

An Exploratory Study: The Rural Eating Assessment Project  
of Western North Carolina, Part 1  
Preliminary Findings Report



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## Executive Summary

Research has demonstrated an association with food access and dietary patterns. For example, those living in rural areas, lacking in environmental supports, have been shown to have less nutritious diets. Despite evidence of this disadvantage, rural areas have been understudied with regard to food access, particularly with regard to access to fruits and vegetables (FV). As diets adequate in FV can reduce many chronic disease risks, examining and overcoming barriers to FV consumption is critical to facilitate better health outcomes.

The purpose of this exploratory study, the Rural Eating Assessment Project (REAP), was to assess barriers and facilitators to eating fruits and vegetables among a purposeful sample of adults in the Western North Carolina (WNC) counties of Cherokee, Clay, Graham, Jackson, Haywood, Macon, Swain and Transylvania. Guided by a conceptual model that included separate consumer, retail and agency studies, a logical model was created and included a three-phase implementation of part 1 of REAP: The consumer assessment component. The current study is the first mixed method study known to the researcher conducted in the eight-county region of western North Carolina that addresses both barriers and facilitators to fruit and vegetable access. This report is composed of the descriptive findings of part 1 of the REAP study.

The mixed method design included paper and electronic surveys, intercept interviews and focus groups were used to collect data for the REAP study. The final sample (n= 242) consisted of 32% men and 68% women, mostly Caucasian. Thirty-nine percent of participants were age 50 and under and 61% were 51 and older. Slightly more than half of participants had 4 years or more of college. Thirty-seven percent reported working full-time, approximately 30% of participants were retired, one-third of participants reported an annual household income of more than \$50,000 per year and 27% reported incomes ranging from less than \$10,000-\$20,000 annually. The majority of REAP participants were from Jackson County (25%) followed by 19% from Macon, 14% from Cherokee, 12% from Swain, 10% from Haywood, 6% from Clay and 6% from Transylvania Counties.

The results of part 1 of REAP indicate that most participants feel confident in where to find FV and most feel that eating FV is very important or important. Almost half either do not know if they are eating enough or reported not eating enough FV. Participants reported eating fruit a median of 1.0 times per day and vegetables 1.5 times a day, consistent with the state median values of 1.0 and 1.6, respectively. When shopping for FV, freshness was the most important quality to participants. Taste, quality and variety were noted as facilitators to eating FV. A majority of participants obtained most of their food from grocery stores most of the time. During warm months, almost half of respondents obtained FV from gardens and just over one-third obtained FV from farmers markets. A majority of participants indicated that they would pay at least a small percentage more for their favorite fruit or vegetable at farmers markets compared to grocery stores.

Cost/price and a lack of time were the most common barriers to eating FV among all participants. Some respondents indicated that nothing prevented them from eating FV. Others noted a dislike for FV and a lack of storage space as barriers. Away from home, a lack of options on restaurant menus and concerns about unsafe foods (improper washing and handling) posed a barrier for some participants.

A lack of one-stop shopping at farmers markets was reported to pose a barrier for survey participants as well as inconvenient operation hours of markets and not knowing what is available at farmers and tailgate markets and farm stands. Other facilitators for farmers and tailgate markets cited were pricing in bundles, having more fresh FV and having more convenient access to FV. Qualitative findings from the current study showed a positive attitude and appreciation for local food and farmers, including giving back to the community.

Facilitators among focus groups were planning ahead so that one can eat more FV, as well as making it more convenient to eat FV, having gardens and lower prices of FV. Interviewees indicated liking the taste of FV was a facilitator. The ready availability of FV and the health and nutrition benefits, including being told by a doctor that FV were healthy for someone in the household also served to promote FV consumption. Surveyed participants reported wanting more affordable FV and having local food more available. A majority of all participants reported that being told by a doctor that FV were healthy for someone in the household as a facilitator.

Results suggest that consumers are interested in nutrition education about how to prepare quick, budget-friendly meals and the availability of recipe cards at points of purchase. Consumers expressed an interest in onsite cooking demonstrations, food preservation education, and onsite menu planning, suggesting that registered dietitians, health educators, health promotion professionals and Extension educators may want to incorporate or increase these modes of education into their health programming. Findings from the current study showed a positive attitude and appreciation for local food and farmers.

Overall, the REAP survey results suggest that consumers in WNC find eating FV important and are interested in and would benefit from local nutrition-specific actions and programs that address barriers and extend facilitators in efforts to increase consumption of FV. Recommendations about how to break down barriers and extend facilitators are provided in this descriptive report.

## Operational Definitions

**Community Transformation Grant (CTG)** is a Centers for Disease Control and Prevention (CDC) grant that supports community-level programs that prevent chronic diseases such as cancer, diabetes, and heart disease.

**FV** is an abbreviation for fruits and vegetables.

**Principle investigator (PI)** refers to the lead researcher of the study.

**MountainWise** is a CTG initiative that works with the eight westernmost counties of North Carolina to provide opportunities for physical activity, access to local fresh fruits and vegetables, provide support for tobacco-free places and access to services for chronic-disease management.

**Rural Eating Assessment Project (REAP)** is the term given to the study. This report focuses on part 1, the consumer assessment of REAP.

For the purposes of this study, **Western North Carolina (WNC)** will include only the following counties: Cherokee, Clay, Graham, Haywood, Jackson, Swain, Transylvania, as outlined in Region 1 of the Community Transformation Grant Program.

The **Western North Carolina Food Policy Council** is (WNCFPC) “aims to build more effective programs and policies to strengthen WNC’s food economy and economic security for all persons and to mitigate the effects of food insecurity in the WNC region, especially for children and seniors, by advocating for more effective policies and stronger local economies.”

## Introduction

Inadequate fruit and vegetable intake is one of four modifiable leading risk factors recognized worldwide that contribute to non-communicable diseases (Hosseinpoor et al. 2012). Evidence shows that diets deficient in nutrient dense fruits and vegetables increases risk of chronic diseases including coronary heart diseases (United States Department of Agriculture (USDA), 2010; Boeing, et al. 2012; Dauchet, Amouyel, Hercber, & Dallongeville, 2006; Bhupathiraju et al. 2013) and indirectly, type 2 diabetes (USDA, 2010; Boeing, et al. 2012), two of the top ten leading causes of death in the United States (Centers for Disease Control [CDC], 2010). Adults in the United States and in North Carolina eat fruit and vegetables a median of 1.1 times and 1.6 times per day, respectively (State Indicator Report, 2013). Unfortunately, these numbers indicate that American and North Carolinian diets are characterized by lower than recommended intakes of fruits and vegetables, most failing to meet the Dietary Guidelines for Americans (USDA, 2010).

Personal, social, economic, cultural and environmental factors affect our diets (Mader & Busse, 2011). Personal factors such as attitudes and self-efficacy (De Bourdeaudhuij, & Van Oost, 2000) have been shown to explain diet variance in adolescents and economic and social factors such as parent education and income have been associated with low intakes of fresh fruits, cooked vegetables, canned fruits and vegetable among children (Sausenthaler et al. 2007). Darko, Egget, & Richards (2013) report that among low-income families, the ability to consume nutrient-rich and varied diets may be hindered secondary to income status. In terms of environment, evidence suggests that certain geographical areas are at higher nutritional risk. States with citizens who consume the highest amounts of fruits and vegetables tend to have more environmental supports (State Indicator Report, 2013). Throughout the nation, rural residents bear a greater risk of making unhealthy dietary choices (Lutfiyya, Chang, & Lipsky, 2012) and may be disadvantaged in meeting Dietary Guidelines for Americans (Liese, Weis, Pluto, Smith, & Lawson, 2007). Hence, improving diets through interventions must incorporate environmental contexts of where people live to be successful (Lutfiyya, Chang, & Lipsky, 2012).

Liese, Weis, Pluto, Smith, & Lawson (2007) recognize that there is little knowledge surrounding the nutritional environment of rural areas and Sharkey, Johnson, & Dean (2010) report that there are limited studies focused on FV access in rural areas. Since rural populations face many health outcome disparities (Liese, Weis, Pluto, Smith, & Lawson, 2007), and given the correlations between poor nutrition and chronic diseases that cause premature death, there is a critical need to evaluate the nutrition environments in rural areas to aid in the mitigation of such disparities.

Greater access to quality and affordable FV is important to facilitate an increase in FV consumption (State Indicator Report, 2013, p. 2). Research indicates a relationship between greater barriers and less FV intake (Franko, Cousineau, Rodger, Roehrig, & Hoffman, 2013). Further, Mader & Busse state, "To improve food environments and health outcomes in rural communities, it is necessary to increase healthy food access, affordability, utilization, and consumption" (2011, p. 48). Yet exploration into such factors that so greatly impact rural health outcomes, particularly nutrient dense food access, is lacking. Therefore, the purpose of this exploratory study was to assess barriers and facilitators to eating fruits and vegetables among a purposeful sample of adults in Cherokee, Clay, Graham, Jackson, Haywood, Macon, Swain and Transylvania Counties. To the researcher's knowledge, the current study is the first mixed method study conducted in the eight-

county region of western North Carolina that addresses both barriers and facilitators to fruit and vegetable access.

## Regional Context

With a population of just under 300,000 (North Carolina Office of State, 2013), Western North Carolina (WNC) is comprised of predominantly rural areas, isolated communities and only a few urban centers (WNC Vitality Index, 2013). The WNC region experiences a higher poverty rate (13.19%) than the state average (12.30%) (Center for Economic Research, n.d.). All WNC counties in the current study exceed the state poverty rate with Clay and Graham Counties experiencing the highest poverty rate at 22.3% and 22.1%, respectively, followed in descending order by Jackson (20.2%), Swain (19.3%), Macon (19.0%), Haywood (18.6%), Cherokee (18%), and Transylvania (16.2%) Counties (see Figure 1).



**Figure 1.** WNC counties included in the REAP study. Copyright 2013. Used with permission from MountainWise.

The median household income for the counties under study range from the lowest in Graham County at \$28,000 - \$30,000 to the highest in Cherokee, Haywood and Transylvania Counties, all at \$38,000 - \$42,000, falling behind the state and national median income levels (WNC Vitality Index, 2013). The seasonally adjusted unemployment rate as of November 2013 was 7.4% in North Carolina, slightly above the US rate of 7.0% (United States Department of Labor, 2013). The unemployment rate as of August 2013 in Graham County was the highest among the WNC counties under study at 12.3% (Advantage West, 2013). Cherokee County had a 10.5% unemployment rate and Swain County fared only slightly better at 9.3% (Advantage West, 2013). Macon, Transylvania, Clay, and Jackson Counties had unemployment rates of 8.2%, 7.8%, 7.5%, and 7.2% in the same time period, respectively.

High unemployment and high poverty rates are often correlated (WNC Vitality Index, 2013). In addition, there is a positive direct correlation between unemployment rates and poverty rates with food insecurity rates (Map the Meal Gap, 2013). Food insecurity is defined by Anderson as, “Limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways” (1990, p. 1560). According to Feeding America’s Map the Meal Gap (2011), food insecurity rates are as follows: Cherokee

(15.1%), Clay (15.3%), Graham (18.7%), Haywood (14.1%), Jackson (16.1%), Macon (15.9%), Swain (18.3%) and Transylvania (13.9%).

Despite the economic hardships, western North Carolina boasts a rich environment with farmlands, outdoor activities and unique culture surrounded by beautiful mountains. A local food movement, spearheaded by concerned farmers, community members, and agriculture professionals began in 2000 (National Foundation, n.d.). Known as Appalachian Sustainable Agriculture Project, the non-profit agency has changed the landscape of food access for the better through various initiatives to connect people to their food and the promotion of localized food systems.

The plentiful region of local, fresh and healthy foods is paradoxical to the health and nutrition disparities that plague the region. Therefore further study of food access in WNC is essential to understand the divergence so that interventions can be pursued.

### Purpose

The purpose of this exploratory study was to assess barriers and facilitators to eating fruits and vegetables among a purposeful sample of adults in Cherokee, Clay, Graham, Jackson, Haywood, Macon, Swain and Transylvania Counties. This study stemmed from stakeholder feedback in WNC, including the WNC Food Policy Council (WNCFPC). The WNC Food Policy Council seeks to advocate for strong economic and food policies to mitigate the effects of food insecurity in the region (WNCFPC, n.d.). There is little research about the nutritional environment in rural areas that emphasizes access to fruits and vegetables. Therefore, the two central research questions were:

1. What are the barriers to eating fruits and vegetables in select WNC counties?
2. What are the facilitators to eating fruits and vegetables in select WNC counties?

### Conceptual Model of the Research Study

The MountainWise Regional Coordinator outlined the conceptual model of the research study (see Figure 2).



