

## **3. Data Collection and Analysis Guide: Deciding What Data To Collect**

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## 3. Data Collection and Analysis Guide: Deciding What Data To Collect

### 3.1 Finding and using data

The previous chapters discuss how to plan a community food security assessment, how to identify key questions to consider before embarking on data collection, and what the basic components of a community food security assessment are. This chapter gives you a general overview of the different types of data and data collection methods you may use to conduct your assessment.

Data can be found and presented in many forms. They are used to tell a story.

*Quantitative data*, for example, can help describe the extent of a problem by providing information in precise amounts:

“Ten percent of all single-parent households headed by someone under 20 years of age have experienced food insecurity in Alacaster County in the past year.”

*Qualitative data* provide a descriptive account of a situation:

“Food-insecure households in Alacaster County reported using strategies such as community gardening, neighborhood group meals, and borrowing food from neighbors and family members to help them cope with food security problems.”

Both *qualitative* and *quantitative* data provide valid information if collected systematically. This toolkit can help you with this task.

#### Existing Data

There are two basic types of data—*existing* and *original*. Existing data are data that have already been collected. They may be either *compiled* or *uncompiled*. Examples of compiled existing data include county-level poverty numbers published by the U.S. Census Bureau. However, community or State

agencies often collect numerous pieces of useful information that may not be aggregated and summarized. This is known as existing uncompiled data. Examples of existing uncompiled data may include the number of households served by a local food pantry or the number of emergency food providers in the community. (See box 3.)

#### Box 3

##### Data Versus Information

From *Monitoring the Nutrition of Your Community: A “How-To” Manual*

*Data* are raw numbers of values and usually are not very meaningful until they are analyzed and interpreted to become *information*. For example, the percentage of households suffering from food insecurity in the community, especially compared with national or State averages, is information and says something about the relative magnitude and importance of the problem. The raw number of such households—or data—may be useful by itself but does not indicate how big the problem is relative to State or national norms.

Both types of existing data will be potentially useful in conducting your community food security assessment. But whenever possible, you should use compiled data—they are easier to find and use fewer resources. When compiled data are not available and uncompiled data exist, you may be able to compile the data yourself or get assistance from the agency that collected and stores the data.

The decision to access existing data must be made carefully. (See box 4.) Before deciding to compile existing data, the following questions must be raised and answered by your assessment team members:

- What are the sources of the existing data?
- How suitable are the existing data for the current project?
- Who will be assigned the task of collecting the existing data?
- What resources must be set aside before the data are accessed (e.g., personnel, duplication fees, computer hardware and software, transportation costs)?
- Who must be contacted before a trip is made to an agency to request data?

**Box 4**  
**Using the Most Recent Existing Data Available**

It is important to remember that when using existing data, it is always preferable to use the *most recent data available*. The first data source that you find may not contain the most recent data. For example, until data from the recent 2000 U.S. census is compiled and released, much of the most accessible existing socioeconomic and demographic data that you will find on your community will come from the 1990 census. In this case, you are strongly urged to investigate the possibility that more recent data may be available, for at least some indicators, at the local level.

**Original Data**

After your review of the available existing data, you may find that no appropriate existing data are available to answer some of the questions you want answered. In this case, you will have to collect new or *original* data. Examples of original data include data from community residents on household food security, data from farmers about their participation in farmers' markets, data on types and quantities of food distributed by food pantries, and data on the price and availability of food items from supermarkets or other food stores.

**3.2 Data collection techniques**

Several different methods are used for collecting original data. Three of the available methods are introduced in this toolkit. These methods include surveys, observation, and focus groups. Each method has strengths and weaknesses and is best used in specific situations. Included in this toolkit are guides on how to use the specific survey instruments, and we provide interview, focus group, and observation forms for your use. However, before reviewing the specific tools and guides, it is worthwhile to learn a bit more about each method. A short description of each is presented below.

