy" for the participants, PFI staff suspected that the resulting data would not necessarily be accurate in terms of the actual food dollars spent on local or distance food due to individual biases. Therefore, instead of overlapping the existing programs, we decided to conduct a local foods project



Local food study participant Marilyn Andersen

Method

PFI solicited 30 individuals from its 2009 member survey, who had expressed an interest in participating in PFI programming to increase their food purchases from PFI farmers. In addition, we solicited participation from Farm to Folk (F2F) members. F2F connects farmers using sustainable methods of agriculture with greater Ames-area consumers through a vegetable subscription service, or Community Supported Agriculture (CSA)

**Table 1**

Sample food purchases spreadsheet											
PFI Local Food Project: Participant name											
Date	Farm to Folk a la carte		CSA	Fareway		Others		TOTALS			
	Local	Distance	Local	Local	Distance	Local	Distance	Date	Local	Distance	Total
1-May-10			0.64				5.49	1-May-10	0.64	5.49	6.13
2-May-10			0.64		51.85			2-May-10	0.64	51.85	52.49
3-May-10			0.64					3-May-10	0.64	0.00	0.64
4-May-10	7.00		0.64					4-May-10	7.64	0.00	7.64
5-May-10			0.64				30.00	5-May-10	30.64	0.00	30.64
6-May-10			0.64					6-May-10	0.64	0.00	0.64
7-May-10			0.64					7-May-10	0.64	0.00	0.64
8-May-10			0.64	2.09	2.88			8-May-10	2.73	2.88	5.61
9-May-10			0.64					9-May-10	0.64	0.00	0.64
10-May-10			0.64					10-May-10	0.64	0.00	0.64
11-May-10	17.50		0.64				13.63	11-May-10	18.14	13.63	31.77
12-May-10			0.64					12-May-10	0.64	0.00	0.64

**Table 2**

Local food spread sheet totals sample		
1-May-10 through 31-Jul-11		
Local	\$2,752.99	46%
	\$6.02	per day
Distance	\$3,275.97	54%
	\$7.17	per day
Total	\$6,028.97	100%
	\$13.19	per day

shares and on an a la carte basis. At the start of this project on May 1, 2010, there were 22 households and two businesses participating. Fifteen months later, six households completed the project.

PFI provided the participants with an Excel file to record their food purchases. The file contained three spreadsheets. In the first sheet, participants entered their food purchases (dollars/day) (see Table 1). Participants' data was used to calculate the percentage of local versus distance food purchases, cumulative food spending and an average daily food expenditure (see Table 2). From the data 30-day and 90-day moving averages of food purchases per person respectively were calculated (see Graphs 1 and 2).

To create a uniform data set, participants used the following protocol:

1. "Local" = within Iowa
2. Do not add in items that are not food and drink (ex.: paper products, cleaning supplies, personal hygiene supplies)
3. Baked goods are "local" if baked locally
4. Do not add in home gardening equivalents--this survey is measuring purchases from Iowa farmers
5. Do not include sit-down restaurant expenditures
6. Do not include tax and bottle deposits
7. Include drink purchases, such as milk, juice, wine and beer

Participants who had CSA subscriptions were asked to provide the start/end dates of their shares as well as the cost, which

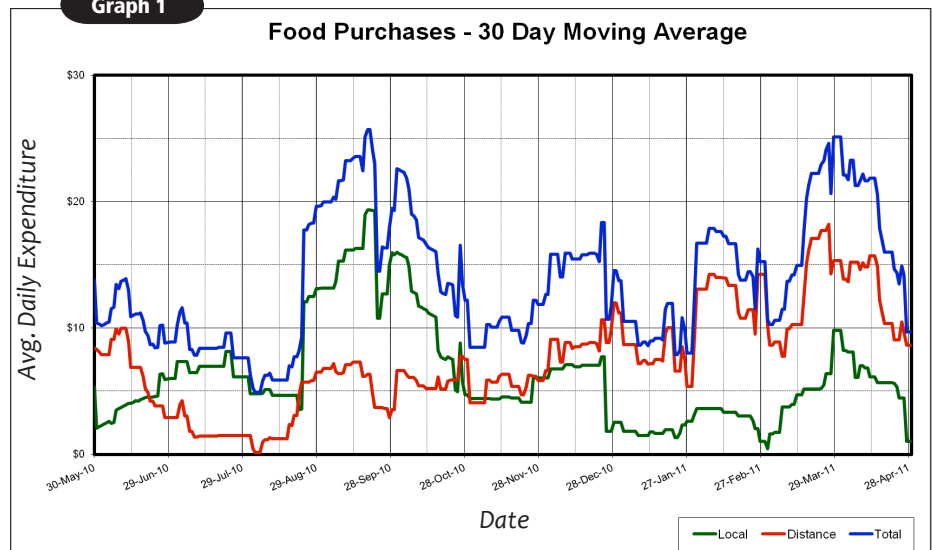
was divided by the number of days for the period when they received produce. Costs were distributed across the CSA subscription period.