**Figure 2.** Conceptual model of the Rural Eating Assessment Project (REAP).

## Phases of Part 1: Consumer Assessment

Based on the conceptual model, the PI developed a phase approach to part I of the REAP study (see Figure 3). The needs assessment involved gathering stakeholder input and conducting a review of literature. Research design and implementation included creation of a logic model and theory constructs to guide the study, completing an institutional review board application, recruiting subjects through various organizations, instrument creation, administration, and data collection. The final phase of data management and results included compiling both quantitative and qualitative data, entering and analyzing quantitative data in Statistical Packages for Social Sciences (SPSS), and transcription and analysis of qualitative data.

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REAP Part 1: Consumer Assessment	<b>Phase 1</b> Needs Assessment
	<b>Phase 2</b> Research Design and Implementation
	<b>Phase 3</b> Data Management and Results

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*Figure 3.* Phased approach to part 1 of REAP.

## Logic Model

Using the conceptual framework of the study (Figure 2), the principle investigator (PI) designed a logic model (see Appendix A) to further guide the project. The current study focused on the consumer assessment (part 1) component of the logic model. The consumer assessment (part 1) of the consisted of three phases: Needs assessment; research design and implementation; and data management and results.

### Phase 1: Needs Assessment

#### Research Assistants

The PI created a job description and sent it out to nutrition majors/nutrition club listserv at Western Carolina University (WCU). The job description was also shared with Environmental Health professors at WCU to share with students who might be interested. The PI hired four research assistants (RAs). The PI created a training manual for the RAs. The PI held weekly online meetings with RAs for planning, logistics in data collection, and coordinating data collection.

## **Stakeholder Input**

The MountainWise Regional Coordinator first met with the PI and shared an overview of a mixed method study concept. Next, the Regional Coordinator shared project concepts as discussed with the PI with community partners and asked for feedback via email. Partners from Cherokee, Jackson, Swain, Haywood Counties, and Cherokee/Qualla/Eastern Band provided written feedback in terms of what might be added and general thoughts that were all forwarded to the PI. The PI contacted the Western North Carolina Food Policy Council Director by phone and further discussed her council's vision and suggestions for the study.

## **Literature Review**

The PI reviewed dozens of peer-review articles and relevant nutrition reports. The articles were divided up evenly between PI and RAs to review. Literature reviews were written up and posted in common Google Groups for easy access.

## **Phase 2: Research Design and Implementation**

Using information gathered from the needs assessment, the PI created a logic model for the study (see Appendix A). The mixed methods design study included quantitative data collection via a paper and online survey. The qualitative component of the study included intercept interviews at farmers markets and focus group sessions in communities throughout WNC.

The PI created data collection instruments based on reviewing literature, reports, and incorporating stakeholder feedback. Constructs from the social cognitive theory were central to developing the instruments with a focus on barriers and facilitators. Western Carolina University's Institutional Review Board (IRB) approved the study.

## **Focus Group Discussion Guide**

The first instrument created was the focus group discussion guide (see Appendix B). The REAP focus group guide was modified from a focus group guide developed by Community Transformation Grant Region 5 staff member and Health Department staff member Person County who conducted a similar study (Creson & Martinie, 2013). The Person County demographic profile that accompanied the focus group discussion guide was also modified for the current study. Questions from a Washington State WIC Nutrition Program document that included questions about acquiring fruits and vegetables were also modified (Washington State WIC, 2012). In addition, the PI contacted Ming-Chin Yeh and received permission to use focus group questions he used in a similar study (Yeh, Ickes, Lowenstein, Shuval, Ammerman, Farris, & Katz, 2008). The final focus group instrument contained ten open-ended questions and 21 demographic and closed-ended questions.

Once the PI drafted the focus group discussion guide, it was sent to a panel of experts, including two registered dietitians, the MountainWise team (Region 1 Coordinator and three Intervention Leads), the director of the WNCFPC, the RAs, and a community partner with the Eastern Band. Expert reviewers were asked to evaluate the instrument for readability and content. Revisions were made based on feedback from the expert panel. The final ten-question instrument with 21-question profile/behavior questionnaire can be found in Appendix C.

Focus groups were conducted in person at the selected location within the county being studied. One person from the REAP team or MountainWise served as moderator. One-to-two recorders were present to take notes. The focus groups were recorded with a digital recorder and transcribed by the REAP team members or MountainWise team.

### **Interview Questionnaire**

The interview questionnaire was developed next (see Appendix C). Many of the same questions were used or modified from the focus group discussion guide, with the intention of keeping the fundamentals of the questions the same. Consideration for the need for brevity in interview settings was made. The interview questions were sent out for expert panel review and the Region 1 Coordinator, the Intervention Leads, one registered dietitian and the research assistants responded. Edits were made based on feedback.

Intercept interviews were conducted in person. Adults were recruited by the REAP team if they looked approachable. The REAP team briefly stated the purpose of the interview and asked volunteers to interview. If participants agreed, the consent form was briefly discussed and signed by the participant. The interview questionnaire consisted of 17 questions, including four closed-ended, six open-ended questions and 11 demographic-related questions. The interviews took approximately 10 minutes per person.

### **Survey**

The survey was developed using closed ended questions and included many of the same questions from the focus group and interview questionnaire, particularly with regard to demographic questions (see Appendix D). Barriers and facilitators that had been cited in previous studies were included on the survey. One major difference in the survey as compared to others found in the literature is that it included price-point questions about willingness to pay for select fruits and vegetables and likelihood of participating in programs that might facilitate greater consumption of fruits and vegetables. The survey also included questions about where participants bought fruits and vegetables in the cooler versus warmer months of the year. The survey was piloted in an upper division nutrition class. Edits were made based on feedback. The final survey consisted of 28 (many of which were multi-part) questions.

### **Data Collection Plan**

#### **Participant Selection**

The PI brainstormed consumer access points with the Region 1 Coordinator in person and discussed possibilities with the WNCFPC Director by phone. The PI further discussed consumer access points with RAs. Based on stakeholder desire to reach a variety of income levels in the study and stakeholder input, a purposeful sampling was utilized. Consumer access points changed weekly, depending on the responsiveness of potential participants contacted as reported by RAs. The final sample for focus groups was recruited by Extension Offices in Haywood, Macon, Swain and Transylvania Counties and the Graham County Transit. The final sample for interviews was recruited at seven farmers/tailgate markets in Cherokee, Clay, Haywood, Jackson, and Swain Counties and three food programs in Cherokee, Jackson and Macon Counties. The final sample for paper surveys were Southwestern Child Development Daycare Centers in Cherokee, Clay, Graham, Haywood, Jackson, Swain, and independently owned daycare centers in Transylvania County. Paper surveys were also distributed to libraries in Cherokee, Clay, Graham, Haywood, Jackson,

Macon, and Swain Counties. Electronic surveys were distributed to Catholic priests and Methodist pastors and to the Graham County Extension electronic newsletter list.

### **Human Subject Protection**

The PI completed an IRB application and submitted it to Western Carolina University. The IRB approved the current study.

The PI called Extension offices in each of the counties using contact phone numbers from county Extension websites. In the literature, Extension offices were cited as being helpful in this regard. The family and consumer agents were the first line of contact considering their areas of responsibility typically include nutrition. If no family and consumer agent was listed, the Expanded Food and Nutrition Education Program (EFNEP) or 4-H Agent was contacted. In total, four Extension offices participated in and hosted the focus group recruitment and one Extension office distributed an electronic survey link.

RAs divided up the responsibilities of contacting family resource centers, farmers and tailgate markets, Laundromats, and daycare centers. RAs were asked to make a list of the names, addresses and contact information of each location and post it on a central group page, contact each person, and track agreement to participate. One RA set up a Google groups page so that information could be posted tracked and shared throughout the research study. The PI focused on church recruitment.

Owners of Laundromats were extremely difficult to contact. This is likely due to owners being off-site in most cases in rural Laundromat locations. The REAP team decided to drop the Laundromats from data collection site options since so many were unable to be contacted.

Family Resource Center Directors were also difficult to contact. Some counties do not have a Family Resource Center, so similar or alternate organizations were contacted (ex: Graham County Stecoah Valley Center). Many centers do not have websites with contact information. The RA charged with contacted Family Resource Centers placed phone calls to at least one Family Resource Center or similar organization in each county multiple times and left messages over a three-week period. Limited response required us to seek alternate locations for data collection. Our efforts to work with REACH agencies throughout the region were similarly difficult. Many of the contacts were on vacation during the summer months of the study, making contact particularly challenging.

Once contact persons at each agency/organization agreed to participate, written permission was gained for the IRB application.

## **Phase 3: Data Management and Results**

### **Data Management**

Electronic surveys were exported from Qualtrics into SPSS and numbered. Paper surveys were numbered using the next consecutive number and entered into SPSS. Variable names and options were synced between the two types of surveys and then merged into a single SPSS file. Since Caucasian was the predominantly all other races were recoded into on variable as non-Caucasian. Some denominations of religious affiliations with low frequencies were collapsed into a single denomination variable as “other.”

Focus group transcripts were initially evaluated for themes by REAP team members and CTG staff. Next, the PI and lead RA re-read the transcripts and coded them for themes. Themes were compiled by the PI and re-checked by the lead RA. Quantifiable focus group and interview questions that were the same as those in the survey were added to the SPSS database (mostly demographic information).

A document with interview questions was used to collate all interview question responses. Each question was typed at the top and word-for-word quotes were typed from the interviews into the document. Quotes were double-checked. The PI and lead RA separately coded the interview data, combining similar answers, and then counting frequency responses.

## *Electronic Surveys*

### *Churches*

The PI invited churches to participate in an electronic (Qualtrics) survey, which was the same as the paper survey. Churches with an organizing body, such as Methodist and Catholic churches, were selected because it seemed logical to make contact with heads to gain permission and access. District Superintendents Reverend Amy Coles, Smoky Mountain District and Reverend John Boggs, Blue Ridge District of the Western North Carolina Conference of the United Methodist Church granted permission via email. Email addresses of Methodist pastors in both districts, covering all seven counties in the study, were accessed on the United Methodist district websites. The PI sent the email with survey link out to pastors and asked that they send it out to their members if they had listservs and that they include their link in their church bulletin. A blurb for the bulletin was provided with the link. Pastors were also asked to forward the message to any new pastors or pastors that may be at a different location due to recent pastor appointments. One reverend that was emailed requested paper surveys for her Methodist Churches. Paper surveys were mailed to her and one of the RAs met the reverend in Franklin to pick up completed surveys three weeks later.

The PI contacted an executive assistant to Monsignor Mauricio W. West, Vicar General of the Roman Catholic Diocese of Charlotte, to gain permission to send the survey out to catholic reverends in WNC. Email addresses of Catholic reverends in were accessed on the Catholic Diocese of Charlotte website. The PI sent the email with the electronic survey link out to and asked that they send it out to their members if they had listservs and that they include their link in their church bulletin. A blurb for the bulletin was provided with the link.

In addition, the Truett Baptist association (TBA) website was accessed for contact information for Baptist churches in the region. A TBA contact person found on the website was asked to email survey to the TBA email contact list. The contact person agreed. It is unknown if the survey was mailed out by the contact person.

### *Graham County Extension*

The PI contacted the Family and Consumer Science Extension Agent in Graham County. She recommended distributing the electronic survey to her email list of newsletter recipients. The PI created a duplicate survey for this population, sent the link, and left the electronic survey open for one week. The agent confirmed that the link was sent out and responses were collected.

## *Paper Surveys*

### *Daycares*

The PI contacted Area Administrative Coordinator of Southwestern Child Development Commission, Inc. Daycare Centers, a private non-profit agency that operates early childhood education centers in Cherokee, Clay, Graham, Haywood, Jackson, Macon and Swain Counties and the Qualla Boundary. The Area Administrative Coordinator notified directors at each of the Southwestern centers. Eleven daycares in Cherokee, Clay, Graham, Jackson, and Haywood counties with a total enrollment of 421 were invited to participate. Two independent daycares in Transylvania County were contacted and invited to participate since Southwestern did not operate a center in that county. The PI drafted letters to parents and daycare directors. An RA created a colorful marketing handout was in hopes to encourage parents to take the survey. Paper surveys, consent forms, parent letters and director letters were copied and collated into packets by two RAs. Parents were invited to volunteer, sign the consent form, complete a survey, and seal their materials in an envelope provided and return to their child's daycare director. Packets were delivered by RAs to centers in Haywood county and Jackson county. The PI delivered letters and surveys to the Southwestern Director and she distributed them to Cherokee, Clay and Swain daycare centers. The PI delivered surveys to the Graham County daycare center. RAs made calls one week and two weeks later to ask about parent response. RAs made final calls to see if any surveys were returned at week three and four. The PI and RAs retrieved surveys and consent forms. Valid responses were retrieved from centers in Clay, Cherokee, Haywood, and Transylvania counties.

