

Examining Awareness of and Support of Regional Food Systems in Iowa:

Establishing a baseline of consumer knowledge
about regional food systems and
communication preferences

A report of market research conducted and prepared
for the Regional Food Systems Working Group of the
Leopold Center for Sustainable Agriculture
and The Alces Foundation.

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Executive Summary

This report details findings related to establishing a baseline of knowledge concerning Iowans' understanding of regional food systems and communication methods that would be most effective to educate Iowans about regional food systems. Data was collected in two phases.

Phase 1: Focus Groups

- Four focus groups were conducted across Iowa (Sioux City, Ottumwa, Ames, and Cedar Rapids; n=49) during June-July 2004.
- Overall, focus group informants were somewhat familiar with the types of products and processes associated with a regional food system, but not with the conditions that affect regional food systems or with the outcomes of a regional food system.
- Focus group informants suggested many different types of communication methods, but emphasized the need for the method to be attention-getting and to be from a trusted source, such as their family and friends. For this reason, word-of-mouth communication was a preferred method.
- Focus group informants would support a regional food system if the outcomes would benefit them with respect to reasonable prices, high quality products, and convenient accessibility.

Phase 2: Telephone Survey

- A telephone survey was conducted from October-December 2004. A representative sample (n=297) of Iowans was obtained through a stratification and randomization process.
- Most respondents (93.6%) were unfamiliar with the regional food system concept.
- Familiar respondents indicate more knowledge of the products and players associated with a regional food system than with the outcomes of a regional food system.
- Food safety, higher food quality, convenient access, financial sustainability, and reasonable prices were the most important outcomes of a regional food system to the familiar respondents.
- Preferred communication methods were television, newspapers, and signs/displays inside of grocery stores.
- Respondents most trust public health officials, doctors, and food professionals as sources of information about regional food systems.

Given this set of results, several recommendations are offered concerning educating Iowans' about regional food systems.

⇒ Focus on communicating the benefits of a regional food system to end-consumers

- Survey respondents clearly seem to be most interested in the health benefits a regional food system could provide, especially food safety and high food quality.

- Both the focus group informants and survey respondents indicated the importance of reasonable prices and accessibility related to the products of a regional food system. These need to be considered and communicated to end-consumers, also, though the issues are not as important as health aspects.

⇒ **Focus on increasing awareness and familiarity through television, newspapers, and grocery store signs and displays. Initially, use spokespeople perceived as expert (which should be relevant to specific benefit, e.g., food professional promoting higher food quality).**

- Even though television and newspapers can be costly media in which to communicate messages, there are ways to economize. Press releases and public relations events, for example, can generate free publicity in both media. Local television stations and newspapers may be more amenable to covering stories related to regional food systems than statewide media.
- Grocery stores will play a key role in disseminating information with respect to the benefits associated with regional food system products. Partnerships between producers/distributors of a regional food system with grocery stores is critical.

⇒ **Conduct on-going research with respect to promoting familiarity and support of regional food systems.**

- Further research should be conducted to more specifically identify effective messages/spokespeople prior to implementing any communication tactics.
- A study that more specifically focuses on the benefits of a regional food system would be beneficial.
- Additional research should be conducted to identify linkages between food-related behaviors and familiarity with regional food systems (e.g., grocery shopping habits).
- As communication tactics are implemented, periodic research to measure the impact on end-consumers' awareness of and familiarity with regional food systems should be conducted, and appropriate changes to the tactics made as necessary.

Introduction

The Leopold Center for Sustainable Agriculture is a research and education center with state-wide programs to develop sustainable agricultural practices that are both profitable and conserve natural resources. In partnership with the W.K. Kellogg Foundation's Food Systems Higher Education-Community Partnership, Practical Farmers of Iowa, Iowa State University Extension, the Henry A. Wallace Endowed Chair for Sustainable Agriculture and the ISU College of Agriculture, the Center created a Value Chain Partnership for Sustainable Agriculture (VCPSA), whose mission is to foster value chains that reward farmers who use high standards of environmental and community stewardship. The Regional Food Systems Working Group (RFSWG), an offshoot of VCPSA, "facilitates and promotes farmer, university, agency, and business partnerships that invest shared skills and resources to support resilient, community-based, environmentally and socially responsible regional food enterprises" (RFSWG mission statement). The study and findings reported in this paper were funded primarily by RFSWG, with additional support from The Alces Foundation.

A regional food system "supports long-term connections between farmers and consumers while meeting the economic, social, health, and environmental needs of the communities within that region. Producers and markets are linked via infrastructures that are efficient, promote environmental health, provide competitive advantage to producers, processors and retailers, encourage identification with the region's culture, history, and ecology, and equitably share risks and rewards among all partners in the system" (RFSWG definition, http://www.valuechains.org/rfswg/rfs_definition.html).

While this definition of a regional food system is well understood by some Iowans, it is unknown how familiar Iowans in general are with a regional food system. Obviously, facilitating the development of and supporting regional food systems will require that consumers throughout Iowa communities understand the benefits of a regional food system. Consequently, the purpose of this study was to establish a baseline of Iowan's understanding of regional food systems, specifically focusing on:

- Awareness/familiarity/knowledge of regional food systems;
- Linkages (disconnect) between knowledge and food purchase behaviors;
- Channels of communication preferred by consumers for educating them about food systems.

Method

The method used to examine these issues was broken down into two phases.

Phase 1: Focus Groups

Sample

A discovery-oriented approach was used to explore awareness and knowledge of regional food systems and to begin to uncover preferred communication methods with consumers. Four focus groups were conducted during June and July 2004. Three of the four focus groups were organized with the assistance of several community colleges and were conducted on community college campuses. The fourth focus group was conducted in the behavioral learning facility in the College of Business at Iowa State University. The location, date, and sample size of each group follows.

Sioux City, Iowa
Western Iowa Tech Community College
June 9, 2004
n=12

Ottumwa, Iowa
Indian Hills Community College
June 22, 2004
n=14

Ames, Iowa
Iowa State University
June 30, 2004
n=10

Cedar Rapids
Kirkwood Community College
July 1, 2004
n=11

The total sample size was n=47 (39 female). Two of the focus groups' informants were working adults (Ames and Ottumwa), while the informants of the other two groups were older community college students, many of whom were also employed full-time (Sioux City and Cedar Rapids). The demographic profile of the sample revealed the median age to be 37, 1-2 children at home, household income between \$50,000-\$75,000, some college education, living in small

towns. In addition, the informants reported doing 76-100% of the grocery shopping in their homes, which was the only screening criterion used for participation in the focus groups.

Focus Group Method

Each focus group was conducted by the primary researcher and followed the same format. After each informant introduced him/herself, they were asked to write down on the pad of paper provided to them any words/terms that came to mind when they heard the term “regional food system.” Next, they were given a set of 15 pictures (including pictures of farms, grocery stores, trucks, restaurants, etc.—see Appendix 1) and asked to choose the three pictures that they thought best represented a regional food system. Each informant was then asked to share his/her written thoughts and picture choices. This discussion was then followed by the facilitator asking a series of questions (see Appendix 2). When appropriate, follow-up and/or clarification questions were asked by the facilitator. Efforts were made to make sure that all informants had a voice in the discussions. Each focus group was 1 to 1½ hours in length. After the discussion questions were finished, informants completed a one-page questionnaire (see Appendix 3); questions included demographics, involvement in grocery shopping, and how much thinking they do about food. Discussions were audiotaped and later transcribed, resulting in 60 pages of typed comments. At the end of each focus group, the informants were debriefed about the purpose of the study and paid a stipend of \$25 for their time.