**Results and Discussion**

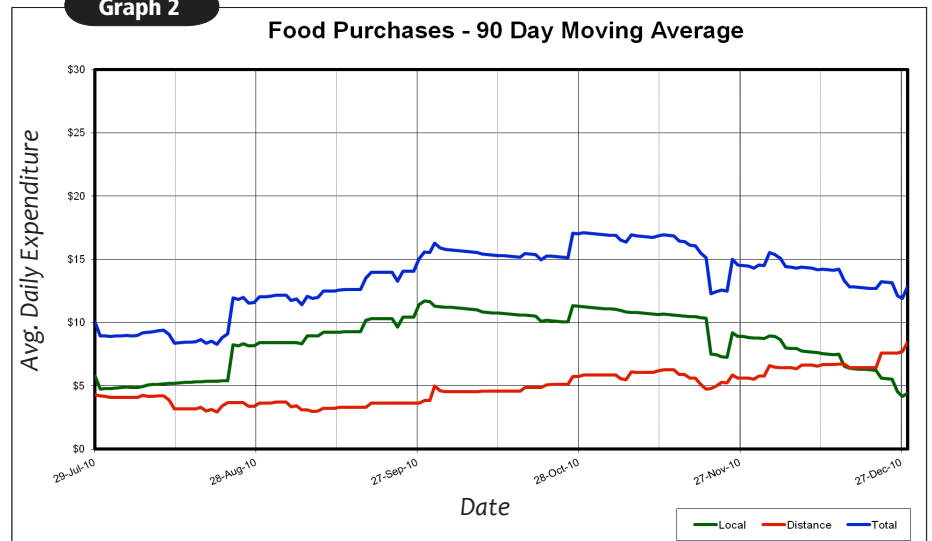
(1) Comparison of national average annual food expenditure and PFI Local Foods Study participants' annual food expenditure

On average, the participants allocated 31.4% of their annual total food spending on local foods. The lowest annual average for local food percentage was 14.3%, which means all the participants in this study were purchasing local foods to some extent. The annual food expenditures of the participants were compared to the national annual food expenditures reported by the

**Graph 1**



**Graph 2**



United States Department of Agriculture (USDA). The USDA publishes these data every several years, and the newest data available were from 2004. The Consumer Price Index was used to adjust for inflation between the USDA data (2004) and the PFI study (2010-11). As a result, three of the six household participants spent below the average annual food expenditure (See **Tables 3 and 4**).

2) Changes in percentage of local foods in relation to the seasons

With Iowa's climate, fruits and vegetables that are available locally vary greatly depending on the season. Consequently, percentage of local food consumption was suspected to decrease for all participants outside the growing season.

To analyze the data for seasonality, we divided the year into four seasons according to the availability of produce: early summer (May 1 to July 15), late summer (July 16 to October 15), fall (October 16 to December 15), and winter (December 16 to April 30).

Late summer or early summer had the highest percentages while winter or fall had the lowest percentages of local food purchases for all but one participant. The dollar amount spent on local foods had the same basic trend of highest in late or early summer and lowest in winter (see **Graph 3**). However, Household 3 had the opposite trend as they had the highest percentage on local food purchases in fall, followed by winter, late summer and early summer. The dollar amount spent on local food was the same order, with fall being the highest and early summer being the lowest. This opposite trend was a result of their gardening practice. Household 3 owns a large garden (approximately 80 ft. x 60 ft.) and they try to grow all the produce they eat during the season. **Graph 3** shows how the percentages of local food purchases shifted for all the participants throughout the 15-month study.