### *Libraries*

The library branch heads at Fontana Regional Library, Nantahala Regional Library and the Transylvania County branch were contacted by phone by an RA about conducting paper surveys in their specific library branches within the counties under study. In counties where there were two or more libraries, one library was often selected (ex: Cherokee). The following libraries allowed the REAP team to set up a table or use a library table to solicit participation in REAP paper surveys: Murphy Public Library in Cherokee County; Moss Memorial Library in Clay County; Graham County Library in Robbinsville, Jackson County Public Library in Sylva; Marianna Black Library in Bryson City (Swain County). Two Macon County libraries participated, including the Macon County Public Library in Franklin, and Nantahala Community Library.

### *Focus Groups*

Focus groups were mainly recruited with the use of Extension offices, but also included one transit agency and senior citizens center (see Table 1). Participating agencies invited participants to sessions. The study was explained at the outset of the session and participants were given the option to volunteer. Below is a table of the agencies that participated, contact person, moderator from the research team, and participant characteristics.

**Table 1.** Focus group participants by county and organization; contact person and main characteristics of participants.

County	Organization	Contact
Graham	Graham County Transit	Juanita Colvard, Director, Graham County Transit
Haywood	Haywood County Extension	Julie Sawyer, Extension Agent, Family and Consumer Sciences
Macon	Macon County Extension	Sherrie Peeler, Extension Agent, Family and Consumer Sciences
Swain	Swain County Senior Center	Steve Dickie Barker, Site Manager, Swain Senior Citizens Center
Transylvania	Transylvania County Extension	Sara Freeman, Program Assistant Expanded Food and Nutrition Education Program (EFNEP)

## Interviews

### Farmers Markets and Tailgate Markets

Appalachian Sustainable Agriculture Program’s local food guide was consulted to find contact information for farmers and tailgate markets in counties under study. Farmers and tailgate market operators were contacted by email and/or phone. Once verbal or written permission was granted, the PI sent an official letter where they responded with official permission for the IRB application. Interviews were conducted face-to-face at one time for 1-3 hours by two REAP team members on site at farmers markets. A goal of 10-12 interviews was set for each site.

### Food Programs

An RA contacted Community Table in Jackson County by phone to orient the director to the REAP project. The PI sent an email to the director and received permission to conduct interviews with Community Table participants. Community Table is a nonprofit organization that serves home-cooked meals at no cost and also has a pantry that provides food boxes for home use.

The PI contacted the pastor at the Welcome Table in Andrews (Cherokee County) by phone. The pastor gave written permission via email to conduct interviews at the Welcome Table. The Welcome Table is a ministry of Andrews United Church that provides meals and fellowship once a week to community members who attend (church membership not required).

The PI contacted CareNet in Macon County about conducting interview using their online information request form. The director contacted the PI by phone and arrangements were made to conduct interviews at CareNet. CareNet is an organization that provides food and limited financial assistance to individuals in need.

#### **Macon County Fair**

The opportunity to interview people at the Macon County fair came about later in data collection. It was deemed desirable to capture a wide variety of people at this opportune locale. The MountainWise Region 1 Coordinator granted permission for the REAP team to conduct interviews during the fair. REAP team members conducted interviews for approximately three hours during one day of the fair.

## **Results**

### **Quantitative Findings**

#### **Demographics of Participants**

Descriptive statistics and frequencies were employed. Table 2 contains demographic information collected from all surveys, interviews and focus groups. The final sample size for the entire group (surveys, focus groups and interviews) was 242 (32% male and 68% female). The participants were mostly Caucasian women. The largest proportion of participants (almost one-third) was within the age range of 51-65 years while the small proportion was over the age of 75 at 8%. Slightly less than 25% of participants reported their highest level of education to be high school diploma or less. About half (52%) of participants had 4 years or more of college. Thirty-seven percent reported working full-time and approximately 30% of participants were retired. One-third of participants reported an annual household income of more than \$50,000 per year. The largest proportion of REAP participants was from Jackson County (61, 25%). Clay County had the fewest participants (14, 6%).

**Table 2.** Demographic characteristics of REAP participants.

Demographic Characteristic	Survey (n=113)	%	Interview (n=107)	%	Focus Group (n=24)	%	Total	%
<b>Gender</b>								
Male	35	31	40	38	3	13	78	32
Female	77	69	66	62	21	88	164	68
<b>Race &amp; Ethnicity</b>								
Caucasian	104	94.5	95	89	20	87	219	91
Non-Caucasian	6	5.5	12	11	3	13	21	9
Hispanic	2	2	0	0	0	0	2	<1
<b>Age</b>								
18-35	21	19	18	17	2	8	41	17
36-50	24	21	19	18	10	42	53	22
51-65	35	31	36	34	8	33	79	32
66-75	25	22	25	23	1	4	51	21
Over 75	8	7	9	8	3	13	20	8
<b>Education</b>								
Less than High School	2	2	12	11	1	4	15	6
High School Diploma	16	14	23	22	4	17	42	17
Less than 4 Years College	36	32	16	15	3	13	55	23
4 Years College	19	17	30	28	7	30	56	23
More than 4 Years College	40	35	22	21	8	35	70	29
Other	0	0	4	4	0	0	4	2
<b>Employment Status</b>								
Working full-time	46	41	28	26	15	63	89	37
Working part-time	13	12	15	14	4	17	32	13
Disabled/Unable to Work	6	5	12	11	0	0	18	7
Unemployed	5	4	10	9	0	0	15	6
Retired	34	30	35	33	2	8	71	29
Other	8	7	7	7	3	13	18	7
<b>Annual Household Income</b>								
Less than \$10,000	11	11	21	22	0	0	32	14
\$10,000-\$20,000	11	11	15	16	4	17	30	13
\$20,001-\$30,000	18	17	10	10	4	17	32	14
\$30,001-\$40,000	7	7	12	13	3	13	22	10
\$40,001-\$50,000	21	20	9	9	5	21	35	16
More than \$50,000	37	35	29	30	8	33	74	33
<b>Number in Household</b>								
1	20	18	25	23	7	29	52	21
2	50	44	50	47	5	21	105	43
3	22	20	11	10	3	13	36	15
4	13	12	11	10	5	21	29	12
5	6	5	3	3	0	0	9	4
6	2	2	3	3	2	8	7	3
7	0	0	3	3	2	8	5	2
8 or more	0	0	1	1	0	0	1	1
<b>County of Primary Residence</b>								
Cherokee	16	14	18	17	0	0	34	14
Clay	4	4	10	9	0	0	14	6
Graham	17	15	1	1	2	9	20	8
Haywood	1	1	18	17	4	17	23	10
Jackson	33	29	28	26	0	0	61	25
Macon	26	23	17	16	4	17	47	19
Swain	10	9	14	13	5	22	29	12
Transylvania	6	5	1	1	8	35	15	6

*Note.* Percentages rounded. Missing data excluded.

Participants in the REAP surveys and interviews also self-reported their zip codes. See Table 3 for the distribution of participants according to zip code.

**Table 3.** Percent of participants included by self-reported zip code (n = 221).

County	Frequency
<b>Cherokee</b>	
28781	4
28901	22
28903	
28905	1
28906	11
<b>Clay</b>	
28902	3
28904	7
28909	1
<b>Graham</b>	
28733	
28771	16
<b>Haywood</b>	
28716	2
28721	2
28738	
28745	1
28751	2
28785	1
28786	7
<b>Jackson</b>	
28703	
28707	2
28717	6
28723	4
28725	1
28736	
28779	35
28783	1
28788	2
28789	2
<b>Macon</b>	
28734	32
28744	1
28741	
28763	6
28775	
<b>Swain</b>	
20702	1
28713	23
28719	1
<b>Transylvania</b>	
28708	
28712	4
28718	1
28723	4
28747	
28766	
28768	1
28772	
28774	
<b>Other</b>	8

REAP participants also self-identified their religious affiliation (see Table 4). Baptists and Methodists made up the largest proportion of respondents, with almost one-third (29%) of participants reporting to be affiliated with the Baptist denomination and 25% reporting an affiliation with the Methodist denomination.

**Table 4.** Self-reported religious affiliation (n=243).

Religious Affiliation	<u>Frequency</u>	<u>%</u>
Baptist	71	29
Methodist	61	25
Other	33	14
Non-denominational	32	13
Catholic	20	8
Other Protestant	10	4
Prefer not to say	8	3
Lutheran	6	2
Presbyterian	2	1

### **Dietary Behaviors Related to FV**

The majority (71%) of participants (n=240) reported being the primary food shopper in their family while 20% reported sharing the responsibilities equally. Participants (n=244) described the importance of eating FV as very important (71%), important (20%), and somewhat important (9%) with only one respondent reporting that it was not important to him/her to eat FV. Of the 136 participants who were asked if they felt like they typically ate enough FV on most days, 53% responded yes, 43% responded no, and 4% were not sure. Using a scale of 1 being not confident and 5 being very confident, a majority (66%) of participants felt very confident (5 rating) and 20% reported a 4 rating that they knew where to get FV (n=244). Less than 3% reported a confidence level of 1 or 2.

FV intake reported by participants in this study was a median of 1.0 time per day for fruit and a median of 1.5 times per day for vegetables. Almost half (49%) of participants reported eating fresh fruit two or more times per day and approximately 8% reported eating canned fruit, 4% reported eating frozen fruit and 17% reported consuming fruit juice two or more times per day. See Figure 4. More than half (62%) of respondents ate fresh vegetables two or more times per day, while 15% ate canned vegetables, 15% ate frozen vegetables, and 5% consumed vegetable juice two or more times per day. See Figure 5.

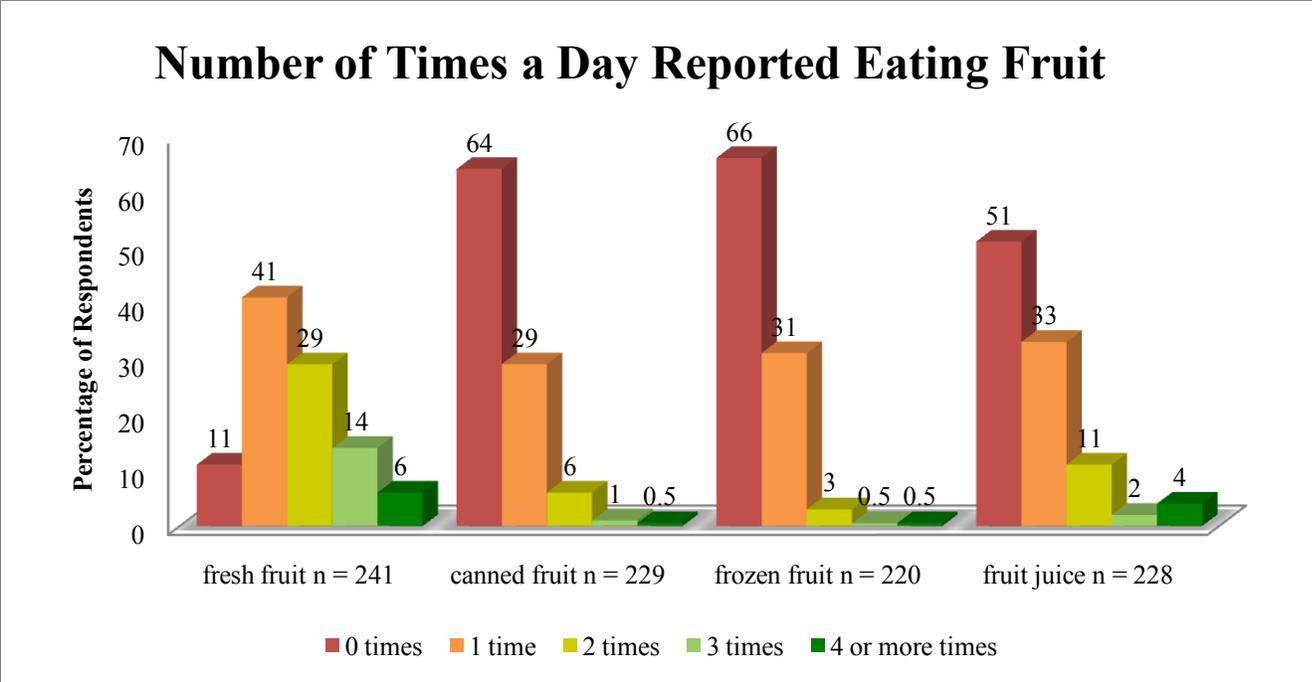


Figure 4. Times Per Day Respondents Eat Fruits.