Phase 2: Telephone Survey

Sampling Technique

Using the focus group data, a telephone survey was developed in order to empirically examine the issues. The survey was conducted during October, November, and December 2004. In order to ensure participation from consumers in all parts of Iowa, stratification of the population was obtained with respect to both geographic location and community size; determination of how many responses would be obtained from a specific area was based on the overall distribution of population in Iowa. This resulted in the following stratification:

Larger cities: 36% of the population, 108 total responses (36 per city)

- Des Moines
- Waterloo
- Iowa City

Medium cities: 11% of the population, 33 total responses (16-17 per city)

- Ames
- Council Bluffs

Small cities: 18% of the population, 54 responses (18 per city)

- Muscatine
- Marshalltown
- Mason City

Very small cities: 35% of the population, 105 total responses (21 per city)

Oskaloosa

Charles City

Storm Lake

Algona

Four County Regional phone book (Hampton, Aplington, etc.)

Within each stratification, a random sample was obtained by phoning the 17th name in the phonebook, beginning in the A's—the 17th name in the A's was called, then the 17th name in the B's, then the 17th name in the C's, etc., working through the alphabet. Once the 17th name in the Z's was called, the caller returned to the A's calling the 34th name in the A's, and again working through the alphabet until the quota of responses for that city was obtained.

Sample Demographics

A total sample of n=297 was obtained. The sample was predominately female, married, and Caucasian, as shown in the following graphs.

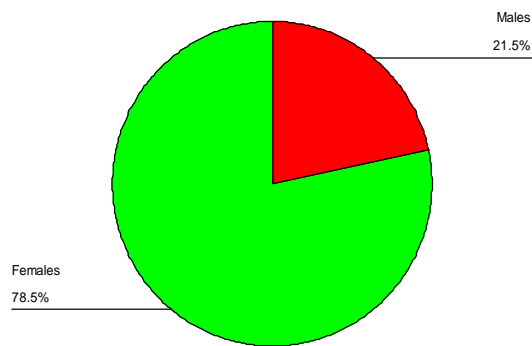


Figure 1: Respondent Sex

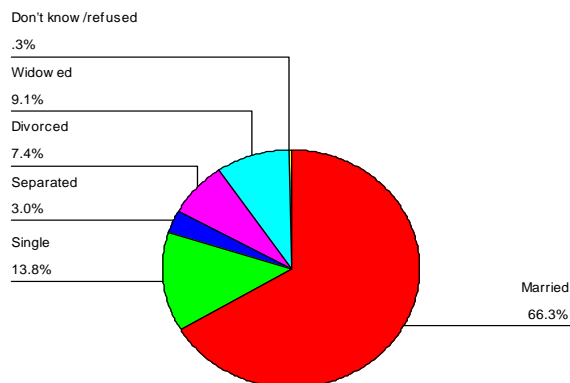


Figure 2: Respondent Marital Status

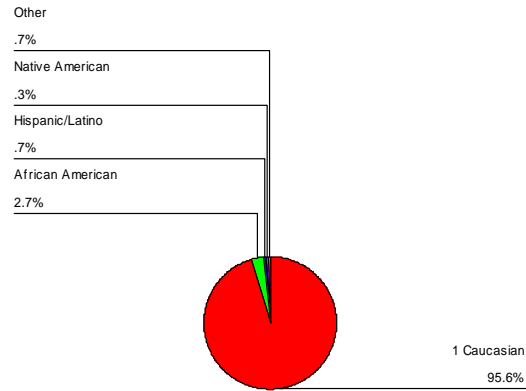


Figure 3: Respondent Race/Ethnicity

Most of the respondents reported having no children under 18 years of age living at home; as might be expected, most respondents reported having two adults at home.

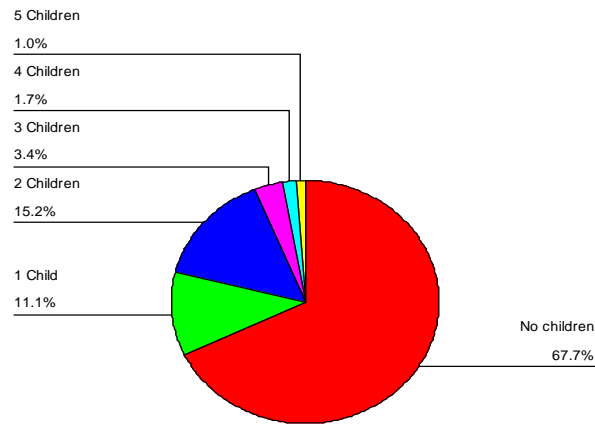


Figure 4: Number of Children Under 18 Living in the Household

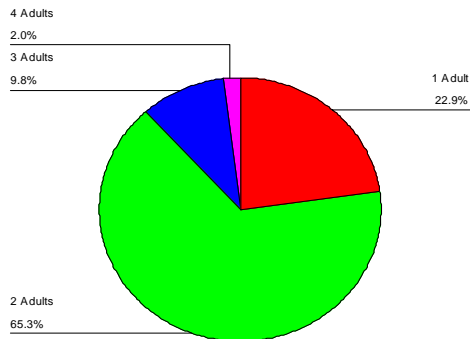


Figure 5: Number of Adults Living in the Household

The median age of the sample was 52; most respondents were in the 41-65 age group as shown below in Figure 6.

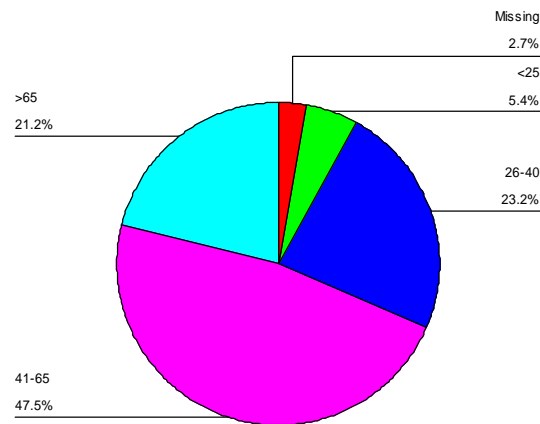


Figure 6: Respondent Age

With respect to education attainment, the sample was fairly well-balanced with about 30 percent of the sample each being either high school graduates, having some post-high school education, or being college graduates; about 13% of the sample had post-graduate college education.

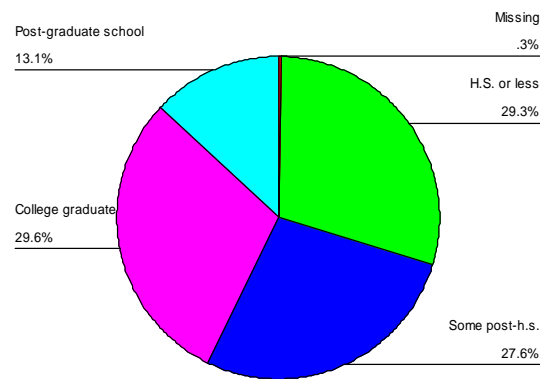


Figure 7: Respondent Education Level

Income level of the respondents was primarily within the \$30,000-\$75,000 range, as depicted in Figure 8. Nearly 28% of the respondents reported an income in the \$30,000-\$49,999 range, while 19.2% reported an income in the \$50,000 to \$74,999 range.