3) Percentage of local food purchases and total dollar amount spent on food

Our statistical analysis showed a negative correlation between the total dollar amount and the percentage of local foods.

**Table 3**

**U.S. average annual food expenditure**

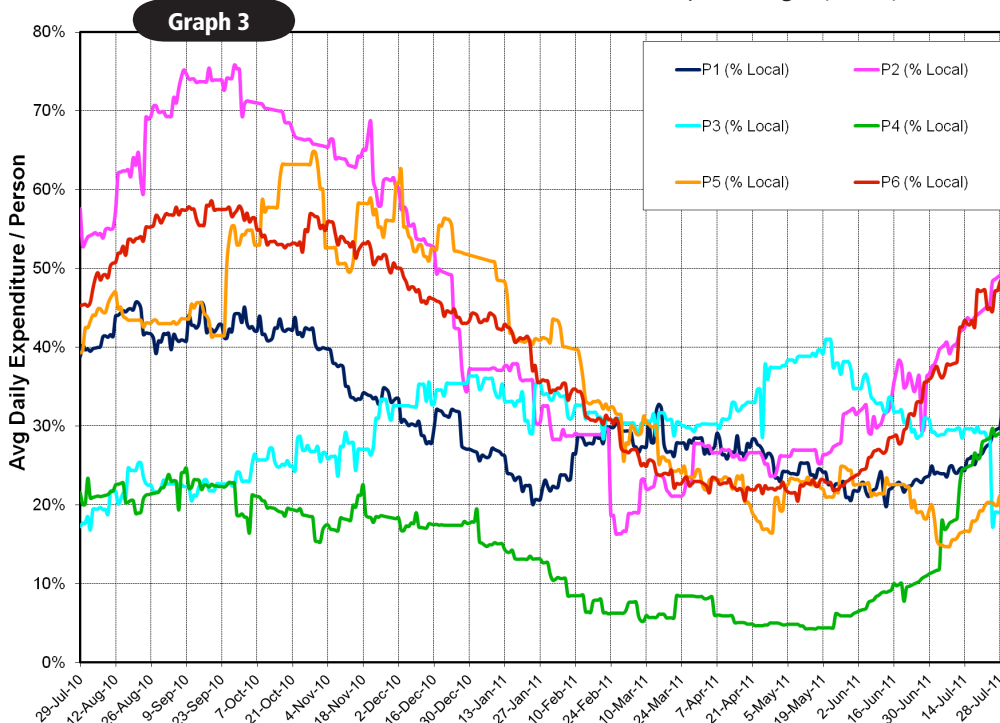
	Average annual food expenditure adjusted for 2010-2011* (per person)
Overall average	\$1,616
One-member household	\$1,976
Two-member household	\$1,986
Three-member household	\$1,621

**Table 3:** Indexed Average Annual Food Expenditure in the US (2004 to 2010-2011) \* Average annual food expenditure adjusted for 2010-2011 was calculated as follows: Average annual food expenditure in 2004(ERS) x 1.2 (Consumer Price Index for food and beverage 2010/2011)

This indicates that as the percentage of local food purchases increased, the total dollar amount spent decreased. For example, Household 4 had the highest percentage of local food purchases (early summer at 27.23%) when it had the lowest total dollar amount spent on food (\$441.53, monthly average per person). Household 5 also had the highest percentage of local food purchases in late summer at 73.42%, when its total dollar amount spent on food was lowest at \$50.74 (monthly average, per person) (see **Tables 5**). Household 4 had several dietary restrictions, and therefore distance food included specialty food such as organic, gluten-free, vegan, no-corn products, which tended to be more expensive. Therefore, as Household 4 increased its distance food purchases, the overall food expenses increased as well. Household 5 was traveling in the second week of October, which falls under late summer in our analysis. Therefore this might have contributed to the decrease in food expenditure. However, as late summer covered three months, the absence of one week should not have impacted the data greatly.