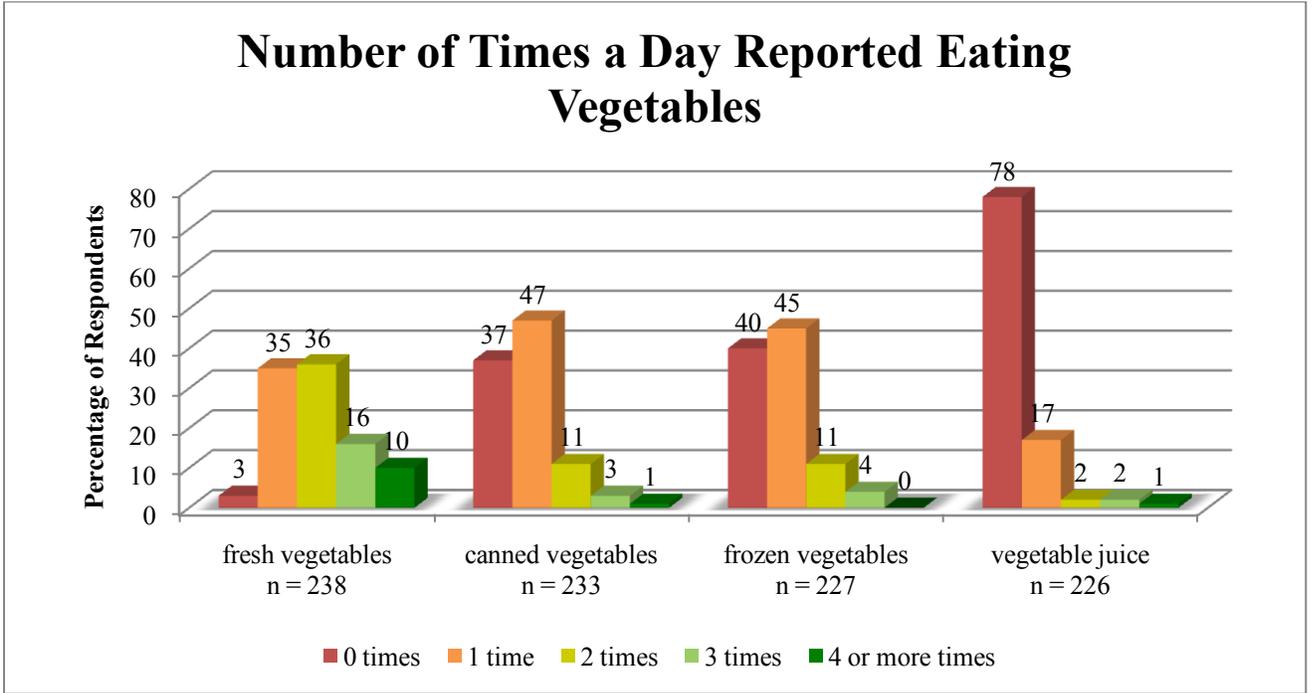


Figure 5. Times Per Day Respondents Reported Eating Vegetables.

## Food Source Sites

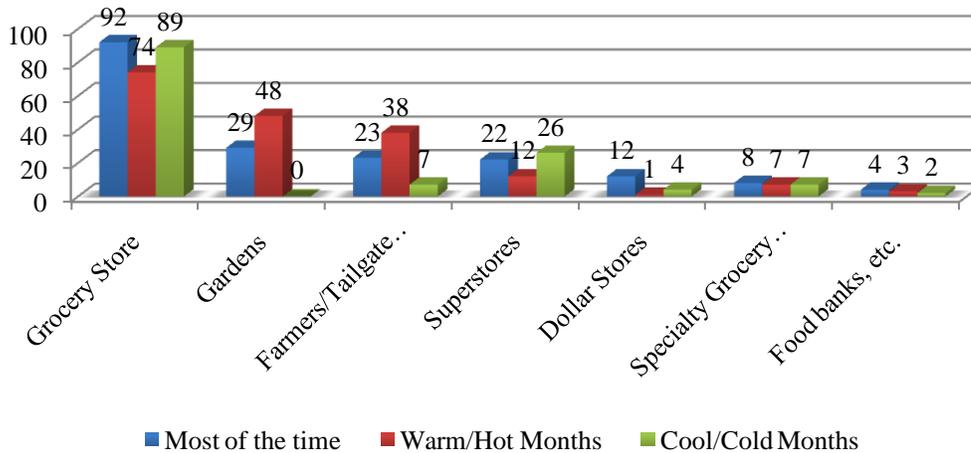
Participants were asked to indicate the top two locations that they obtained most of their food. A large majority (92%) of participants indicated that they obtained their food from grocery stores or super markets most of the time, during warmer and hot months (74%) and during cooler and cold months (89%) (see Table 5). Almost one-third reported getting their foods in their own gardens, friends' gardens or church gardens (29%) and 23% reported farmers/tailgate markets or farm stands the source of where they get most of their food. Gardens as sources of food increased in the hot and warmer months with 48% reporting as the place they get most of their food. Farmers, tailgate markets and farm stands also increased in warmer months to 38% of participants reporting them as the source they obtained most of their food. Almost one-fourth (22%) reported obtaining their food from superstores/big box stores most of the time and 12% reported getting most of their food from Dollar Stores. No participants reported obtaining their foods from convenience stores or corners stores most of the time. Only 4% reported obtaining most of their foods from food banks or similar organization most of the time and 2% reported Community Supported Agriculture as the source of most of their food most of the time. Almost one-third of participants (30%) reported using canned, frozen or dried foods in the cooler and cold months and 26% reported shopping at superstores/ big box stores during the cooler seasons. Figure 6 displays a comparison of the most reported locations.

**Table 5.** Focus group and survey participant reports of where they obtain most of their food.

Location	Most of the Time				Warmer and Hot Months				Cooler and Cold Months			
	No		Yes		No		Yes		No		Yes	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Do not get FV	-	-	-	-	136	99	1	1	135	99	2	1
Convenience stores/corner stores	137	100	0	0	132	96	5	4	136	99	1	1
Dollar stores	120	88	17	12	136	99	1	1	131	96	6	4
Food bank or similar organization, community kitchen	131	96	6	4	133	97	4	3	134	98	3	2
Regular grocery store or supermarket	11	8	126	92	35	26	102	74	15	11	122	89
Specialty grocery store	126	92	11	8	128	93	9	7	127	93	10	7
Superstores/big box stores	107	78	30	22	120	88	17	12	101	74	36	26
Fast food restaurants	130	95	7	5	-	-	-	-	137	100	0	0
Other Restaurants	123	90	14	10	-	-	-	-	131	96	6	4
Restaurants	-	-	-	-	134	98	3	2	-	-	-	-
Community Supported Agriculture (CSA)	134	98	3	2	135	99	2	1	136	99	1	1
Farmers/tailgate markets or farm stands	105	77	31	23	85	62	52	38	127	93	10	7
Gardens (own, friends)	97	71	40	29	71	52	66	48	-	-	-	-
Home-canned, frozen or dried food	-	-	-	-	-	-	-	-	96	70	41	30
Other	136	99	1	1	-	-	-	-	-	-	-	-

*Note.* Dash indicates question was not asked; n = 137.

## Where Do You Get Your FV Most of the Time; In Warm/Hot Months; In Cold/Cold Months?



**Figure 6.** Most reported locations for obtaining food according to focus group and survey REAP participants.

### Distance from Food Sources

Of those who were asked (n=135), sixteen percent of participants reported living less than one mile from a grocery store/supermarket and about 13% reported living less than one mile from a farmers market/tailgate market/farm stand (see Table 6).

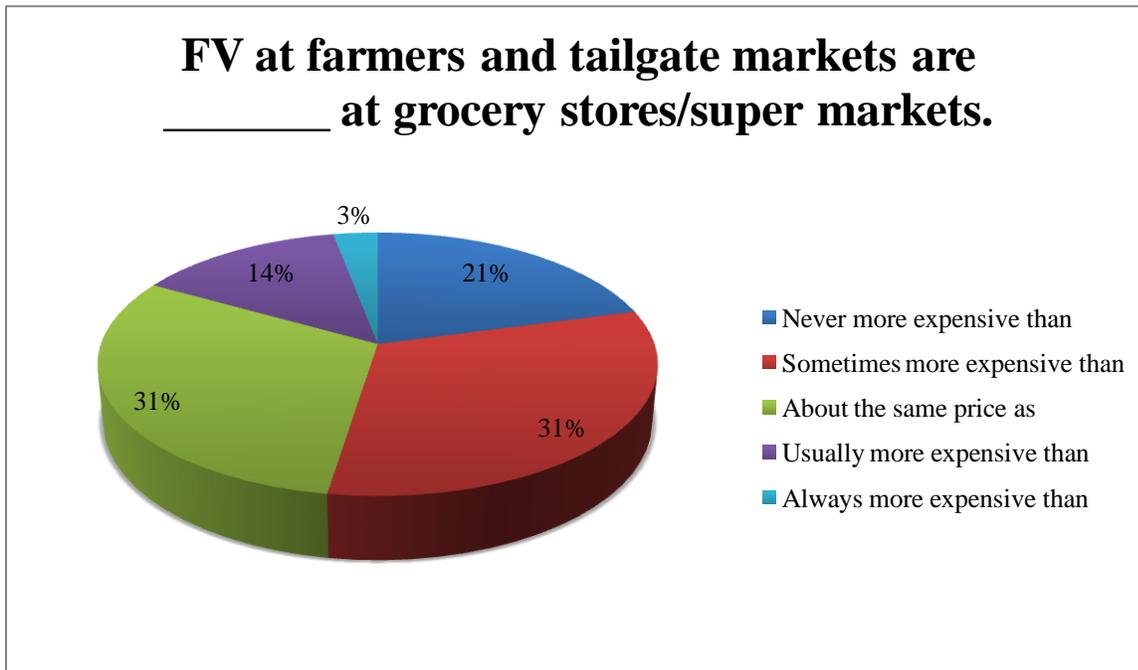
**Table 6.** Reported distance to grocery store or supermarkets and farmers markets/tailgate market/farm stands.

Mileage/Distance	Grocery Store/Super Market n=135		Farmers, Tailgate Market/Farm Stand n=134	
	No.	%	No.	%
Not Sure	2	1	9	7
Less than 1 mile	21	16	18	13
1-3.9 miles	40	30	49	37
4-6.9 miles	26	19	24	18
7-10 miles	23	17	16	12
More than 10 miles	23	17	18	13
Total	135	100	134	100

### Farmers Market/Tailgate Market Perceptions

When asked to fill in the blank, “FV at farmers or tailgate markets are \_\_\_\_ at grocery stores/supermarkets,” the survey responses (n=113) were as follows: About 17% said that farmers/tailgate

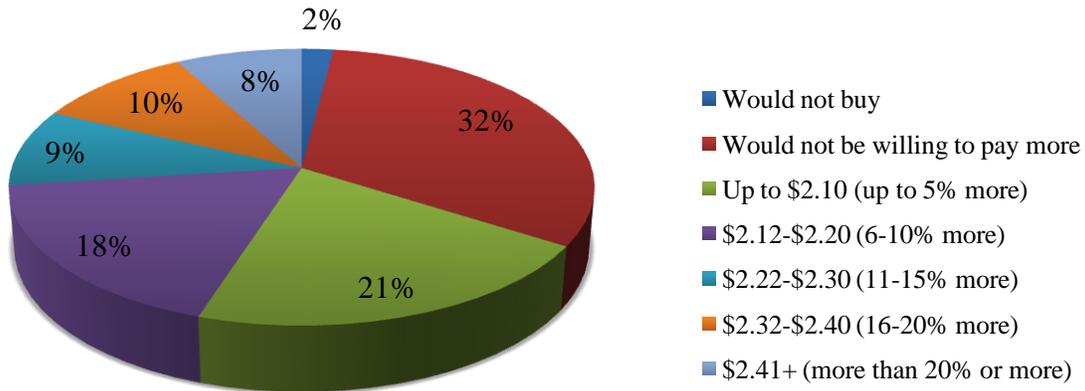
markets are usually or always more expensive and slightly more (21%) said they were never more expensive (see Figure 7). The proportion that indicated FV from farmers or tailgate markets were sometimes more expensive or about the same price were both at approximately 31%.



**Figure 7.** Perceptions of prices at farmer and tailgate markets compared to grocery stores and super markets (n = 107).

If a pint of their favorite fruit was available at a grocery store for \$2.00, 2% of participants indicated they would not buy it, 32% indicated they would not be willing to pay more, and 39% reported they would pay up to 10% more (\$2.10-2.20) at a farmers or tailgate market or farm stand (see Figure 8). More than one-fourth (27%) of those surveyed would pay 11- 20% more (\$2.22 to >\$2.41) per pint, according to survey results.