**Surveys and Observation**

*Surveys* are used to gather information consistently and accurately from large numbers of people. One key element in conducting a survey is to ensure the representativeness of the community. This element and other issues on sampling or selecting respondents are introduced later in this section and are discussed in detail as part of the instructions included with each of the different data collection instruments. A survey is a predetermined set of questions or indicators that are collected either by interview, written personal responses, or observation. The responses might be closed-ended or open-ended. Closed-ended questions include multiple-choice questions or scales used for ranking priorities or preferences. Open-ended questions provide space for the respondent or observer to answer the question freely without any cues or categories.

As noted, surveys can be used to collect data through *observation*. One example is the observation of users of a particular resource or program and noting facts such as their gender, ethnic or racial characteristics, and time of use. Another example, and the one used in the Food Store Survey included in this toolkit, is the observation of information

readily available without reviewing records or aggregated data. The Food Store Survey includes the observation of food availability and prices.

Observation is conducted using an observation guide or survey instrument. The guide or instrument provides space for recording information accurately and consistently. It serves to ensure that all information is captured in the format required.

Although observation does not require direct interaction with people, it is important to request permission from the resource or program at which the observation will occur. In addition, observers should be discreet and as invisible as possible so as not to interfere with normal resource activity or to bias the activities being recorded.

### **Focus Groups**

*Focus groups* are a data collection method used for studying ideas in a group context. Unlike surveys, in which the researcher asks a question and the respondent answers, focus group techniques rely on interaction within the group, based on topics supplied by the researcher.

The people invited to participate in a focus group should be selected with care. For best results, the group should be limited to between 8 and 12 people. Focus group participants should always have some connection with the topic being discussed and should be a relatively homogeneous group. For example, if the discussion will revolve around farmers' use and experiences with local farmers' markets, most of the participants should be farmers who have the opportunity to participate in these efforts. However, it also may be useful to include farmers who have the opportunity to participate but choose not to do so.

Since it is also important that participants be representative of the various subgroups within

the targeted population, it is common to conduct a set of focus groups with different segments or subgroups of the targeted population. For example, if a focus group were to be conducted on residents' experiences with food security, groups might be separated by household type—households without children, households with children, and households with elderly members. Within each group would be people representing the different ethnic or racial groups living in the community. If the community is spread over a large geographic area, different groups might be conducted with participants in different community locations. This diversity will ensure that the information collected in the focus groups will represent the diversity within the targeted population.

*Screeners* can be used to help with the selection process. A screener is a set of questions that categorize the population groups you wish to include in your focus group. For example, if the group is to include people from a mix of ethnic groups and income levels and only those who participate in food assistance programs, you might ask people about their ethnic/racial identity, income, and participation in USDA food assistance programs. A screener is typically very short and also is used to provide the potential participant with information about the purpose of the focus group.

Focus groups are conducted by a facilitator using a focus group guide. A *focus group guide* typically includes questions that are open-ended and will provoke discussion among the participants. There is never a right or wrong answer, and all participants are encouraged to recount their experiences or to present their points of view without criticism or comment from the group. In addition to the facilitator, a person should observe the group taking notes and should tape-record the discussion. The role of the recorder includes observing the dynamics of the group and the unspoken expressions displayed by

participants. Sometimes focus groups incorporate a short written survey. This survey can be used in the beginning to slowly introduce the topic of interest while also collecting specific person-level information. After the session is concluded, the recorder prepares a summary of the group discussion and unspoken observations (See Appendix B: Focus Group Guides and Materials).

### 3.3 Beginning the data collection process

#### Finding and Training Data Collectors

Ideally, you should have several people available to collect the data. The actual decision on how many to assign to this task will depend on the resources that you have available, the previous experience of the team members, and members' desire and ability to collect data.

Once you have determined how many people are available for data collection tasks, you may want to determine which staff members are best suited to the collection of existing data and which are best suited to the collection of original data, each of which places unique requirements on the data

<b>Box 5 What Makes a Good Data Collector?</b>	
The collector of existing data should be	The collector of original data from people should be
— Detail oriented	— Amiable
— Persistent	— Fond of people
— Computer literate	— Multilingual
— Goal oriented	— A keen listener
	— An unbiased listener
	— Observant

collector. In box 5, we list *some* of the qualities that we view to be important in each type of data collector.