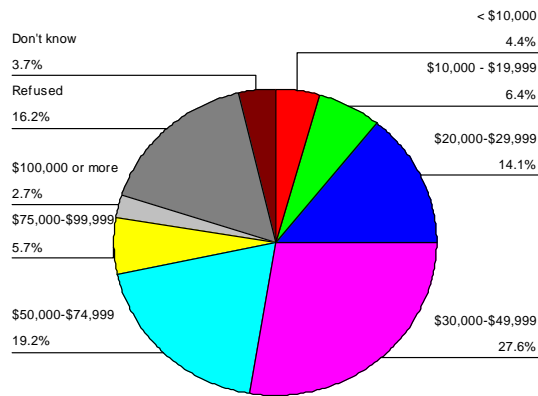


Figure 8: Respondent Household Income (Before Taxes)

Finally, respondents were asked to indicate whether or not they lived in an urban, suburban, small town, or rural area. As shown in Figure 9, the majority of respondents reported living in a small town, though there was a fairly even split in responses. We also asked respondents to tell us which county they lived in—38 Iowa counties are represented in the sample.

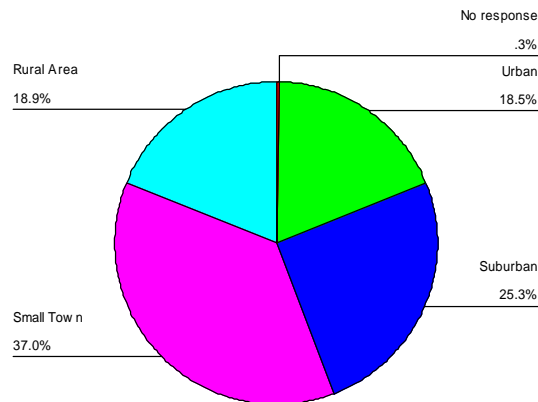


Figure 9: Respondents' Perceptions of Geographic Location

Overall, the sample is fairly representative of Iowa with respect to income, race, marital status, and children in the home. According to the 2000 census data, household median income in Iowa (in 1999) is \$39,469, 93.8% of the population is white, nearly 60% are married, and 31.4% of households have children under 18 at home. However, the sample is slightly older and better educated than most Iowans—the median age in Iowa is 37 and 50% has a high school diploma or less while only 6.5% have post-graduate college educations. <http://www.census.gov/census2000/states/ia.html>).

Telephone Survey Method and Variables

A total of five different individuals conducted the telephone interviews, one of whom was the primary researcher. The other four callers were research assistants (three graduate, one undergraduate) who were given a brief training session in conducting the calls. All of the callers used the same telephone survey form (see Appendix 3).

Respondents were first asked to indicate their familiarity with the term “regional food system.” Those who indicated that they were “very” or “somewhat” familiar with the term were then asked a series of three questions intended to further identify what the respondents understood about regional food systems. The first question asked respondents to indicate to what degree they associated 25 different words (e.g., farm, transportation, restaurants) with a regional food system. The second question asked respondents to indicate the importance of 16 different outcomes (e.g., diversity of food offerings, shared risks and rewards among partners, stronger communities) associated with a regional food system. The third question asked respondents to indicate the likelihood of the outcomes occurring.

Those respondents who indicated very little to no familiarity with the term “regional food system” were not asked the three questions discussed above, but instead were asked to tell the interviewer what they thought a regional food system was. This question was meant to identify any latent knowledge or awareness of “regional food system” that might be present and to also provide some indication of how large the gap in knowledge might be.

All respondents, regardless of their familiarity, were then asked to indicate the ways in which they prefer to be communicated with about food and food systems (e.g., television, newspapers, grocery store signs), and to indicate their level of trust for different types of communicators (e.g., food producers, physicians).

Next, respondents were asked a series of questions intended to indicate their involvement with grocery shopping and their meal habits (e.g., how often they eat out, how often they cook meals from scratch).

Finally, respondents answered a series of demographic questions.

Findings

Phase 1: Focus Groups

The qualitative data collected via the focus groups was analyzed two different ways. First, and primarily, content analysis was used to discover common themes emerging from the focus group transcripts. Data collected via the brief survey completed by focus group informants was analyzed with simple one-way ANOVA's with respect to issues relevant to the study purpose.

Unaided Familiarity with Regional Food System Concept

One of the primary purposes of the focus groups was to determine informants' familiarity with regional food systems. Two initial tasks were used to gauge unaided familiarity. First, informants wrote down words/phrases that came to mind when thinking about regional food systems. A total of 159 responses, across all four focus groups, was collected in this task, an average of 3.4 responses per informant, however, the number and types of responses varied between groups. For example, Focus Group #1, which was slightly younger, less educated, and less engaged with food than the other three groups, wrote down fewer responses, averaging 2.2 per informant, whereas Focus Group #4, which also was less educated, but highly engaged with food, averaged 6.2 responses per informant.

Responses to this task were assigned to one of four categories—products in a regional food system, processes and actors in a regional food system, characteristics/outcomes of a regional food system, and conditions influencing regional food systems. Informants easily associated particular products with a regional food system (49 responses in this category). Products ranged from meats to grains to dairy to fruits and vegetables. Three products—corn, beef, and pork—were mentioned in at least three out of four focus groups.

Informants recorded a total of 55 responses that were classified in the processes and actors category. What might seem to be obvious associations, such as farms and farmers, were among the most frequent associations. But so were words like “distribution,” “grocery store,” “processors,” and “transportation,” all of which were recorded in at least three out of four focus groups. A key player in regional food systems, the consumer, was only recorded in half of the focus groups, as were restaurants.

If the number of responses is considered to be an indication of familiarity, then informants were less familiar with characteristics/outcomes and conditions influencing regional food systems than they were with products and processes. There were 38 total responses classified into the characteristics/outcomes category. In particular, three themes in this category were frequently mentioned, including “diversity in foods,” “grown in different regions,” and “regional foods.” “Fresh foods” was also mentioned, though to a lesser extent. With respect to conditions, however, there were only 17 total responses, and only one of the associations classified in this category was recorded with much frequency, this being “supply.”

The second unaided task required informants to select three pictures (out of 15) that they felt represented a regional food system. Not surprisingly, pictures selection was consistent with the word task. That is, in three of the four groups the picture of cows dominated the selection. Pictures of farm equipment, a grocery store, and a semi-truck were also frequent selections. Interestingly, picture selection in all groups but the first (which was the youngest, less educated, and less engaged with food) demonstrated a more complete understanding of a regional food system (farm, grocery, transportation, other potential food outlets); in contrast, the first group's pictures reflected a less comprehensive understanding of a regional food system, specifically, as farming (cows, farm equipment, and combining pictures).

Questions Related to Food Beliefs/Knowledge

After the unaided familiarity tasks, informants responded to a series of questions related to food beliefs and knowledge.

Q1. What is food to you, in general?

The common theme that emerged was that food is different things to different people. While food is considered to meet a basic physiological need, it was also described as a “habit,” “pleasurable,” “comforting,” and a means to socialize with friends and family. Some informants think of food as a way to make a living (e.g., farmers provide food for other people).

Q2. When you think about your mealtimes, how often do you think about _____(traditions, friends/neighbors, food producers, origin of food)?