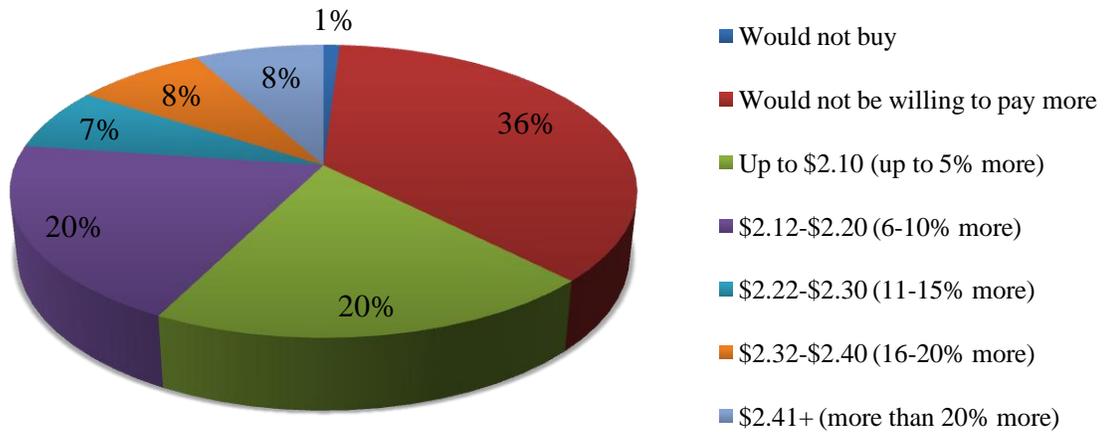
### How Much More Would You Be Willing To Pay for 1 Pint of Your Favorite Fruit at a Farmers or Tailgate Market or Farm Stand?



**Figure 8.** Percentage of participants willing to pay more for a pint of their favorite fruit at a farmers or tailgate market or farm stand (n=112).

By comparison, survey results showed that if one pound of their favorite vegetable was available at a grocery store for \$2.00, 1% of participants indicated they would not buy it, 36% indicated they would not be willing to pay more, and 40% reported they would pay up to 10% more (\$2.10-\$2.20) at a farmers or tailgate market or farm stand (see Figure 9). Twenty-three percent reported being willing to pay 11-20% more (\$2.22 to >\$2.41) for a pound of their favorite vegetable at farmers or tailgate markets/farm stands.

## How Much More Would You Be Willing To Pay for 1 Pound of Your Favorite Vegetable at a Farmers or Tailgate Market or Farm Stand?

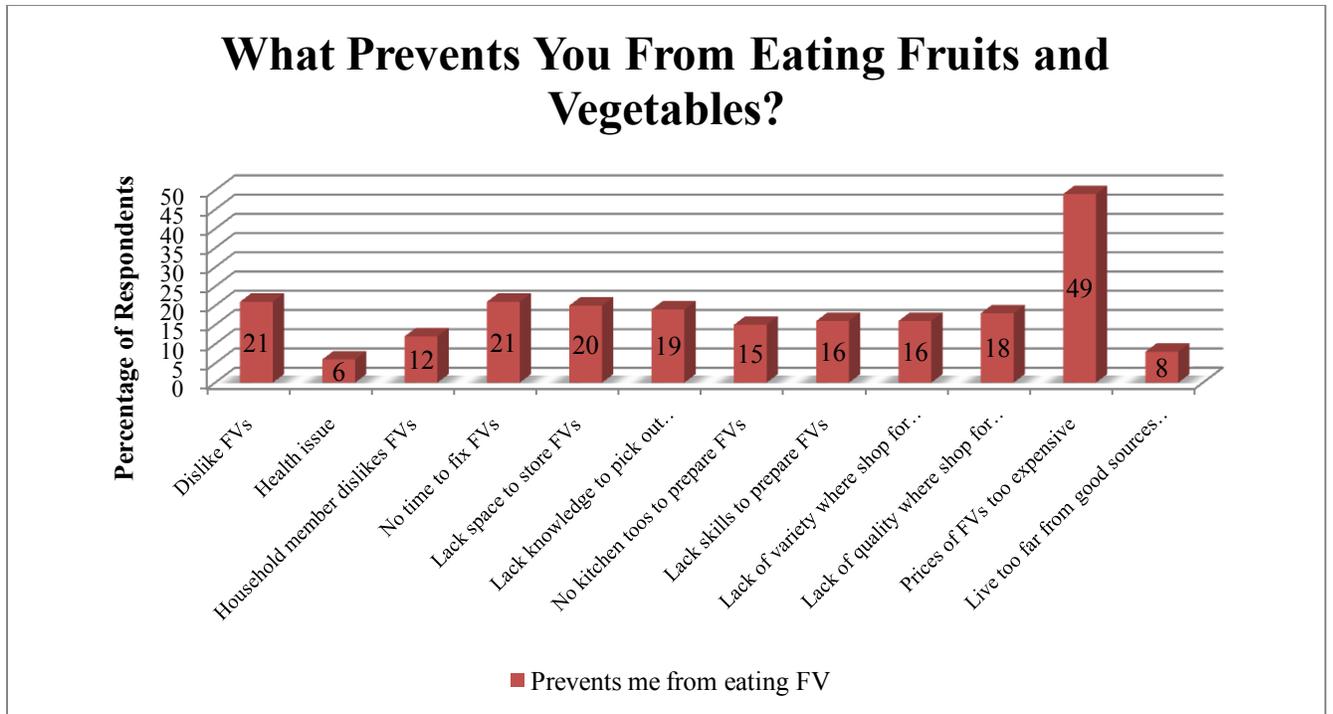


**Figure 9.** Percentage of participants willing to pay more for one pound of their favorite vegetable at a farmers or tailgate market or farm stand (n=112).

### Research Question 1: What are the barriers to eating fruits and vegetables in select western North Carolina counties?

#### Barriers

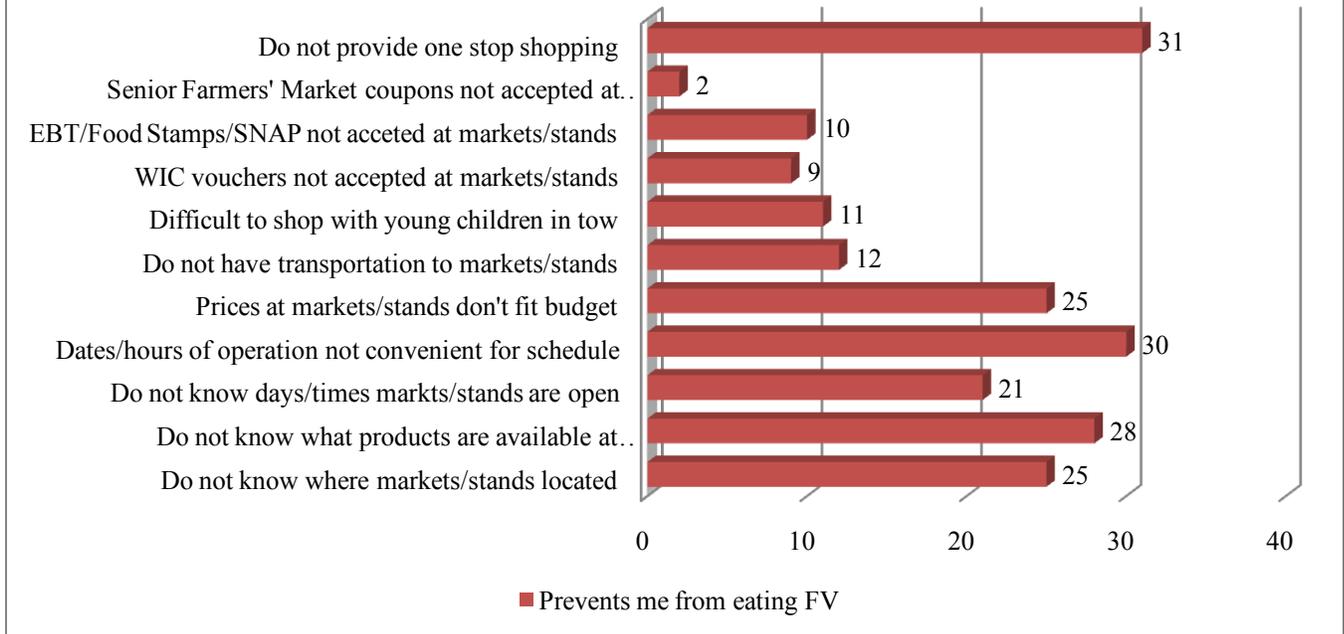
Survey results (n=113) showed that the biggest barrier to eating fruits and vegetables reported by survey respondents was expensive prices (49%) followed by a dislike of FV and a lack of time to prepare FV, both at 21%. A lack of space to store FV (20%), a lack of knowledge of how to pick out (19%) and a lack of quality of FV where they shopped (18%) were fairly even in terms of being barriers to eating FV (see Figure 10).



**Figure 10.** Percentage of participants reporting specific barriers to eating fruits and vegetables.

According to survey results (n=113), the most reported barrier with regard to farmers markets, tailgate markets and farm stands was a lack of one-stop shopping where respondents could purchase non-food items (31%) followed by the dates and hours of operation of farmers markets not being convenient to their schedule (30%) (see Figure 11). More than one-fourth (28%) of those surveyed reported not knowing what products were available at farmers and tailgate markets and stands. About one-fourth reported not knowing where markets/stands are located and one-fourth said the prices at farmers markets and stands did not fit their budget.

## Barriers Related to Farmers Markets, Tailgate Markets and Farm Stands



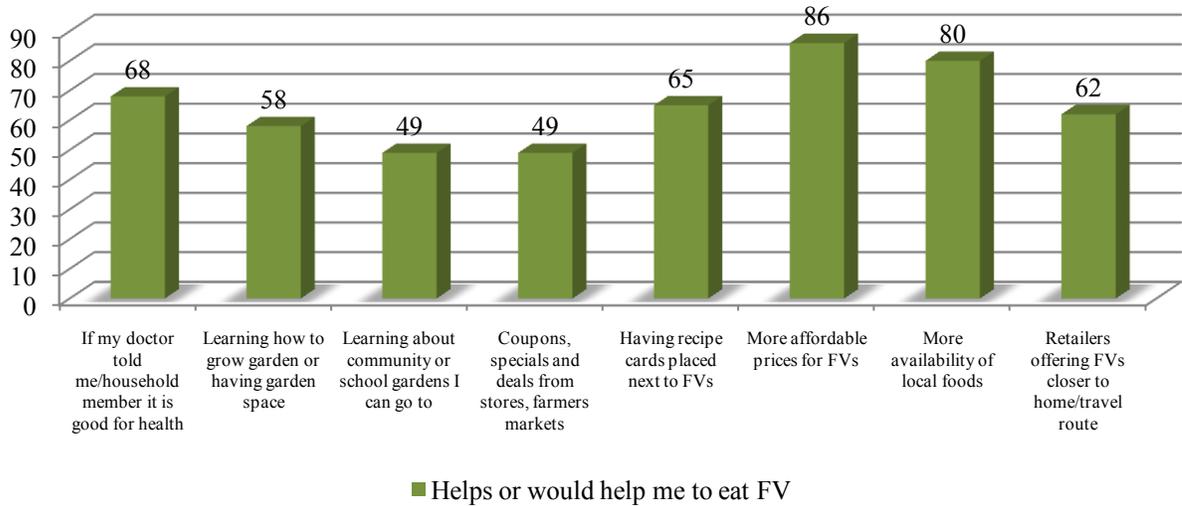
**Figure 11.** Percentage of participants reporting specific barriers to eating fruits and vegetables specific to farmers markets, tailgate markets and farm stands.

### Research Question 2: What are the facilitators to eating fruits and vegetables in select western North Carolina counties?

#### Facilitators

The biggest facilitator/promoter of eating FV according to survey respondents (n=113) was having affordable prices for FV (86%) followed by having more availability of local foods (80%), if a doctor told them or someone in their household it was good for their health (68%), and having recipe cards placed next to FV (65%) (see Figure 12). Having FV retailers closer to their home or travel route was notable at 62% and learning how to grow or have space for a garden at 58%.