Each person selected to collect data must receive training before beginning the task. The training should be of sufficient length to prepare the individual for his or her role in the assessment and to ensure the individual's level of comfort. It is difficult to quantify the time required for training because of the differences in individuals' past experience with data collection, educational levels, and attitudes toward the importance (and sanctity) of research.

What will be included in the training? The individual must be allowed to become acquainted with the survey forms and tables and must have some hands-on experience in completing them. To provide you with some guidance on planning the training session, we have listed some of the activities that might be included.

#### Training Session Activities

- Introduce data collectors to each other and describe the role of the data collection process in profiling community food security.
- Encourage data collectors to review all data collection forms to gain an understanding of the relationship of each form to the outcome of the assessment.
- Make assignments for the collection of data.
- Allow data collectors the opportunity to review the forms for which they are responsible.
- Encourage survey data collectors to administer the forms to one another. For those assigned to the task of completing data tables, encourage individuals to access data from some suggested Internet sites or from available agency reports.
- As a group, review the completed forms and discuss ways to improve the data collection.
- Respond to questions and concerns raised by the group.

**Note:** Training should not be considered complete until trainees actually have the opportunity to use the data collection tools in a simulated practice session.

### **Selecting Respondents**

Sampling is a technique that is commonly used in social science research before the collection of data. It allows the researcher to save time and money by limiting the number of programs or participants who must be interviewed or observed during data collection.

This does not mean that you are allowed to pick and choose among available participants to arrive at a workable number. Rather, when drawing a sample, you will follow a series of steps to select a sufficient number of potential respondents to represent all available respondents. Thus, your sample will be a *representative sample* of the available population, allowing you to draw conclusions that may be extended to the entire community.

The strategy of selecting a representative sample and devoting resources to obtaining data from as many respondents in that sample as possible produces results that are superior to a half-hearted attempt to include everyone. In other words, a 75 percent response from a random sample of 100 is better than a 25 percent response from a population of 1,000.

There are several ways to create a sample. In the largest of studies, such as those conducted on a national basis, researchers often rely on special computer software to draw samples of respondents who will represent specific characteristics of the population. In smaller studies, researchers will consult a *Table of Random Numbers*.

Specific instructions for selecting a sample and determining sampling size are given as needed with the data collection tools listed in section 5.3 and included in appendix A.

## **3.4 Analyzing and interpreting the data**

Once the data are collected, they will be analyzed and used to develop a general picture of community food security. This section presents an overall discussion of the types of analytic approaches that can be used with a community food security assessment.

The analytic approach used will reflect the purpose of the assessment. For example, if the goal is to understand how the community compares with the Nation, the analysis will focus on comparisons with national standards. If the key is to develop an action plan, the analysis and presentation will be community specific and will use graphic display. If the purpose is to develop a baseline of information, then a spreadsheet compilation may be all that is required.

The analysis will be both quantitative and qualitative. The quantitative analysis will focus on measuring specific profiles of community characteristics, whereas the qualitative analysis will be used to describe some of the community dynamics. Qualitative analyses will use information collected through focus groups and other interviews.

Presenting the results of a community assessment to parties involved in the assessment process, key policymakers, and the broader public is an integral part of the process. Given the variety of audiences interested in the results, the presentation should be easy to understand. Thus graphic displays, maps, and tables should be used to present the data whenever possible.

### **Statistical Profiling**

A statistical profile of the community uses the data collected to describe various community aspects. These include the demographic, socioeconomic, and food security characteristics of community residents as well as the availability, accessibility, and

utilization of food-related resources and programs. Statistical profiles can be one-dimensional, presenting information for the whole community, or multidimensional, presenting data for the whole community as well as for its various subgroups. Statistical profiles can be based on percentages or raw numbers. The selection of the type of statistic to be used in a profile will depend on how information is available through existing sources, the size of the population being described, and the intended use of the data.