All of the focus groups acknowledged that special meals are associated with holiday and/or family traditions, however, they also noted that celebrating “traditions” with food is waning. In fact, some informants reminisced about how special some of their traditions had been and expressed a desire for food traditions to continue. Some described mealtimes as a time to get together with the family, catch up on the happenings of the day, and to relax. Others described mealtimes as being very flexible—sometimes taking a long time; sometimes very fast; sometimes formal, but increasingly informal; sometimes home-cooked, sometimes at a restaurant. With respect to the producer or origin of foods during mealtimes, some informants think about farmers and wonder about where the food came from when they're eating meat and (sometimes) fresh vegetables—of particular concern is the safety of the food product. Eating in restaurants also triggers thinking about food production, particularly if menus denote a food as locally grown or organic. However, many informants also reported never thinking about the production of food or its origin while eating.

Q3. What are locally grown foods? Is this the same as a regional food system?

Informants generally believe that local foods come from a smaller geographical area than do regional foods. One focus group described local as the “place or community where you live” whereas regional “would be the Midwest.” This group further said that “local products are fresh and are grown in the community.” When asked to further define regional, however, agreement among informants is missing. For instance, some describe a region in terms of the Midwest; others describe it as an area that grows food that “cannot be grown elsewhere.” Still others associate a region with a climate, culture, or distinct environment.

Q4. What are national or international foods? Is this the same as a regional food system?

Informants had a harder time responding to this question than Q3, in part because they seem not to have ever given this any previous thought. International foods were described as “foreign commodities,” “food that is produced far away from us” or that “comes from overseas.” Further, international foods have to be transported to the U.S. and checked “by the USDA.” Ethnicity was also tied to international foods by the informants. Examples of international foods included bananas, papayas, mangoes, coffee, rice, and sugar cane. National foods, on the other hand, are produced within the U.S. but have to be shipped to different regions within U.S.; examples of national foods were hotdogs, Oreos, Cheerios, shellfish, and seafood. One group described regional foods as being produced in each region and then imported/exported around the world.

Q5. What food or foods do you think about when you think about Iowa? Upper Midwest?

All four focus groups associate Iowa with corn, soybeans, beef, and pork; three groups also mentioned poultry/turkey as Iowa products. Also mentioned as Iowa products (though by only one of the four focus groups) were honey, milo, eggs, milk, wheat, and melons. There was less agreement among the informants about foods associated with the Upper Midwest. Cheese and fish were nearly unanimous choices, and wheat, pork, beef, and blueberries also being mentioned.

Questions Related to Understanding Regional Food Systems

Informants were next asked to respond to three questions dealing with the economic, social, and environmental impact of regional food systems. The purpose of these questions was to go beyond familiarity with regional food systems to probe for understanding.

Q6. What kind of economic impact does a regional food system have on a community?

All focus groups believe that a community’s economy depends on “farming.” They also believe that a regional food system is affected by things such as the weather (even weather far beyond the region), transportation costs, crop diseases, distance from producer to market, and the economy. To protect against the potential negative impact, informants suggested the need to diversify agricultural products and to market foods as regional (e.g., with a brand name or point-of-origin label).

Q7. What kind of social impact does a regional food system have on a community?

In general, informants struggled with this question, though after some thought, they tended to tie social impact to economic impact. That is, if the economic impact from a regional food system is poor, then the community as a whole will begin to die because there will be fewer jobs. One group noted that the size of a community’s population can be influenced by a regional food system; for example, more Latinos move into communities with processing plants. Thriving communities require more infrastructure, such as schools. One focus group pointed out that a community’s pride is positively affected by an effective regional food system.

Q8. What kind of environmental impact does a regional food system have on a community?

Informants believe that there can be both positive and negative impact on the environment, depending on the types of practices used by regional food system members. In particular, the informants isolated farmers and agricultural practices with respect to this question. The informants believe that many farmers continue to farm the same way their fathers and grandfathers did—with education, however, the current generation of farmers could be taught new methods for soil conservation, contour farming, wetland conservation, etc.

Questions Related to Communicating Regional Food System Information

The next set of questions directed informants to discuss how they get information about food and regional food systems. Moreover, informants were asked to share what forms of communication they prefer and trust.

Q9. What are the ways in which you learn about food information? What would be the best way to inform you about a regional food system?

Informants across all focus groups learn about food through all of the traditional communication methods—newspapers, word-of-mouth, television, and radio. Several informants mentioned package labels as another important source of information; further, signs in grocery stores that are well-placed can be useful. One informant mentioned getting information from extension offices, another suggested getting information through their children’s schools. Informants are less certain about the best way to communicate with them, other than it needs to be something that is interesting and that gets their attention.

Q10. What source of information would you trust the most?

While all forms of communication are trusted to some extent, informants trust word-of-mouth communication from friends and family the most. They also trust labels, and indicators of certification on a food product. While only mentioned in two focus groups, informants would also trust information their children brought home from school.

Motivation to Support Regional Food Systems

One final question asked informants about their motivations to support regional food systems.

Q11. What kinds of things would motivate you to support regional food systems/local foods more than you currently do?

Three primary motivations were mentioned in all focus groups—reasonable prices, high quality products (freshness, safety), and accessibility (convenience).

Food Engagement

At the end of the discussion, the informants completed a brief questionnaire that asked demographic questions and two questions related to food engagement—percent involvement with grocery shopping and the degree to which informants think about food production. Analysis of this data showed a significant relationship between education level and the degree to which an informant thought about food production. Specifically, the more educated the informant, the more s/he thinks about how and where food is produced ($F_{3, 46}=4.40, p=.009$); this is consistent with the first unaided recall task in which the informants with less education recorded fewer word associations with regional food systems. Neither sex nor income were significantly related to food engagement variables.

Summary of Focus Group Findings

Several distinct findings emerged from the focus groups:

- Familiarity with the concept of a regional food system is good with respect to the types of products and processes associated with a food system. Familiarity with respect to outcomes and conditions is less strong.
- Traditions associated with food are being displaced by busy schedules and by increasing informality with respect to meals.
- Informants understand and identify local foods and regional foods, to a lesser extent.
- The economic impact of a regional food system is fairly well understood, but only with respect to producers.
- Social and environmental impacts are not well understood.
- Communications about food and regional food systems could take many forms but must command attention and be from trusted sources.
- Informants would be willing to support regional food systems if there were reasonable prices, high quality products, and convenient accessibility to products.
- There is a significant positive relationship between education level and thinking about food production.

While focus group data can be very informative, there is also the potential for the data to be biased or to present too narrow a view. For example, the researcher was surprised that so many informants seemed to be familiar with a regional food system—it may be that unfamiliar informants were able to hide the degree to which they were unfamiliar with the concept. On the other hand, although two of the focus groups were conducted in fairly large communities (Sioux City and Cedar Rapids), the informants identified primarily as residing in small towns and, thus, might be expected to be more familiar with agriculture and food production. It should also be pointed out that education level parallels age, at least in this sample—that is, the focus group with the lowest education level was also the youngest.

Phase 2: Telephone Survey

In contrast to the data collected from a relatively small sample via qualitative methods (the focus groups), the data collected via the telephone survey came from a much larger and representative sample of the state of Iowa.

Familiarity

As with the focus groups, the first task of the phone survey was to ascertain familiarity with the regional food system concept. Respondents chose from 5 response categories (“very familiar,” “somewhat familiar,” “not very familiar,” “never heard the term before,” “don’t know/refused”) to indicate their degree of familiarity. Those respondents who were very or somewhat familiar were recoded as “familiar” while the remainder of the respondents were recoded as “unfamiliar.” Given this recoding, unlike the focus groups in which most informants expressed at least some degree of familiarity, the majority of survey respondents indicated they were unfamiliar with the term, as shown in Figure 9.