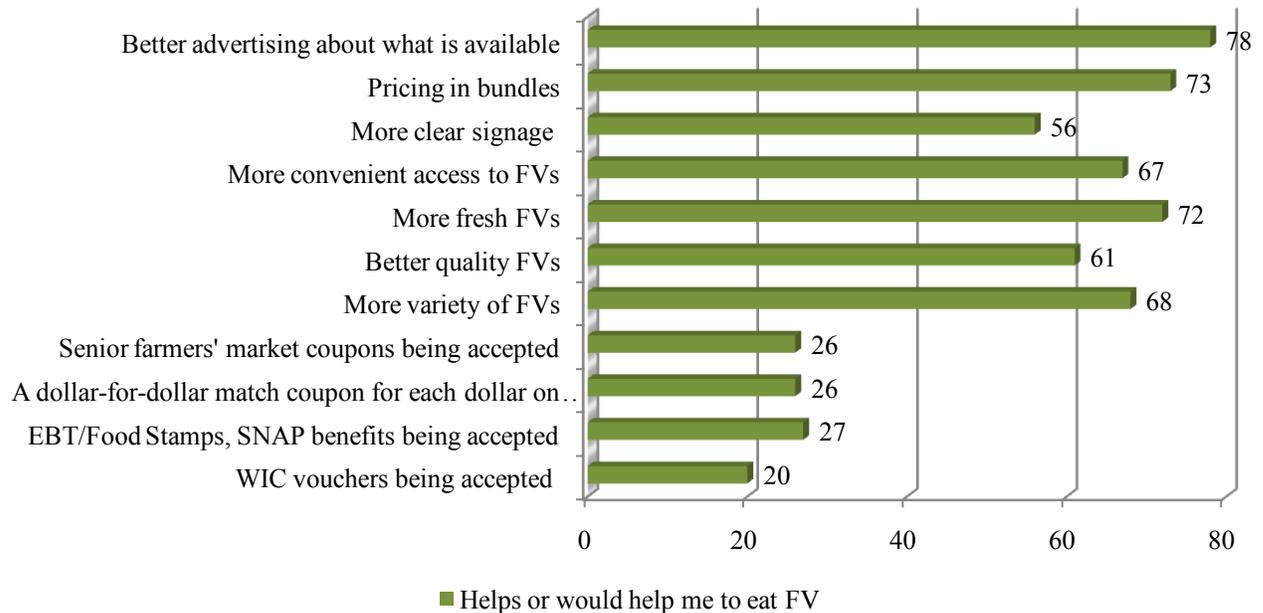
## What Helps or Would Encourage You to Eat More Fruits and Vegetables?



**Figure 12.** Facilitators/enablers to eating fruits and vegetables by percentage.

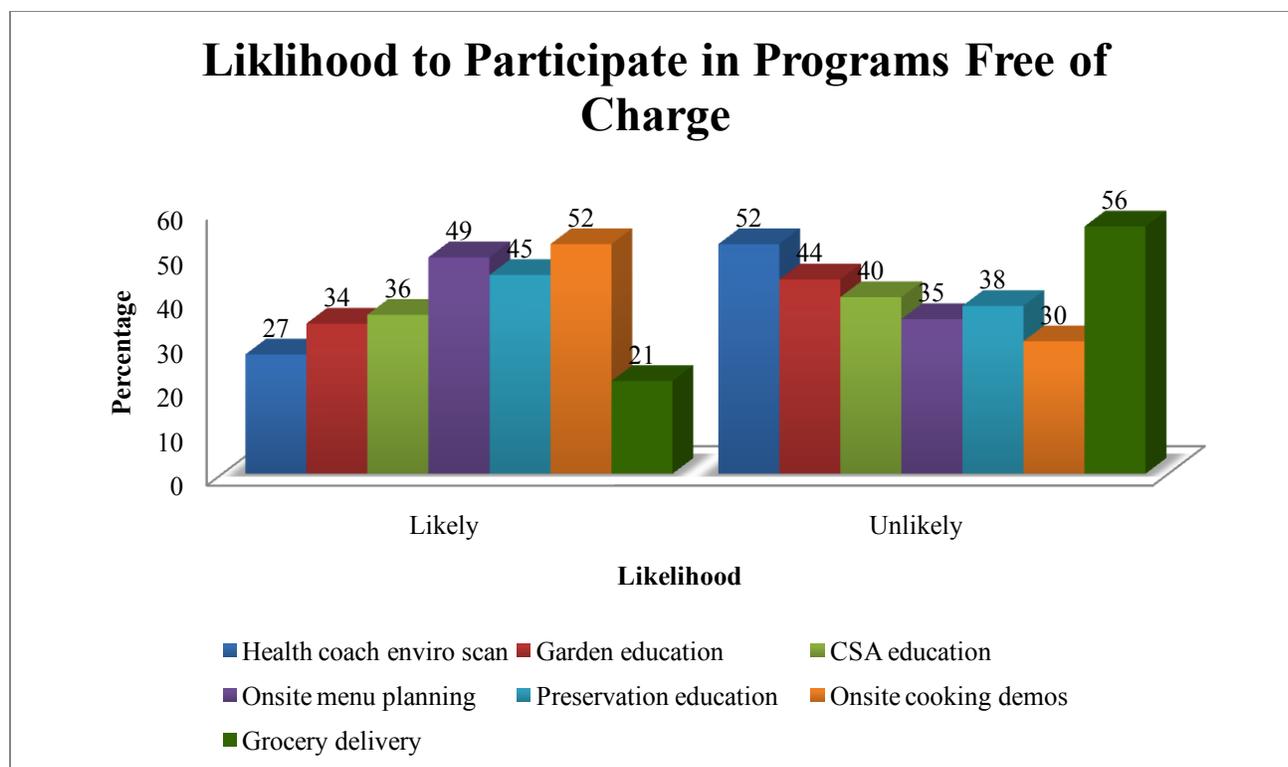
Most (78%) survey respondents (n=113) indicated that better advertising from farmers markets and stands about what is available would facilitate FV consumption (see Figure 7). Pricing in bundles was also one of the most commonly cited promoters (73%) followed by more fresh FV (72%) and more convenient access to FV (67%) (see Figure 13).

## Facilitators Related to Farmers Markets, Tailgate Markets and Farm Stands



**Figure 13.** Facilitators to eating fruits and vegetables specific to farmers markets, tailgate markets and farm stands by percentage.

Survey respondents (n=113) were asked about their likelihood of participating in programs free of charge. Most of the program prompts were taken from the research literature. About half of those surveyed indicated that they would be likely to participate in onsite cooking demonstrations, 49% indicated they would likely participate in onsite menu planning, 45% indicated a likelihood of participating in food preservation education and 36% a likelihood of participating in community supported agriculture (CSA) education. Results are found in Figure 14.



**Figure 14.** Survey participant reports of their likelihood/unlikelihood of participating in programs.

### Qualitative Findings

One focus group was conducted in each the following counties: Graham, Haywood, Macon, Swain and Transylvania (n = 23).

Interviews (n=107) were conducted at farmers and tailgate markets in Cherokee, Clay, Haywood, Jackson, Swain Counties (n=68). Interviews were conducted at the Macon County Fair (n=8) and at three food programs including Community Table in Jackson County (n=12), Welcome Table in Cherokee County (n=9) and CareNet in Macon County (n=10).

### Focus Group Results

Focus groups were asked a series of questions. Focus group sessions lasted approximately 1.5-2 hours. Find questions asked and themes for each question below. Note that the questions are explicit and often the answers were very specific and short. The most common answers and themes were derived from qualitative comments.

In response to the question, “**What makes it hard for you to eat fruits and vegetables?**” the most commonly cited answers from focus groups included **cost** and **time**.

A Haywood county participant stated, “cost and the time factor, too. When we are busy going in and out all day long that’s what usually gets left out. We don’t have time to go out to get it like

from the garden or something and wash it and cook it. And the canned stuff's usually not what you want when you are running out the door."

One participant in Transylvania stated, "Prep time, it's rush, rush with the school, and the kids and work. Not as easy to grab a salad."

A Swain county participant stated "Usually the prices are so high you can hardly afford them anymore."

A Haywood County participant noted, "I'd say cost. Although I still buy them anyway."

The next most common answer was that **it was not hard**. Participants from Swain County noted this in their responses:

"Well it's not hard for me."

Other focus group members responded

"It's not for me either."

"No, me either."

In Macon County, a respondent stated, "I haven't had any problems. I actually added a garden at home, so no problems."

For the question, "**What keeps you from buying more fruits and vegetables,**" **cost** was cited as the most common barrier. The desire for **freshness and worry about perishability** was also cited.

For example, a Haywood County participant stated, "Cost and quality sometimes. Especially when you know how much you have to pay for something and there are certain stores that don't seem to turn their fruits and vegetables over quick enough. You get home and the top of the strawberries look good, but the bottom is ruined."

One Graham County resident stated, "It's the cost. The cost is astronomical."...It's like peaches this year. I got a bag, a little peck, I guess you call it a peck, the bag, I got a bag of those for \$6."

A Macon County focus group member noted, "Freshness, like in the grocery store, sometimes it looks terrible, like it's withered."

Another Macon County resident reported, "In the summer, the produce, like the grocery stores, don't keep as fresh produce. I don't know if it is because they know we can get it at a farmers market and fruit stands. I go to the produce stands during the seasons.

One Transylvania County participant reported, "Well, I find I don't like the quality. I go to the closest grocery store, and it doesn't taste good. Even if it's in season, the tomatoes aren't as good. You know, it's like the blueberries went bad really quick even though I just bought them two days

ago. To me there is a big quality issues if you go to a grocery store and who has time to go to a farmers market Saturday morning 'cause you work every day of the week, and on Saturday you've go other things to do, so again to me it really comes down to time. I would rather have fresh, organic, but the quality is not always there when it's convenient."

In response to, "**What keeps you from purchasing fresh fruits and vegetables?**" **cost** was again cited as the most common barrier.

Graham "The same thing, it's the cost."

Swain "If you got 50 cents you can buy a candy bar...there's hardly any fruits you can buy other than a banana you can get for 50 cents. Usually apples pears stuff like that are going to cost you at least a buck."

**Limitations** due to work or being committed to other things also appeared to be a barrier. For example, a Macon County participant reported, "My job does. I don't have a job that is always conducive of a healthy lifestyle because of the hours and the time and when you buy fresh a lot of times you intend to eat them through the week but you got caught up in programs and you worked too late and when I said convenience earlier you have to get up earlier and prepare to bring in and then it may be in my office in the refrigerator but I am stuck in a meeting at lunch and I don't get to eat it. So the worry about the waste."

A Graham County participant stated, "We're limited because we're over here [at dialysis clinic] three days a week, that and Charles picks me up at 6:30 in the morning and I get back home anywhere from 3:30 to 4:30. And a lot of places, like the tailgate market and stuff, the stuff we want to buy is gone or they've already closed up."

For the question, "**Think about when you are at home. Is there anything that prevents you from eating fruits and vegetables?**" **preference for other foods** was noted. For example, a Haywood County participant reported, "Sometimes it is just my preference. You have a certain taste in your mouth, and a lot of times mine will lean towards something sweet. As I have gotten older I have gotten better. I know this is good for me so I make an effort to eat it. But just a preference, I would much rather have the Hershey bar than the carrot."

**Time** was cited as preventing participants from eating fruits and vegetables at home. A Haywood County respondent said, "time." A second participant responded, "time." One Transylvania County focus group member simply replied, "chaos."

At Swain County, three of the respondents indicated that there was **nothing** that prevented them from eating fruits and vegetables at home.

In response to, "**Think about when you eat meals away from home. Is there anything that prevents you from eating fruits and vegetables?**" **a lack of options** was the most the most commonly cited barrier, including not liking the way they are prepared in restaurants, a lack of options at restaurants (often fried), limited good salad bars, a lack of health options at family reunions.

A Transylvania County participant said, “It’s not an option really, unless you go somewhere like Cracker Barrel or a vegetable bar or they have a vegetable plate. Restaurants might be getting a little better at it but just not good options.”

Another one responded, “I just don’t like the way other people prepare them. I am very picky about my vegetables, and I don’t tend to like how they are in a restaurant. And I tend to go for meat choices in restaurant and not much vegetables.”

Another one said, “In our area there’s just not really a good salad bar. Ingles is the best salad bar if you want to go out and make a good salad.”

Another theme was a concern for **food safety**.

One Transylvania County participant said, “Well, I don’t trust that they are washed.”

Similarly, a Haywood County resident stated, “For me personally, I am suspect of food quality when I go [out to eat]. So I do not salad out because I don’t know how it is cleaned. I have gotten sick once on celery, so there is not a salad in the world that look so good that I am going to take a chance. When I am at home, I know where it came from, I know who is cleaning it, it’s out of the garden. I have had kids that have worked in the food industry. I am not going to put my health in the hands of a 17 or 18 year old.”

Convenience, cost and time were other factors cited.

A Haywood County participant reported “Oh definitely cost. It is much easier to go fast food.”

Another one noted, “We don’t go out to eat very often. If we are out with the kids it is going to be Little Caesar’s Pizza or dollar menu going through the drive through. And you can’t eat a salad if you are in a hurry and driving.

For the question, “**We have talked about things that keep you from purchasing fruits and vegetables. So, what are some solutions or answers to deal with what prevents you from eating fruits and vegetables?**” responses were as follows:

**Planning ahead** and preparing food ahead of time was a common theme. For example, a Transylvania County respondent stated, “Maybe if I planned a little bit better so that I am not running by the store on my way home from work before I grab the kids. I used to plan out my menu and go every Saturday and hit five different stores. When everything was set we ate a lot better variety, but now I run by the store on the way home and whatever I grab we make it work when I get home.”

A Macon County participant said, “Planning. Knowing on Saturday, plan out your meals of what you need and what will last. Better planning on our parts. Just never eat out.”