An example of statistical profiling is provided below using data from Drew County, Arkansas (table 1). A statistical description of the demographics of the population was developed by collecting information from the Census Bureau's Internet site [<http://factfinder.census.gov>]. (Unfortunately, at the time of printing, data from the 2000 census was not yet available for Arkansas). These data were then entered into the table format that is included in appendix A as table 2.

**Table 1. Demographic Profile of Drew County, Arkansas (1990 census data)**

<b>Demographic Characteristic</b>	<b>Census Data Table</b>	<b>Number</b>
<b>Total Population</b>	DP-1	17,369
<b>Gender</b>		
Male	DP-1	8,350
Female	DP-1	9,019
<b>Household Structure</b>		
Total households	DP-1	6,342
Persons per household	DP-1	2.63
<b>Family Households</b>		4,699
Married-couple families	DP-1	3,641
Other family, male householder	DP-1	196
Other family, female householder	DP-1	862
<b>Nonfamily Households</b>		1,643
Householder living alone	DP-1	1,500
Householder 65 years and over	DP-1	770
<b>Race/Ethnicity</b>		
White	DP-1	12,530
African American	DP-1	4,754
American Indian	DP-1	27
Asian/Pacific Islander	DP-1	23
Other	DP-1	35
Hispanic origin (of any race)	DP-1	92
<b>Age</b>		
< 5 years	DP-1	1,214
5–17 years	DP-1	3,615
18–20 years	DP-1	1,086
21–24 years	DP-1	1,079
25–44 years	DP-1	4,852
45–54 years	DP-1	1,744
55–59 years	DP-1	734
60–64 years	DP-1	699
65–74 years	DP-1	1,238
75–84 years	DP-1	861
85 years and over	DP-1	247



## Presenting the data

Once a statistical profile is complete the data can be presented in a variety of formats. The format chosen should reflect the intended purpose of the presentation. The following

figures present a description of the population of Drew County by age. Figure 1 uses a bar graph to show comparisons of the number of people in each age group.

**Figure 1: Age profile of Drew County, Arkansas**

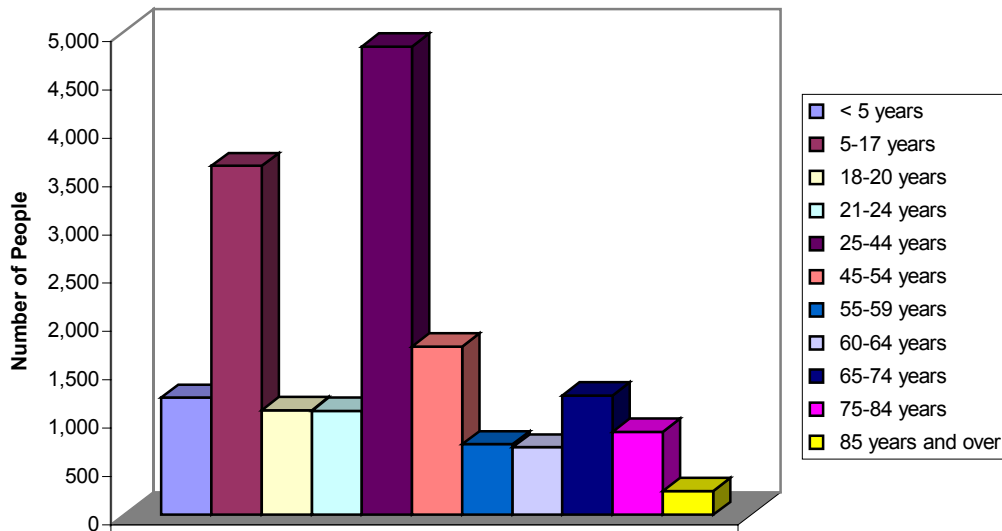
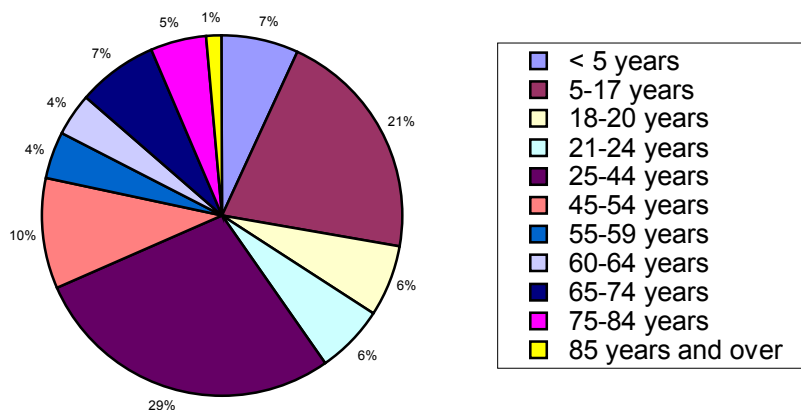