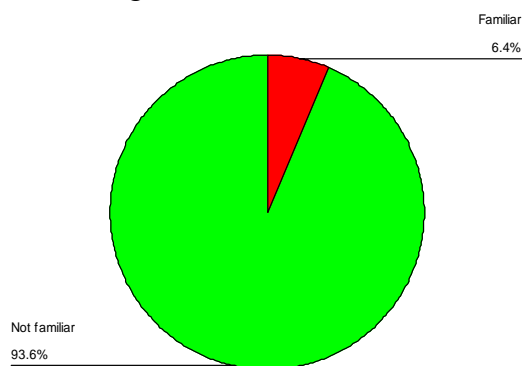


Figure 9: Familiarity with Regional Food System

Familiar respondents differed from unfamiliar respondents in two distinct ways. First, familiar respondents were almost twice as likely as unfamiliar respondents (32% vs. 18%) to report living in an urban area, whereas unfamiliar respondents were more likely to report living in a small town than were familiar respondents (38% vs. 21%). Second, 63% of the familiar respondents reported being college graduates or having post-graduate degrees, while only 42% of the unfamiliar respondents reported having college or post-graduate degrees. Consequently, the familiar respondents were more educated and more likely to live in urban areas than were the unfamiliar respondents.

Those respondents who were unfamiliar with the term were asked to attempt to define the term. Of these, 23% said they had no idea, while the others generally defined the term using the same words as the term. However, some unfamiliar respondents offered reasonably good definitions. For example, 26 of the unfamiliar respondents defined a regional food system as “food grown, sold, and distributed in a region.” Others described a regional food system as “agricultural products grown,” “links farmers to consumers,” “provides food,” “a food distribution system or chain,” “local food grown and sold locally,” “a combination of stores,” “co-op,” or “food and agriculture that benefits residents in a region.” In fact, the majority of the unfamiliar respondents were able to reason and provide an answer that was related to at least one aspect of a regional food system.

Further Examination of “Familiar” Respondents

Those respondents who indicated being either somewhat or very familiar with a regional food system (a total of 19 respondents) were asked a series of questions to determine what types of things they associated with a regional food system. Specifically, respondents indicated association on a 4-point scale where 1=“to a great extent,” 2=“to some extent,” 3=“a little extent,” and 4=“not at all”; thus, the lower the mean score, the higher the association with a regional food system. The mean scores for each item is listed in Table 1, from highest to lowest association.

Table 1—Mean Scores of Association with Regional Food System

Item	Mean	Standard Deviation
Agriculture	1.05	.229
Meat	1.05	.229
Dairy products	1.21	.419
Grains	1.21	.535
Farms	1.26	.653
Vegetables	1.32	.582
Fruits	1.37	.597
Fresh food	1.42	.838
Farmers’ markets	1.47	.612
Food safety	1.53	.772
Community supported ag farms	1.58	.961
Geographic area	1.68	.885
Food processors	1.74	.733
Community	1.79	1.032
Food co-ops	1.84	1.068
Reasonable prices	1.89	1.150
Roadside food stands	1.95	.970
Consumers	1.95	1.079
Grocery stores	1.95	1.079
Distribution	2.05	1.026
Transportation	2.16	1.259
Convenience	2.26	.991
Convenience stores	2.32	1.057
Sit-down restaurants	2.32	1.108
Fast food restaurants	2.53	1.073

Since responses were based on a 4-point scale, items with means >2.00 (i.e., distribution, transportation, convenience, convenience stores, sit-down restaurants, and fast-food restaurants) are poorly associated with regional food systems. Those items with means ≤ 1.5 , however, are strongly associated, including agriculture, meat, dairy products, grains, farms, vegetables, fruits, and fresh food. Other items with means just slightly higher than 1.50 (e.g., food safety) also enjoy a relatively high degree of association, while those with means approaching 2.00 would have to be considered as less well associated.

These results are somewhat consistent with the focus group results in that familiarity is focused primarily around the products of a regional food system vs. the processes, actors, and conditions associated with a regional food system.

The “familiar” respondents were also asked to consider the importance of a list of 16 potential outcomes of a regional food system. Again, answers were indicated on a 4-point scale, where 1=“very important,” 2=“somewhat important,” 3=“not very important,” and 4=“not at all important.” As would be expected, some of the outcomes were judged as much more important than others, although the means of all of the outcomes were close to or less than 2.00, as shown in Table 2 below.

Table 2—Mean Scores of Outcome Importance

Outcome	Mean	Standard Deviation
Food safety	1.16	.375
Higher food quality	1.42	.769
Convenient access to regional foods	1.47	.513
Financial sustainability	1.53	.513
Reasonable prices	1.53	.697
Efficient food delivery system	1.58	.769
Environmental responsibility	1.58	.838
Ag diversification/specialization	1.63	.684
Socially responsible	1.68	.749
Diversity of food offerings	1.79	.713
Emphasis on region’s culture, history. & ecology	1.84	.688
Consumer identification with regional foods	1.84	.898
Competitive advantage	1.89	.809
Strong business partnerships	1.95	.911
Stronger communities	2.00	.745
Shared risks and rewards among partners	2.05	.780

Although there are no data to support this, it could be inferred from the pattern of responses that respondents are more familiar with the more obvious outcomes of a regional food system, such as food safety and higher quality, and, thus, judge these as more important than less obvious outcomes, such as shared risks and rewards.

The “familiar” respondents were further asked to judge the likelihood of an outcome occurring by indicating one of the following responses: 1=“very likely,” 2=“somewhat likely,” 3=“not very likely,” and 4=“not at all likely.”

Table 3—Mean Scores of Outcome Likelihood

Outcome	Mean	Standard Deviation
Supporting local economy	1.42	.692
Ag diversification/specialization	1.47	.697
Higher quality food	1.53	.772
Strong business partnerships	1.63	.761
Consumer identification with regional foods	1.63	.761
Diversity of food offerings	1.63	.761
Convenient access to regional foods	1.68	.820
Reasonable prices	1.74	.806
Food safety	1.74	.933
Protecting the environment	1.79	.713
Efficient food delivery system	1.79	.787
Socially responsible	1.84	.688
Emphasis on region’s culture, history, & ecology	1.84	.834
Competitive advantage	1.89	.658
Stronger community	1.95	.911
Shared risks and rewards among partners	2.05	.780

As shown, the respondents believe that all of the outcomes are at least somewhat likely.

The responses on outcome importance and likelihood were paired to calculate a multiattribute attitude score; that is, the importance score was multiplied by the likelihood score. These scores are listed in Table 4 in order of highest to least attitude score (given the scales of these two measures, the lower the attitude score number, the higher the attitude score). In this context, the score is an indication of respondents’ beliefs about these 16 potential outcomes of a regional food system—higher scores indicate more strongly held beliefs.