**Making it convenient** was another theme. Haywood County participants had several comments related to convenience:

“If we had a chef and they cooked for us and gave it to us that would be great.”

A Haywood County participant said, “I would say just having it out. Convenience that would be number one. If it is there for your choice then maybe you would pick it up number one. ...”

Another one respondent, “have it cut up, like what she does. It is in the fridge and it is there.”

With regard to “**What forms of payment do you use to purchase fruits and vegetables and why?**” it largely depended on the retail location. For example, at farmers markets, it appeared more common to use **cash**, while at grocery stores, it appeared more common to use **debit cards**.

When asked, “**What is important to you when you buy fruits and vegetables?**” the most common reply was **price**, followed by a fairly even number of mentions of **characteristics including locally grown, organic, quality, and freshness**. For example, a Transylvania participant said, “Well I would like to look at locally grown and organic first, but I almost have to look at price first. Then if the prices are somewhat comparable I can go with the locally grown. But if there is a big difference, I have to go with the price.”

A Macon county participant stated, “I buy mine from a particular person because I feel like I am helping that family who’s selling it. So, putting it back into our community. But price is still important.

Another Macon county participant answered, “Price, freshness, quality.”

For the question, “**What makes it easy for you to eat more fruits and vegetables?**” **gardens** were common theme across focus groups for this question. **Networks, taste and convenience** were other commons themes. A Graham County resident responded, “A garden...oh that makes it real easy.”

An example of a network quote came from Macon County, “Mr. Mitchell [from JW Mitchell farms] sends an email every week saying what is ready; what is good to go [so] I know if I need to stop or not that week.”

Also related to **networks**, was a comment from a Transylvania member, “I don’t know if this would fit in but, Pinterest has been really good for me. I have been able to find really good recipes on there that use fresh foods and it motivates me more to be like, ‘I wanna try that.’”

Regarding **taste**, a Haywood focus group member responded, “I enjoy fruits and vegetables, so it is not like I have to make myself. Another member responded, “Yeah, I do too. I really love them.”

In terms of responses related to convenience, one Swain county focus group respondent said, “somebody bring it and set it on your porch then prepared it for you; picked it for you.”

With regard to the question, “**What kinds of things might help you buy more fruits and vegetables?**” focus group members cited that **having more money** would help them buy more fruits and vegetables.

A Macon County respondent said, “A raise. A better job.”

Another Macon County person said, “Money is the biggest.”

A Haywood County respondent stated, “I would say the same thing, cost, money. I would buy a lot more fruits and vegetables. If I had the money we would go completely organic. I need more money for the quantity of people we have....”

**Lower prices or specials** were also cited as a facilitator to encourage the purchase of more fruits and vegetables.

A Macon County participant noted, “coupons.”

A Transylvania County respondent said, “Lower prices will always help. If they lower their prices. Two for one deals. When blueberries are two for \$5 I am going to get more blueberries.”

A Macon county focus group participant stated, “Mr. Mitchell just tells me what is available and Mr. Mitchell is JW Mitchell farms and he sends this to a lot of people. He does it for other people you just ask. To me that would be the ideal thing for the farmers market because if I know a certain person is going to be there or if they have the gladiolas that I love there then I would make more of an effort to go.”

Answers to, “**What encourages you or would encourage you to purchase fresh (not canned, frozen, preserved or juiced) fruits and vegetables?**” were varied and no real common themes emerged. The following is a list of several facilitators cited:

### **Local**

A Macon County participant said, “It's nice to know your farmer, that you can ask him what all he puts on his....I always ask where it is from.”

A Macon County respondent reported, “I do try to buy local as much as I can because it is putting it back in to us.

### **In season**

A Swain County resident stated, “I'll buy it if it's in season.” Another participant agreed.

### **Combination of Factors**

A Transylvania County person noted, “Price, access and quality.”

Macon County participants mentioned, “The taste,” and “you can't beat fresh” and “good variety.”

When asked, “**Think about when you are at home. Is there anything that helps you eat fruits and vegetables?**” a common answer to this question was **having fruits and vegetables readily available**. One Transylvania county respondent reported, “Well, that is all I keep. I don’t keep much snack food or bags of chips. I can’t afford that either. We just don’t have that in the house, so we do tend to grab frozen fruit or something like that to snack on a lot more. So as long as I make sure it’s there, the kids will go in and grab carrots or some hummus or something that is more healthy if I have it there.”

Another person noted, “We will have a cantaloupe in the refrigerator and not cut for days and as soon as I cut it, it disappears. But, just getting started is hard.”

A Haywood county participant reported “Put them on the table. Cut them up.”

Another answer was, **remembering that you have fruits and vegetables**. A Haywood county respondents noted, “Remembering you have it.”

Another one replied, “Just to have them, remembering you have them stuck in the corner.”

Another facilitator was **having a garden**. One Graham county respondent said, “Again, this time of year, whatever is coming out of your garden.”

Another one replied, “The vegetables are easy access for people who have gardens.”

The answers to, “**Think about when you eat meals away from home. Is there anything that helps you eat fruits and vegetables?**” follow:

A few focus group participants reported that they did not go out to eat enough for it to make a difference; or just said “no” to this question.

Among the most common facilitators was **packing your own food**. A Transylvania focus group participant noted, “...When I pack my lunch I tend to pack it pretty health and balanced. So, if I would just pack my lunch...”

Another facilitator was when the **vegetable or salad is included with a meal or salad bar availability**. A Graham county participant reported, “A salad bar. If they offer steamed vegetables and things like that – a lot of vegetables on the menu. It helps.”

**Menu specifications** were cited as a facilitator for eating more fruits and vegetables. For example, a Macon county participant stated, “Being on the menu knowing that they have it but also how it is cooked. Is it cooked in grease because what’s the point if it is floating in grease?”

Another participant continued, “Sometimes the menu says fresh seasonal fruit and you are like okay, you just brought me a grapefruit. Knowing what the actual fruit is going to be! I want to know what it is. I probably wouldn’t care as much if it is canned not in season. But on the menu they put what it actually is. So you get what you are thinking of or expecting.”

Lastly, **having fruits and vegetables available** was cited as a facilitator. For example, a Macon county focus group participant stated, “I like some of the hotels that in the mornings when they have their breakfast sometimes they have really nice fresh fruit and that is always a nice way to start your day.”

Another participant noted, “I know when we go to Myrtle Beach we always stop at this one gas station because we know they are going to have fresh bananas and apples right by the register.”

See Table 7 for a summary table of barriers and facilitators reported by focus group participants above.

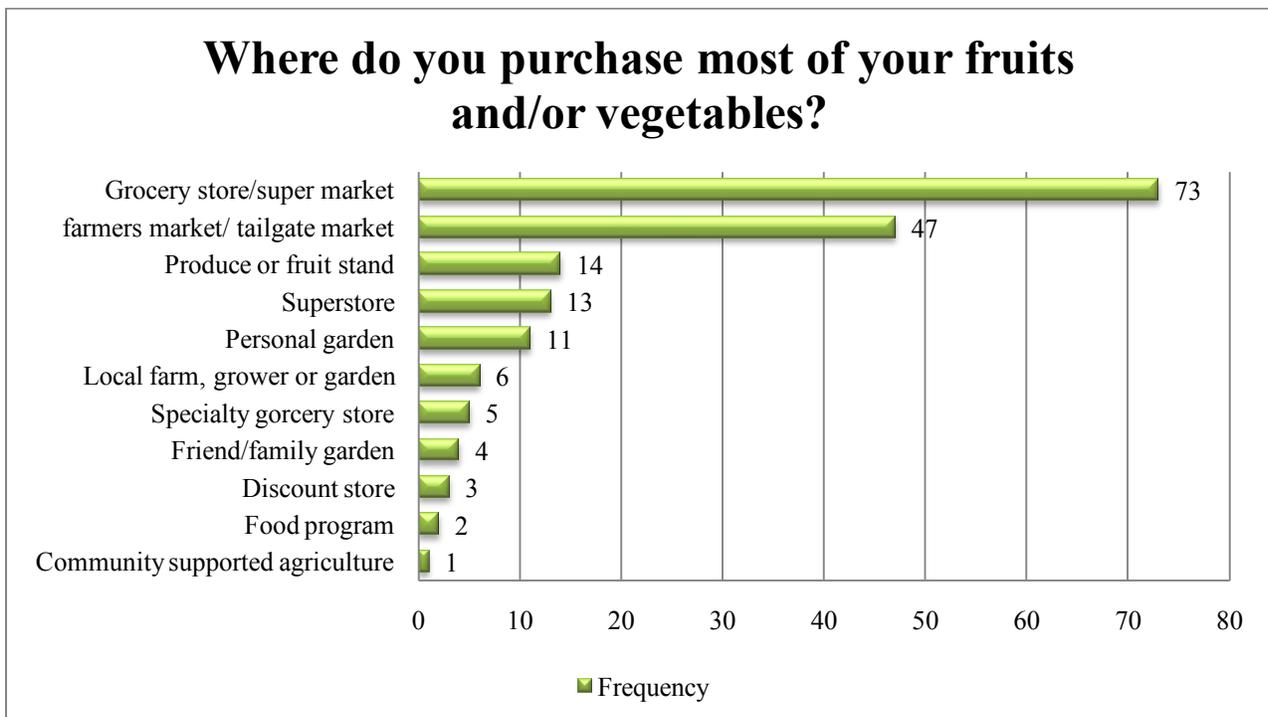
**Table 7.** Focus group questions, category and related themes of questions related to barriers, solutions and facilitators.

Questions	Themes
	<u>Barriers</u>
What makes it hard for you to eat fruits and vegetables?	Cost Time It is not hard
What keeps you from buying more fruits and vegetables?	Cost Worry about freshness and perishability
What keeps you from purchasing fresh fruits and vegetables?	Cost Limitations (work and health restraints)
Think about when you are at home. Is there anything that prevents you from eating fruits and vegetables?	Time Preference for other foods Nothing
Think about when you eat meals away from home. Is there anything that prevents you from eating fruits and vegetables?	Lack of options Food safety concerns Cost and convenience/time
	<u>Solutions</u>
We have talked about things that keep you from purchasing fruits and vegetables. So, what are some solutions or answers to deal with what prevents you from eating fruits and vegetables?	Planning ahead Making it convenient
	<u>Facilitators</u>
What makes it easy for you to eat more fruits and vegetables?	Gardens Networks Taste Convenience
What kinds of things might help you buy more fruits and vegetables?	Having more money Lower prices or specials
What encourages you or would encourage you to purchase fresh fruits and vegetables?	Local In season Price Access Quality Fresh Variety
Think about when are at home. Is there anything that helps you eat fruits and vegetables?	Having them readily available Remembering that you have them Garden
Think about when you eat meals away from home. Is there anything that helps you eat fruits and vegetables?	Packing own food Vegetable included with meal or having salad bar Menu specifying more information about fruits and vegetables Retailers having fruits and vegetables available

## Interview Results

Interviews were conducted at three food programs in Jackson, Cherokee, and Macon Counties, the Macon County Fair, and at farmers and tailgate markets in Cherokee, Clay, Haywood, Jackson and Swain Counties. Six questions pertaining to FV were asked. Sometimes participants replied with more than one answer. All answers, even when multiple answers were given, were recorded to capture the essence of each answer, accounting for the number of answers exceeding the number of those interviewed.

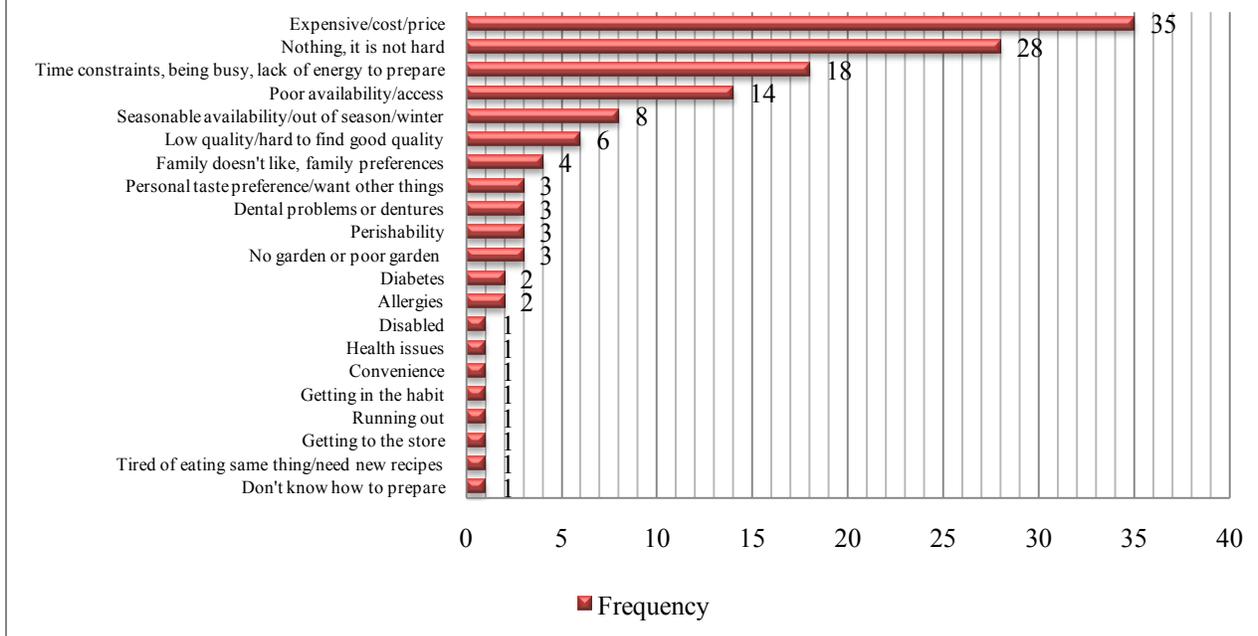
Interviewees reported that they purchase most of their fruits and vegetables from grocery stores or supermarkets more than any other location (see Figure 15). The next most commonly reported location of purchasing fruits and/or vegetables was farmers markets/tailgate markets, followed by produce or fruit stand followed very closely by superstores (such as Wal-Mart, etc.).