Figure 2 uses a pie chart to present the relative proportions of different age groups within the population.

**Figure 2: Age profile of Drew County, Arkansas**



## **Comparative Analysis**

To understand how your community compares with national standards or those of similar communities, you may want to do some comparative analyses. The first step is to compare data collected and prepared in the statistical profile with recognized standards. This task will be easier in some instances than others. Comparative statistics for national, State, or county data can be found from several sources. Demographic data can be found on the Census Bureau's Web site. Other data can be found through published papers and reports available from the U.S. Department of Agriculture, other Federal Government agencies, local government agencies, and related organizations.

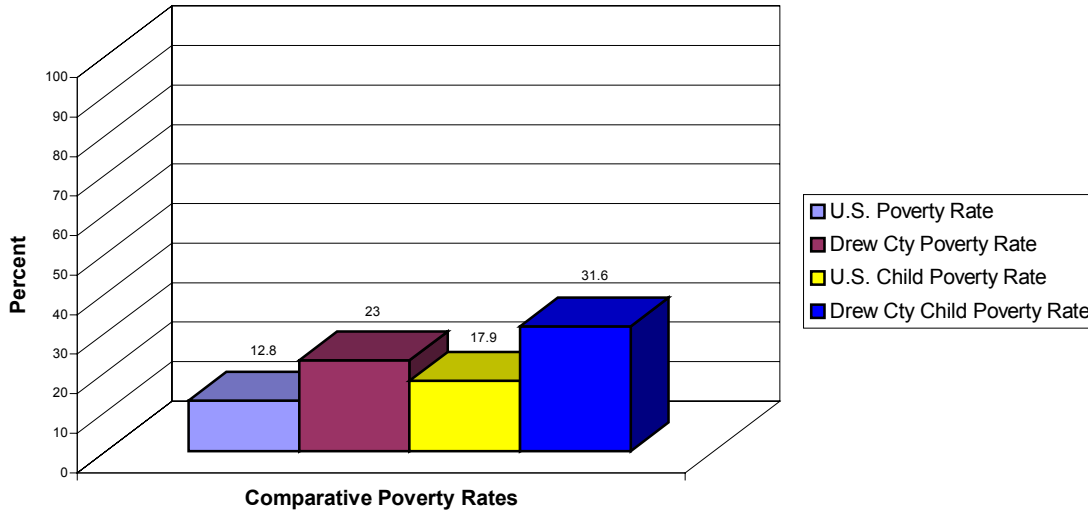
National databases, such as Census Bureau databases, will have similar data available for the U.S. population as a whole. Often they also will have State data available. Although data will be available from other

communities, comparisons across communities can be tricky. Communities differ greatly in size and general characteristics. If cross-community comparisons are desired, it is wise to consult with a statistician or research analyst who can help you identify appropriate communities with which to compare your results.

Comparisons also can be done over time. If you repeat your assessment on a regular basis, you can compare the results over time to mark your progress. Descriptive analysis of community factors such as policy, economic and political changes will be necessary to understand some of the underlying factors responsible for notable changes. For example, to understand how your community compares with the Nation with respect to poverty status, you can collect poverty data from the Census Bureau for both your county and the United States.

Figure 3 compares poverty data for Drew County, Arkansas with the U.S. national average.