4) Connections with local food networks and knowledge on food preparation

As we recruited the participants through Farm to Folk (mentioned above), all of the participants were members of this on-line local food buying system,



**Graph 3:** % of Local Food Purchases - 90 Day Average

**Table 4**

**Annual food expenditures for PFI Local Food Study participants**

	Annual local food expenditure (per person)	Annual distance food expenditure (per person)	Annual total food expenditure (per person)
Household 1 (two-member)	\$519.40	\$1,046.62	\$1,566.01*
Household 2 (two-member)	\$1115.37	\$1376.25	\$2,492.12
Household 3 (two-member)	\$475.00	\$1,116.90	\$1,591.89*
Household 4 (one-member)	\$1064.75	\$6247.52	\$7,312.27
Household 5 (one-member)	\$669.18	\$1179.91	\$1,849.09*
Household 6 (three-member)	\$1528.27	\$2250.26	\$3,778.53

**Table 4:** Annual Food Expenditures for PFI Local Food Study Participants

dramatically improving their connection to the network of local foods in the community. This might explain the high percentage of local food purchases among the participants. Household 1 particularly mentioned that eating locally became easier for them with the help of a support network such as Farm to Folk. All the participants also practiced preserving, which allowed them to purchase produce when availability was abundant and spread out the cost and consumption during the off-season. For example, Household 2 and Household 7 froze local berries during the season and ate through the winter, which became cheaper than buying conventional frozen berries at the grocery store. Household 2 also bought meat from local producers in bulk (1/4 Buffalo and 1/4 cow), which is another tip for eating local meat without increasing the food budget. Household 1 pointed out basic cooking skills helped them to eat more locally raised produce. However, they also noted most of the cookbooks do not allow variability nor teach skills such as how to use a whole chicken, that are useful when purchasing food locally, as local foods tend to be less processed than is standard in the grocery store.

**Conclusion**

Due to the small population size in this study, there is limited statistical confidence in the conclusions that can be drawn. Nevertheless, after 15 months of data collection, the key findings based on a small population size are as follows:

**Tips for increasing local food purchases**

From what the participants learned through this project, here are some tips for increasing your local food purchases:

- Start by reading labels and learning how far the food travels at the grocery store or food coop.
- Ask questions at grocery stores, farmers market and other food venues about where food is from. This builds awareness and shows that your desire to supporting local producers.
- Shop at farmers' markets.
- Join a CSA (vegetable subscription service).
- Join an online year-round local food outlet such as Farm to Folk, Iowa Food Coop or River Valley Co-op.
- Buy seasonal food in bulk and preserve it for use in the off-season.
- Purchase dairy and meat products from local farmers or lockers.

- Half of the local foods study participants' annual spending on food was below the national average, suggesting that eating locally raised produce does not necessarily mean increases to the food budget.
- Most of the participants increased their local food purchases in early and late summer, while their local food purchases decreased in fall and winter.
- The statistical analysis of the data showed a negative correlation between the total dollar amount spent on food and the percentage of local food purchases, meaning as the percentage of local food purchases increased, the total dollar amount spent decreased.
- Knowing the network of local food producers and/or outlets in the community is helpful to being able to eat locally raised produce. Skills such as cooking and preserving are also essential for eating local foods.

**References**

Blisard, N. and H. Stewart. Food Spending in American Households, 2003-2004. Economic Information Bulletin Number 23 Economic Research Service. United States Department of Agriculture. <<http://www.ers.usda.gov/publications/eib23/eib23.pdf>>

Bureau of Labor Statistics. Consumer Price Index - All Urban Consumers: Food and Beverage. <<http://data.bls.gov/cgi-bin/surveymost> >

**Table 5**

**Total average local food expenditures by season**

	Early Summer	Late Summer	Fall	Winter
Household 1	\$140.56/35.28%	\$149.46/40.44%	\$93.86/25.03%	\$96.18/24.99%
Household 2	\$151.50/54.85%	\$250.47/61.44%	\$196.80/33.11%	\$201.57/19.03%
Household 3	\$113.72/17.36%	\$124.06/24.31%	\$142.16/36.76%	\$146.39/34.64%
Household 4	\$441.53/27.23%	\$582.99/18.37%	\$817.86/12.99%	\$495.44/6.29%
Household 5	\$179.10/28.62%	\$50.74/73.42%	\$162.99/49.52%	\$168.40/21.35%
Household 6	\$323.13/56.06%	\$345.11/44.45%	\$265.03/37.82%	\$287.97/23.78%

**Table 5:** Total average dollar amount spent on food and percentage of local foods purchases according to the season (monthly average, per person)