Table 4—Attitude Score of Regional Food System Outcomes

Outcome	Attitude Score (Importance x Likelihood)
Food safety	2.02
Higher food quality	2.17
Supports local economy	2.17
Ag diversification/specialization	2.40
Convenient access to regional foods	2.47
Reasonable prices	2.66
Protecting the environment	2.83
Efficient food delivery system	2.83
Diversity of food offerings	2.92
Consumer identification with regional foods	3.00
Socially responsible	3.09
Strong business partnerships	3.18
Emphasis on region’s culture, history, & ecology	3.39
Competitive advantage	3.58
Stronger community	3.90
Shared risks and rewards among partners	4.20

Communicating Information About Regional Food Systems

All respondents were asked to indicate their top three preferred methods of communication about foods and regional food systems from a list of nine different types of communication methods. Not surprisingly, there was a wide variety of preferred communication methods. However, overall, television, newspapers, and signs/displays inside of grocery stores were the top three preferred methods, as shown in Table 5.

Further examination of communication methods was conducted to determine the presence or absence of different preferences based on degree of familiarity, education, and age. Given the low number of respondents classified as familiar, reliable analysis of differences with unfamiliar respondents is not possible. Nonetheless, familiar respondents preferred grocery store signs (26%), television (21%), and radio/brochures (each with 16%), whereas unfamiliar respondents preferred television (31%), grocery store signs (24%), and newspapers (23%).

No significant differences with respect to either age or education were found.

Table 5—Preferred Communication Methods

Method	% Respondents Selecting Method
Television	23%
Newspapers	20%
Signs or displays inside grocery store	16%
Magazines	12%
Brochure or flier mailed to home	9%
Radio	8%
Billboards	3%
Informational seminars in the community	2%
Information children bring home from school	2%
Other	2%

All respondents also were asked to identify the degree to which they trust 12 different sources of communication about foods or regional food systems. The degree of trust was reported on a 4-point scale, with 1=“very much,” 2=“some,” 3=“not very much,” and 4=“not at all.” Table 6 shows the mean scores on this measure, with the sources listed in decreasing level of trust (i.e., a lower mean score indicates a higher level of trust).

Table 6—Mean Scores of Communication Source Trust

Source of Communication	Mean	Standard Deviation
Public health officials	1.42	.633
Doctors	1.46	.641
Food professionals	1.46	.636
Local food producers	1.67	.701
Extension employees	1.73	.900
Family members	1.75	.779
Non-profit organizations	1.81	.824
Friends	1.86	.724
Local food retailers	1.89	.669
Teacher	1.96	.768
Local food processors	2.06	.777
News anchors/journalists	2.38	.842

These results are interesting because the respondents significantly trust sources they consider to be experts more than family or friends who are more traditionally associated with word-of-mouth communication.

A paired t-test between public health officials and local food producers showed a significant difference ($t=5.032$, $p=.001$); the t-test between food professionals and local food producers was also significant ($t=4.325$, $p=.002$). Thus, respondents clearly trust public health officials, doctors, and food professionals more than they trust the other sources of communication.

With respect to the three most trusted sources, further evaluation was conducted to determine if the level of trust varied significantly with respect to respondent demographics. Only marginally significant differences were detected for public health officials and food professionals using chi-square analysis, and since cell size expectations were violated for these tests, the results cannot be further interpreted. There were no significant differences in level of trust, even marginal, for doctors. Thus, it can be assumed that the level of trust for public health officials, doctors, and food professionals is high among all respondent demographics.

Food-Related Behaviors

Respondents were asked several questions with respect to specific food behaviors/thoughts. The first question ascertained the degree to which respondents were involved in household grocery shopping. As shown in Figure 10, almost 87% of the respondents do more than 50% of the household grocery shopping.

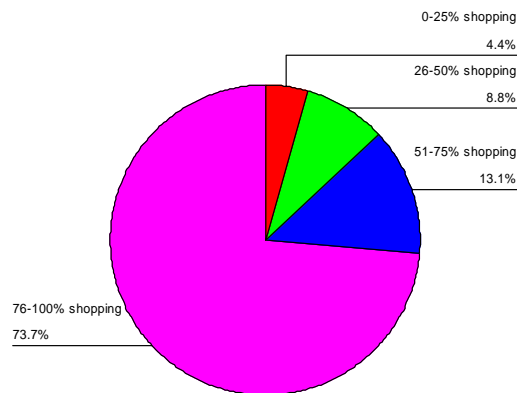


Figure 10: % household grocery shopping

Three questions queried respondents about their meal behaviors. For each question, respondents indicated frequency of behavior on a 5-point scale anchored with 1=almost every night and 5=almost never.

Figure 11 (on the next page) shows the frequency of eating out or buying take-out food. The mean score was 2.97 (about once a week). Sixty-four percent of the respondents eat out at least once to two-three times per week. Interestingly, this behavior is significantly related to familiarity: a one-way ANOVA was significant ($F=5.470$, $p=.02$), with familiar respondents eating out more frequently (mean=2.42) than unfamiliar respondents (mean=3.01).

Figure 12 (on the next page) shows the frequency of eating pre-prepared foods for dinner. In contrast to the frequency of eating out, only 45% of the respondents reported eating pre-prepared foods once to two-three times per week, and 29% reported almost never eating pre-

prepared foods; the mean was 3.46. This variable was not significantly related to familiarity, but was positively correlated to the frequency of eating out ($r=.26, p=.00$).

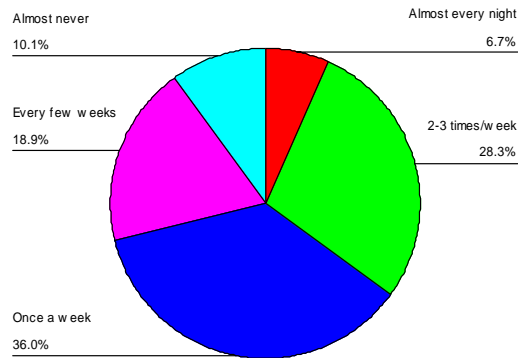


Figure 11: Frequency of Eating Out or Buying Take-out Food

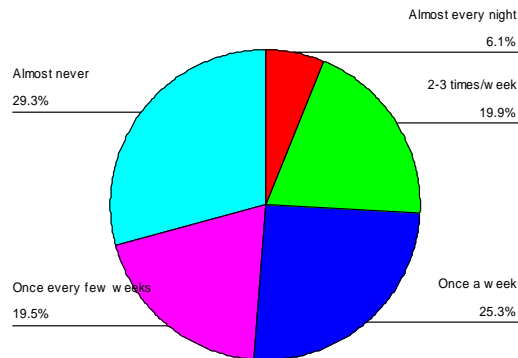


Figure 12: Frequency of Eating Pre-Prepared Food

The third question asked respondents how often they ate food prepared from scratch. As pictured in Figure 13, nearly 81% report eating food prepared from scratch almost every night or two to three times per week; the mean was 1.82. Again, this measure was not significantly related to degree of familiarity. And, not surprisingly, it is significantly negatively correlated to both frequency of eating out ($r=-.42, p=.00$) and frequency of eating pre-prepared foods ($r=-.50, p=.00$).

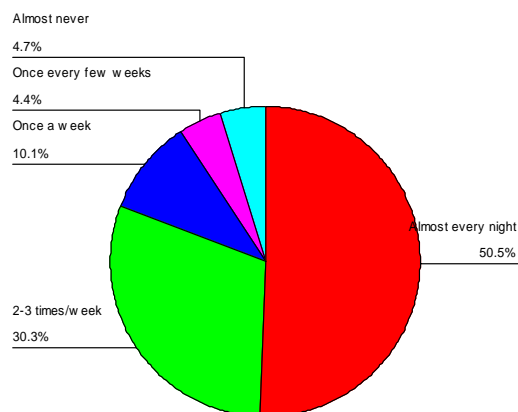


Figure 13: Frequency of Eating Foods Prepared from Scratch

Finally, respondents were asked how often they thought about how and where their food was produced. Answers were based on a 5-point scale, with 1=none of the time and 5=all of the time. The mean score was 2.94, which roughly corresponds to “some of the time.” In fact, as depicted in Figure 14, the majority of respondents (37.4%) did report thinking about food production some of the time, but almost 30% reported thinking about food production rarely, and a little over 23% thought about food production frequently.