**Figure 3: Comparison of U.S. and Drew County Poverty Rates**



Data can also be presented narratively, as in the paragraphs in Box 6.

### **Box 6**

#### **Narrative Presentation of Comparative Data**

In Drew County, 4,025 of the population of 17,369 people (23 percent) live below the poverty level. Of these, 1,493 are related children younger than 18 years of age. Among all children in the county (4,728 children), this figure represents a child poverty rate of 31.6 percent.

Comparatively, in the United States, 31,742,864 people, or 12.8 percent of all people, live in poverty. Of these, 11,161,836 are children. This figure represents a poverty rate among children of 17.9 percent.

## Community Mapping

Community mapping is an age-old technique that we recall as a map with pins or flags attached indicating the location of specific places or characteristics. This method, now often applied using computer-generated maps and technology, superimposes data variables onto a picture of a geographic area for the purpose of examining geographic variation in the data. It allows a community to pinpoint particular problem areas to identify problems with access to resources or services. A community map may be useful in identifying a physical barrier that influences the use of resources. For example, a river may impact food accessibility if all stores are on one side of the river and there is no public transportation available to cross the bridge to the area with the greatest poverty rate. More simply, a map helps to display the availability of resources within the most affected areas of the community.

As the team conducts the community food security assessment, it will be useful to map all resources and services identified, including food stores, emergency food providers, farmers' markets, food cooperatives, and Government food assistance programs. To help you develop these maps, location information tables are included in the toolkit where addresses can be recorded. Additional information from the Census Bureau can be used to map various community and population characteristics. (See box 7.)

The map will draw attention to the need for specific services and/or resources and will help to identify areas in which few services are within easy access of the families who need them. The process of mapping community-based resources may reveal problems with certain community locations and may give insight into the best locations for creating new or expanded services. The mapping process begins with a baseline map.

Some computer-generated community or county maps are available from the Census Bureau. More sophisticated mapping programs are available in individual software packages (e.g., MapInfo) or on Web-based applications (e.g., Mapquest or Yellowpages.com). However, mapping can also be done without the use of computer programs. A community map should be available from the local Chamber of Commerce, police or fire departments, schools, and government agencies. Symbols can be placed on the map to indicate different community resources, and overlays or shading can be developed to present demographic and food security-related characteristics by location.

### Box 7

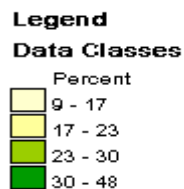
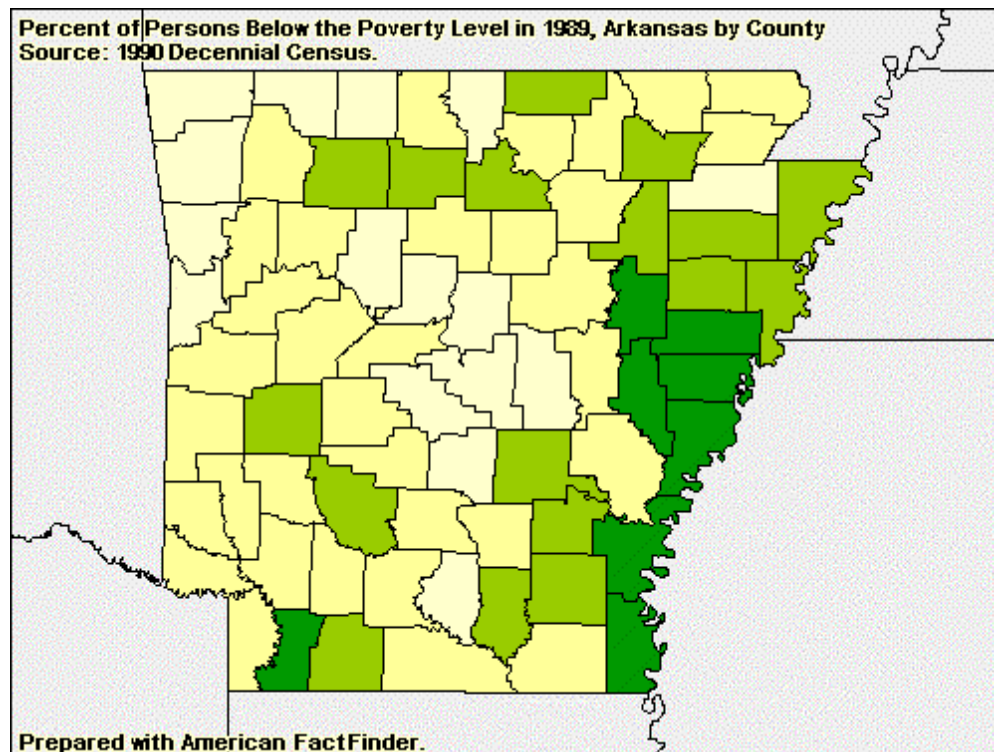
#### Developing Maps From Census Data