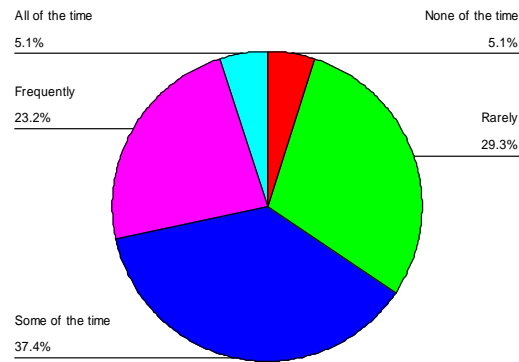


Figure 14: Frequency of Food Production Thought

Summary of Telephone Survey Findings

As with the focus group data, important and useful information was discerned through the telephone survey:

- Almost 94% of the respondents were unfamiliar with the regional food system concept. The familiar respondents generally had attained higher education levels and lived in urban areas.
- Familiarity with the products and players in a regional food system is more pronounced than familiarity with the outcomes of a regional food system.
- The most important outcomes of a regional food system (as indicated by familiar respondents) are food safety, higher food quality, convenient access, financial sustainability, and reasonable prices.
- Familiar respondents believe that all outcomes of a regional food system are at least somewhat likely to occur, but especially indicate likelihood for food safety, higher food quality, and supporting the local economy.
- Familiarity is positively related to the frequency of eating meals outside of the home.
- Preferred communication methods include television, newspapers, and signs/displays inside grocery stores. This finding is in stark contrast to the focus group results, which strongly suggested that word-of-mouth communication was preferred. This result, however, is directly tied to respondents’ perceptions of trusted communication sources (see next bullet point).
- The most trusted sources of information about regional food systems are public health officials, doctors, and food professionals—not family and friends as indicated by the focus groups.

Conclusion

The purpose of this study was to establish baseline data regarding what Iowans understand about regional food systems and to try to determine effective methods of communicating information about food and regional food systems. The findings of this report can be summarized as follows:

- Most Iowans are, at least to some extent, unfamiliar with regional food systems. What information is known tends to relate to products, players, and processes (in particular, production processes) involved in a regional food system. Knowledge about conditions affecting regional food systems and outcomes of regional food systems is less forthcoming. Those Iowans who are more familiar with regional food systems tend to be more educated and live in urban areas.
- Those Iowans who are familiar with the regional food system concept (albeit a small proportion of the sample) tend to believe that the outcomes associated with a regional food system are important and at least somewhat likely to be achieved.
- Communicating information about food and regional food systems is preferred through traditional methods, including television, newspapers, and grocery store signs or displays; there was also an indication that radio may be a useful method.
- Trusting information about regional food systems will be better if the source of the information is people with perceived expertise related to food, such as public health officials, doctors, and food professionals. This set of answers suggests that the health aspects of a regional food system (e.g., food safety, benefits of higher food quality) will be information that resonates with Iowans more than the economic impact of regional food systems (e.g., aspects such as competitive advantage and shared risks and rewards among partners.)

Given this set of results, the key to increasing Iowans' knowledge and support of regional food systems is to use standard methods of communication to educate them. Moreover, it will be necessary to use perceived experts in the communication process. It also will be critical to shape messages that communicate benefits that matter most to consumers, i.e., the health aspects of a regional food system. This does not mean that other aspects, such as the potential economic impact on a community, are not important. But more rapid endorsement of regional food systems will occur if communication efforts focus first on the health aspects. Of course, in order for communications to work, regional food systems will, in fact, have to deliver the benefits that Iowans say they want.

It should be pointed out that communication efforts should first focus on increasing awareness, which will best be accomplished using the preferred methods reported earlier. Once a higher level of awareness is achieved, efforts should focus on increasing knowledge and familiarity,

using the same methods. Over time, word-of-mouth communication will become a useful tool in spreading the message about regional food systems.

As with any research, there are limitations to this study that should be considered when interpreting the data. One concern is the operationalization of familiarity. Many of those respondents who indicated they were unfamiliar with the concept were still able to provide at least a cursory (and accurate) definition of a regional food system. This may mean that respondents have some awareness of the term, although their knowledge may not be very deep. On the other hand, having just used the term “regional food system” with respondents provided at least three clues about the definition, thus making it easier to provide a halfway reasonable definition. The list of items for the “familiar” respondents to answer was very lengthy, which did result in some of those respondents getting tired—this may have impacted their answers. Every effort was made to obtain a representative sample of Iowans, however, these findings are a snapshot of Iowans only during the timeframe of the data collection process, and the findings are not generalizable outside the state of Iowa.

The findings of this study suggest several avenues for future research. Follow-up studies would be beneficial in further elucidating Iowans’ communication preferences. In particular, experiments could be used to discern the efficacy of specific messages and communication sources prior to implementing a communication campaign. More research should be conducted to determine exactly which benefits of a regional food system matter most to Iowans—the benefits may differ among Iowa’s population segments, an issue which was not materially examined in this study. Additional exploration of the relationship between food behaviors and familiarity and purchase of regional foods is warranted. Moreover, this study focused entirely on the end-consumer, which is just one of the components of a regional food system. Similar studies are necessary to examine the attitudes and communication needs of other system components, such as food processors and distributors.



Appendix 1



Focus Group Interview
Picture Selection Task



Appendix 2



Focus Group Interview Guide

1. What is food to you, in general?

Is it fuel? Is it a chore? Is it a time to share and relax?

2. When you think about your mealtimes, how often do you think about:

Celebrating family or ethnic traditions?

Holiday traditions?

Friends and neighbors?

The farmers who grew the food?

Where the food comes from?

3. What are “locally grown foods”? Is this the same as a regional food system? How are how not?

4. What are “national” or “international” foods? Is this the same as a regional food system? How or how not?

5. When you think of Florida, you think of oranges; what food (or foods) do you think about when you think of Iowa?

When you think of the upper Midwest?

6. Think again about what a regional food system is. What kind of economic impact does a regional food system have on a community? How do local foods/regional foods contribute to economic impact?

What kinds of things would need to be done or would have to change in order for the impact to be greater in the future?

7. What kind of social impact does a regional food system have on a community? How do local foods/regional foods contribute to social impact?

What kinds of things would need to be done or would have to change in order for the impact to be greater in the future?

8. What kind of environmental impact does a regional food system have on a community? How do local foods/regional foods contribute to environmental impact?

What kinds of things would need to be done or would have to change in order for the impact to be greater in the future?

9. What are the ways in which you learn about food information? If a local group of food producers or regional producers wanted you to know more about regional food systems, what would be the best way to get that information to you?

Newspaper articles

TV news

Radio

In-store displays/labeling

Direct mail

WOM

Newsletters

Website

Booklet

Billboards

10. Which source of information would you trust the most? Why?

11. What kinds of things would motivate you to support regional food systems/local foods more than you currently do? (e.g., more information, more/easier availability, competitive prices)



Appendix 3



Focus Group Questionnaire

Please indicate your responses to the questions below.

1. Sex: M _____ F _____
2. Age: _____
3. How many adults (19 and over) live in your household? _____
4. How many children (18 and under) live in your household? _____
5. What is the highest level of education that you have completed?
 - less than a high school diploma
 - completed high school
 - some college
 - college graduate
 - post graduate degree
6. In which range would your household's annual income before taxes fall?
 - Under \$25,000
 - \$25,000 - 49,999
 - \$50,000 - 74,999
 - \$75,000 - 99,999
 - \$100,000 – 149,999
 - \$150,000 and over
7. Which category best describes your race?
 - White/Caucasian
 - Black/African American
 - Hispanic/Latino
 - Asian
 - Native American
 - Other _____
8. Do you live in a/an: Urban area _____ Suburban area _____
Small town _____ Rural area _____
9. What percentage of grocery shopping do you do for your household?
 - 0-25%
 - 26-50%
 - 51-75%
 - 76-100%
10. How often have you thought about how and where your food was produced?
 - none of the time
 - rarely
 - some of the time
 - frequently
 - all of the time

A decorative graphic consisting of a vertical grey bar on the left and a horizontal grey bar extending to the right from the bottom of the vertical bar, forming an L-shape. The text 'Appendix 4' is positioned to the right of the vertical bar.

Appendix 4

Telephone Survey

**Examining Awareness of and Support of Sustainable Agriculture in Iowa
Telephone Survey
October 2004**

Hi!

My name is _____, and I am conducting some research on behalf of the Leopold Center for Sustainable Agriculture, part of Iowa State University. I'd like to talk to the primary grocery shopper in your household—would that be you?

If “yes,” then ask: Do you have about 10 minutes to answer some questions for me about food systems?

“yes” → “Great!” continue with survey

“no” → “Sorry to have bothered you, thanks for your time.”

If “no,” then ask: Is the primary grocery shopper at home and, if so, could I talk with that person?

“yes” → “Thanks!” and proceed to repeat previous questions to ascertain willingness to participate.

“no” → “Sorry to have bothered you, thanks for your time.”

Q.1 How familiar are you with the term “regional food system?”

- _____ Very familiar**
- _____ Somewhat familiar**
- _____ Not very familiar*
- _____ Never heard the term before*
- _____ Don't know/refused*

***If one of these answers, go to question 2.**

****If one of these answers, skip to question 3 on next page.**

*Q. 2 What do you think a regional food system is? (record respondent's words)

****Q.3** To what extent do you associate each of the following with a regional food system? Please tell me if you associate it to a great extent, some extent, a little extent or not at all.

	To a great extent	To some extent	A little extent	Not at all
Agriculture				
Meat				
Fruits				
Vegetables				
Dairy products				
Grains				
Farms				
Grocery stores				
Distribution				
Transportation				
Geographic area				
Fast food restaurants				
Sit-down restaurants				
Food processors (e.g., meat packing companies)				
Consumers				
Farmers' markets				
Food co-ops				
Roadside food stands				
Convenience stores				
Community supported agricultural farms				
Food safety				
Fresh food				
Convenience				
Reasonable prices				
Community				

Q.4 How important is each of the following outcomes of a regional food system? Please tell me if the outcome would be very important, somewhat important, not very important, or not at all important.

	Very important	Somewhat important	Not very important	Not at all important
Diversity of food offerings				
Supports local economy				
Efficient food delivery system				
Competitive advantage				
Shared risks and rewards among partners				
Environmentally responsible				
Socially responsible				
Strong business partnerships				
Agricultural diversification/specialization				
Stronger communities				
Consumer identification with regional foods				
Safety of foods				
Reasonable prices				
Higher food quality				
Convenient access to regional foods				
Emphasis of a region's culture, history, and ecology				

Q.5 How likely is each of the following outcomes of a regional food system? Please tell me if the

	Very likely	Somewhat likely	Not very likely	Not at all likely
Diversity of food offerings				
Supports local economy				
Efficient food delivery system				
Competitive advantage				
Shared risks and rewards among partners				
Protects the environment				
Socially responsible				
Strong business partnerships				

Agricultural diversification/specialization				
Stronger communities				
Consumer identification with regional foods				
Safety of foods				
Reasonable prices				
Fresher and better quality food				
Convenient access to regional foods				
Emphasis of a region's culture, history, and ecology				

Q.6 In general, which of the following kinds of communications has the most likelihood to inform you about food or regional food systems? Please indicate the top 3 choices.

- ___ ads on TV
- ___ ads on radio
- ___ ads in magazines
- ___ ads in newspapers
- ___ signs or displays inside grocery store
- ___ billboards
- ___ brochure or flier mailed to your home
- ___ informational seminars in community
- ___ information your child brings home from school
- ___ other

Q.7 Now, I am going to read you a list of the types of people or organizations who might communicate to you about food or regional food systems, and I want you to tell me how much you would trust what they had to say. Please tell me if you would trust what they had to

	Very much	Some	Not very much	Not at all
Local food producers				
Local food retailers				
Local food processors				
Extension employees				
Non-profit organizations				
News anchors or other journalists				
Food professionals				
Public health officials				
Doctors				
Family members				
Friends				
Teacher				

Q.8 What percentage of grocery shopping do you do for your household, 0-25%, 25-50%, 51-75%, or 76-100%?

- 0-25%
- 26-50%
- 51-75%
- 76-100%

Q. 9 How often do you eat out or buy take-out food—almost every night, 2-3 times a week, about once a week, once every few weeks, or almost never?

- almost every night
- 2-3 times a week
- about once a week
- once every few weeks
- almost never

Q. 10 How often do you eat pre-prepared food for dinner—almost every night, 2-3 times a week, about once a week, once every few weeks, or almost never?

- almost every night
- 2-3 times a week
- about once a week
- once every few weeks
- almost never

Q. 11 How often do you eat food prepared from scratch for dinner—almost every night, 2-3 times a week, about once a week, once every few weeks, or almost never?

- almost every night
- 2-3 times a week
- about once a week
- once every few weeks
- almost never

Q. 12 How often do you think about how and where your food is produced—none of the time, rarely, some of the time, frequently, all of the time?

- none of the time
- rarely
- some of the time
- frequently
- all of time

Q. 13 In what year were you born?

_____ don't know/refused

Q. 14 What is the last year of schooling that you have completed?

- 1-11th grade
- high school graduate
- non-college post high school
- some college
- college graduate
- post-graduate school
- don't know/refused

Q. 15 Are you married, single, separated, divorced, or widowed?

- married
- single
- separated
- divorced
- widowed
- don't know/refused

Q. 16 Do you have any children 18 years of age or younger?

- yes If so, how many? _____
- no
- don't know/refused

Q. 17 How many adults (19 and over) live in your household?

Q. 18 What is your race?

- white/Caucasian
- black/African American
- Hispanic/Latino
- Asian
- Native American
- Other
- don't know/refused

Q. 19 Last year, in 2003, what was your total family income before taxes? Just stop me when I get to the right category?

- less than \$10,000
- \$10,000 to under \$20,000
- \$20,000 to under \$30,000
- \$30,000 to under \$50,000

Q. 21 Do you live in an urban area, suburban area, small town, or rural area?

- urban
- suburban
- small town
- rural area

Q. 22 Respondent sex (**Don't need to ask**)

- Male
- Female