1. Go to [www.census.gov](http://www.census.gov) on the Web
2. Click on *American Factfinder* at the bottom of the left sidebar.
3. Click on *Thematic Maps*.
4. Click on "Change Selections."
5. Next to "Select the type of area," click on the arrow and select *County*.
6. Next to "Select State," click on the arrow and select your *State*.
7. A box will appear below "select geographic area" with the names of counties in your State. Select your *County*.
8. Click on *Show Map*.

Maps also can be used for displaying comparisons of a slightly different nature. You might choose to compare your county with another with respect to the number or distribution of people living in poverty or the number of grocery stores in the county. Using the Census Bureau's *American Factfinder* Web page, you can request maps that already have some of these data comparisons between counties within a State and throughout the

United States. Figure 4 shows poverty rates by county for the State of Arkansas.

**Figure 4: Percent of Persons Below the Poverty Level in 1989, Arkansas by County**



### Focus Group Analysis

Analyzing focus group data systematically requires that the discussion be recorded in a prescribed format. This task can be accomplished by creating a data-recording format that correlates directly to the relevant focus group guide. Each question should be situated on a separate page, and key phrases and comments indicating strong opinions, commonly held opinions, and issues that present the most diverse responses should be noted. Silences and notable reactions of the group should also be noted.

Before the data are analyzed, it can be useful to listen to the taped session since it is inevitable that some nuances will be missed during the session. Then, key findings should be summarized. These findings will include the issues discussed that most participants agree on or disagree on and the issues that created the most energetic discussion, represented a common experience, and so on. It may be helpful to use bullets to highlight the key points and to present a few direct quotations from the discussion that support your summarized point. If a series of focus

groups has been conducted, you can compare and compile the results.

Selected quotations recorded from a focus group session on food assistance programs are provided in Box 8 (questions 3 and 4 from the Moderator’s Guide for a Focus Group on Household Food Assistance in appendix B):

### **Box 8** **Sample Focus Group Analysis**

*What would you say are the best features of the food assistance programs you use? That is, what makes them really work for you? (Probe for staff attitude, location, easy access....)*

- I’ve been getting WIC coupons for my three children, and the people who work there are really like family. They know all of us and always give us good information on what to eat. They also help me figure out where I can get other help.
- I agree—WIC staff are great. They make going there to pick up the coupons very interesting. I always learn something new. It also helps that they are in the same building as my children’s doctor. I like to just make one trip.
- Yes, I agree too. *(Everyone in the group nods in agreement.)* WIC staff make it easy to get the coupons, and the food is a real help to our family. The people where I go for my stamps aren’t the same, but it’s nice to have the choice with food stamps. *(Again, lots of agreement.)*
- I think food stamps are so important to my family. Without them I wouldn’t be able to get enough food for my kids and me. And I like having a choice of foods I want to buy. Now that I get my food with a special card, I don’t even feel badly when I go to the supermarket. *(Lots of excited talking about how happy people are to have the benefit card that looks like a credit card.)*

*What are some problems you have had when using or trying to use the food assistance programs?*

- I don’t like having to go to the food stamp office. It always takes me a long time to get my business done, and the people there are not very nice and helpful. I have to take two buses, and I always miss one of them and end up waiting for a long time.
- Oh, I know what you mean. I used to have to take the bus. Now my neighbor has a car and she will let me know when she’s going and I can go too. Without her it might not be worth it to go down there.
- Why can’t they move the office to a better place? *(Unanimous agreement!)*
- Well, for me the hardest thing is knowing that I need help from anyone! I’m still embarrassed when I go to the store for food and have to use my food stamp card. People here know that’s what it is. The other day someone actually stopped me and asked me if it was for food stamps. Can you believe it?
- *(Digression as everyone talked together about how embarrassing food stamps can be and how inconsiderate other people are of their feelings.)*

**Box 8**  
**Sample Focus Group Analysis (continued)**

- A problem I have is that the foods that they tell me about in the WIC program are never available in my store, or they are so old I don't want to buy them. So then I have to pay someone to take me to the supermarket that has everything. But that takes me a long time to get to.

The following writeup would be used to summarize the discussion as presented above:

The group included 7 women and 5 men, all of whom had some current or past experience with food assistance programs. Of the 12 participants, 8 were white, 2 were African American, and 2 were Hispanic. In general, there were no differences noted by gender or race/ethnicity. People appreciate the value of the food assistance programs in helping to bring food into their homes. Features that enhance or detract from their experience with food assistance programs include staff attitudes, office location, availability of food in local stores, and stigma.

Some of the most important features of food assistance programs appear to be the following:

- Staff attitudes and willingness to help participants beyond handing them benefits
- Location of the program office
- Value of the food benefits for the family
- Having a choice of foods to purchase with the benefit
- Getting benefits in a way that doesn't stigmatize people

Participants were very vocal about the importance of the way that program staff treat them. The kindness and reinforcement received from staff at the WIC program were particularly noted by many, as summarized by one participant:

*I've been getting WIC coupons for my three children, and the people who work there are really like family...they know all of us and always give us good information on what to eat. They also help me figure out where I can get other help.*

There was also great excitement when discussing the benefits of having a "food stamp credit card" and the problems associated with having other people know that you are receiving some type of food assistance.

*Now that I get my food with a special card, I don't even feel badly when I go to the supermarket.*

*Well, for me the hardest thing is knowing that I need help from anyone! I'm still embarrassed when I go to the store for food and have to use my food stamp card. People here know that's what it is. The other day someone actually stopped me and asked me if it was for food stamps. Can you believe it?*

**Box 8**  
**Sample Focus Group Analysis (continued)**

Other problems highlighted by the group include the following:

- Remote location of the food stamp office
- Negative staff attitudes
- Difficulty in getting to the office using public transportation
- Not having desirable food available in local stores



### 3.5 Basic components of a community food security assessment

Before deciding exactly what data to gather, it is important to know something about the types of data that can help describe the food security situation in your community and sources of data and their availability. It is also important to know the core components underlying a community food security assessment. The comprehensive community food security assessment described in this toolkit includes six basic components:

- Profile of community socioeconomic and demographic characteristics
- Profile of community food resources
- Assessment of household food security
- Assessment of food resource accessibility
- Assessment of food availability and affordability
- Assessment of community food production

After meeting with your assessment team to set goals for the assessment and gathering input from key informants in the community, you might decide that a comprehensive assessment is unnecessary or too expensive and find that you want to focus your efforts on one or more, but not all, of these components. The following sections provide you with background on each of the different assessment components and with the data collection and analysis tools. These tools are designed to stand alone so that your data collection and analyses process reflects the unique food security challenges facing your community.

These tools include the following:

- Table shells and detailed instructions for collecting compiled existing data, including retrieving data from the Internet and other sources. It also includes some suggestions for

gathering existing uncompiled data from local agencies and others in your community. Sample table shells are available in appendix A.

- Focus group guides, recruitment flyers, screening guides, and survey instruments for key informant, household food security, food purchasing, food assistance program use, and community food production resources focus groups.
- A survey instrument for gathering data on the price and availability of foods at local food retailers.