**Figure 15.** Interviewee reports of where they purchase most of their fruits and/or vegetables.

When asked, “What makes it hard for you to eat fruits and vegetables?” interviewees cited the expense/price most often. The next most common answer was that it was not hard to eat fruits and vegetables, followed by time constraints/being busy or lack of energy required for preparing them (see Figure 16).

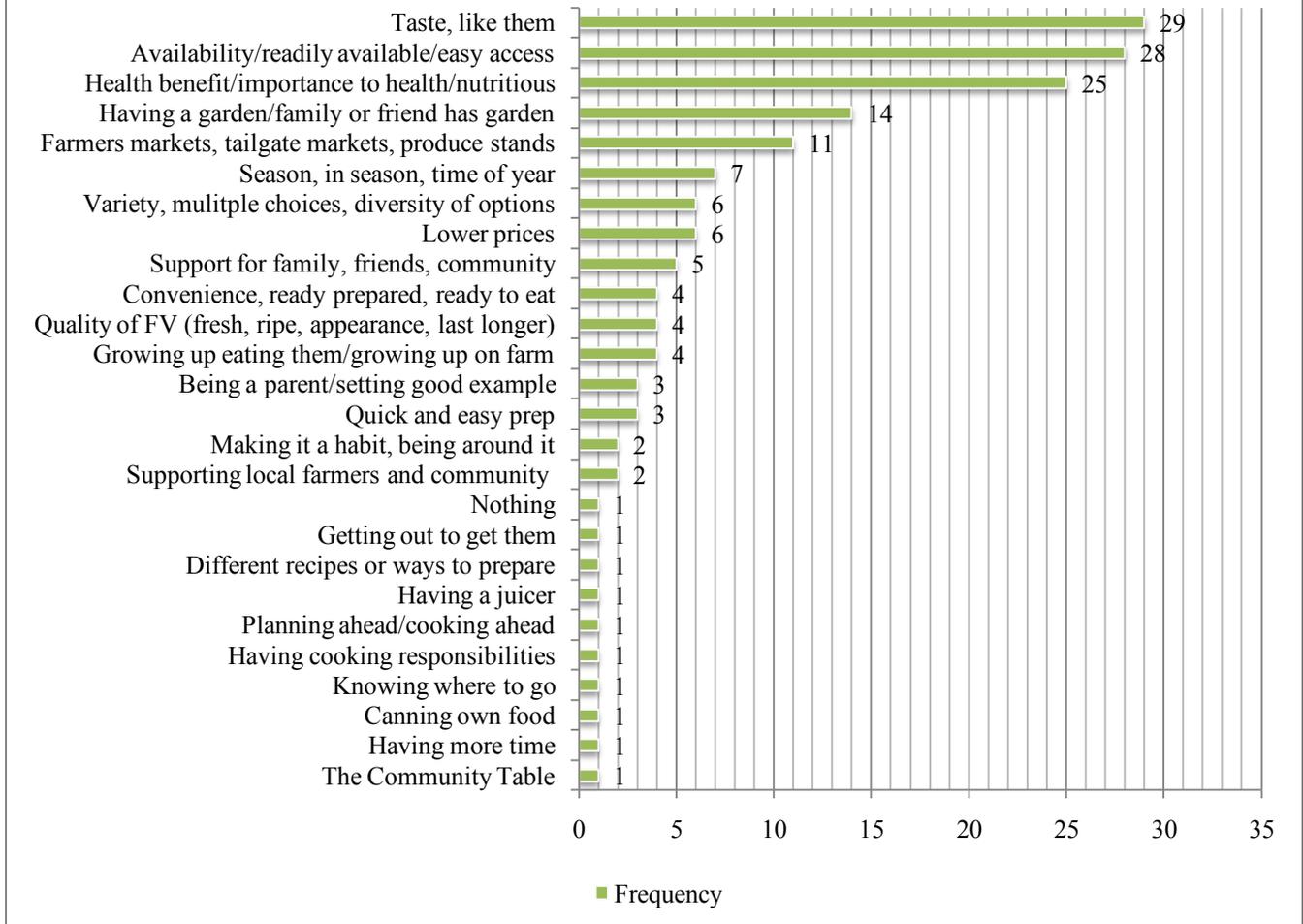
## What makes it hard for you to eat fruits and vegetables?



**Figure 16.** Interview reports of what makes it hard to eat fruits and vegetables.

Participants who were interviewed were also asked, “What makes it easy for you to eat more fruits and vegetables?” The most common answer was the taste/liking them, followed closely by ready availability and easy access to them and the health benefits/nutrition/and importance for health (see Figure 17).

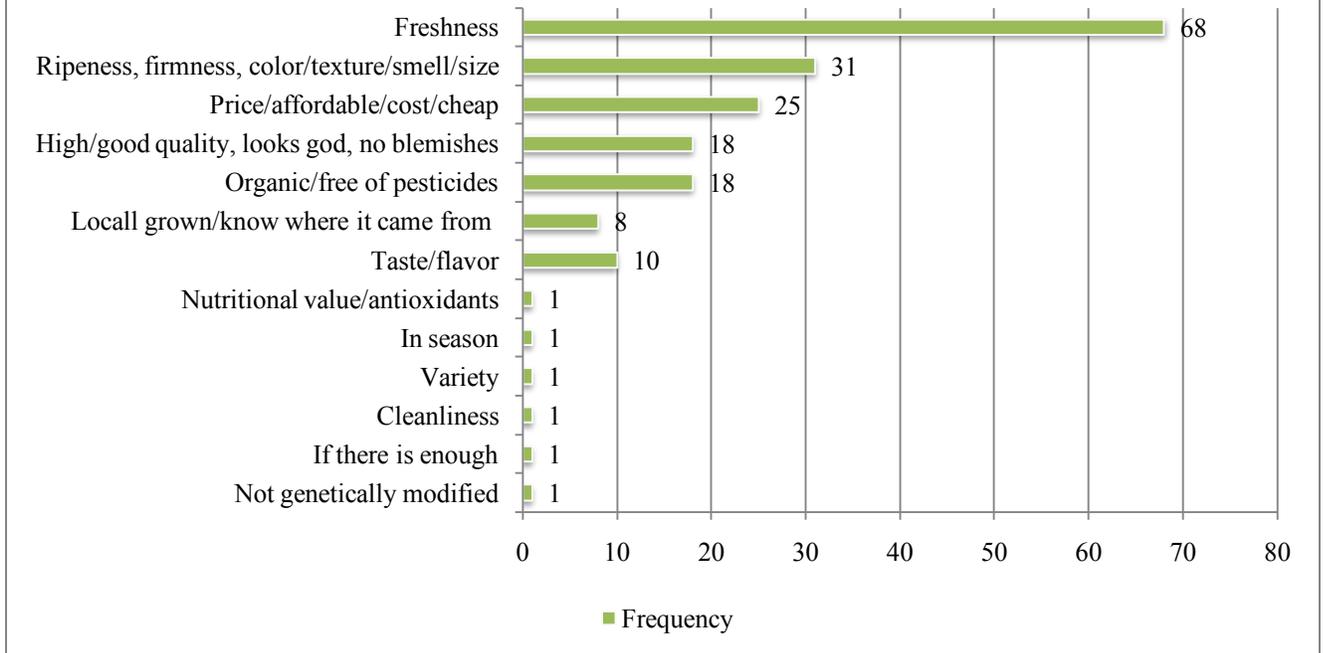
## What makes it easy for you to eat more fruits and vegetables?



**Figure 17.** Interview participant reports of what makes it easy to eat more fruits and vegetables.

The qualities sought after when shopping for fruits and vegetables most often reported by interviewees were freshness, ripeness/firmness/color/texture/smell and size, then price/cost and affordability (see Figure 18).

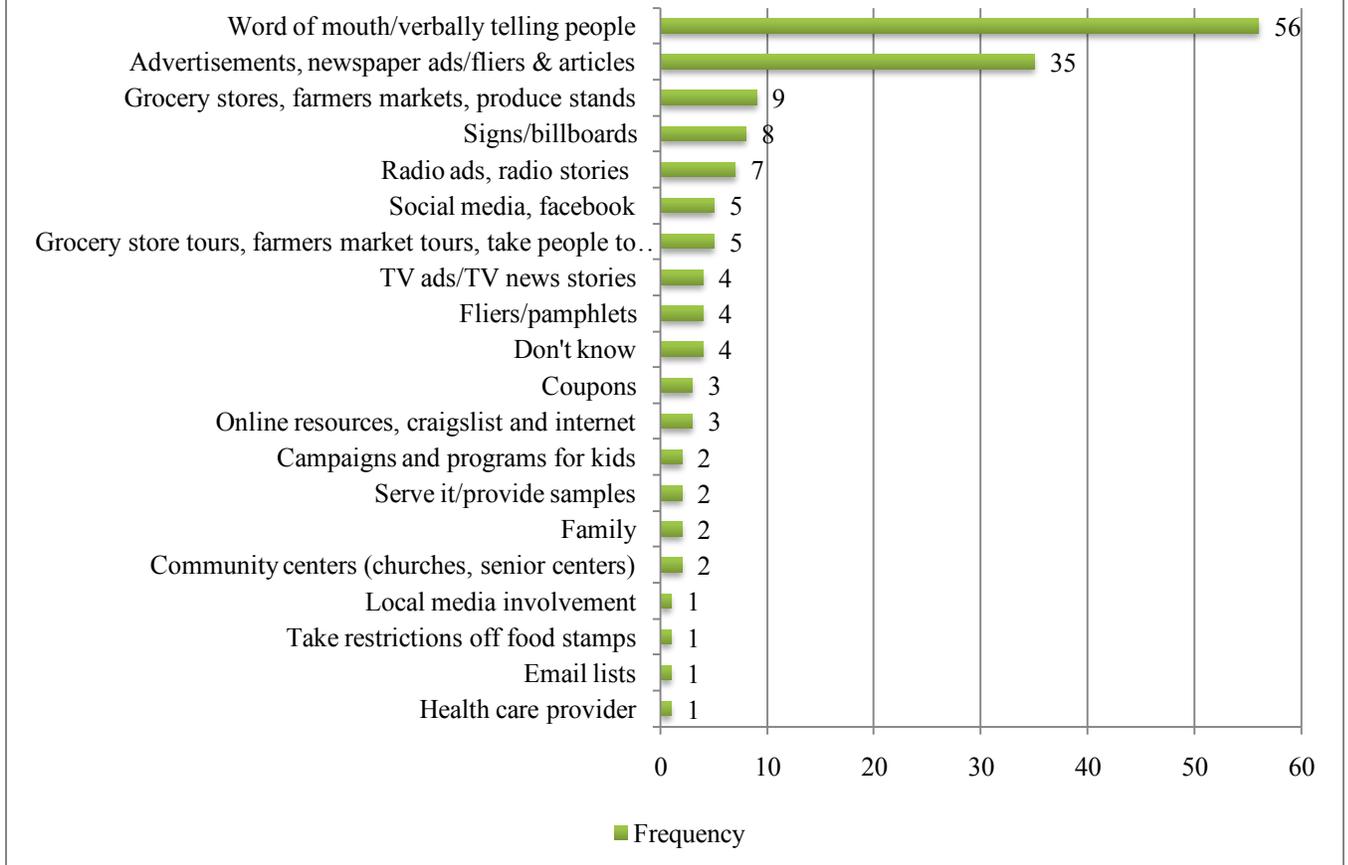
## When shopping for FV, what qualities do you look for?



**Figure 18.** Qualities sought when shopping for fruits and vegetables as reported by interviewees.

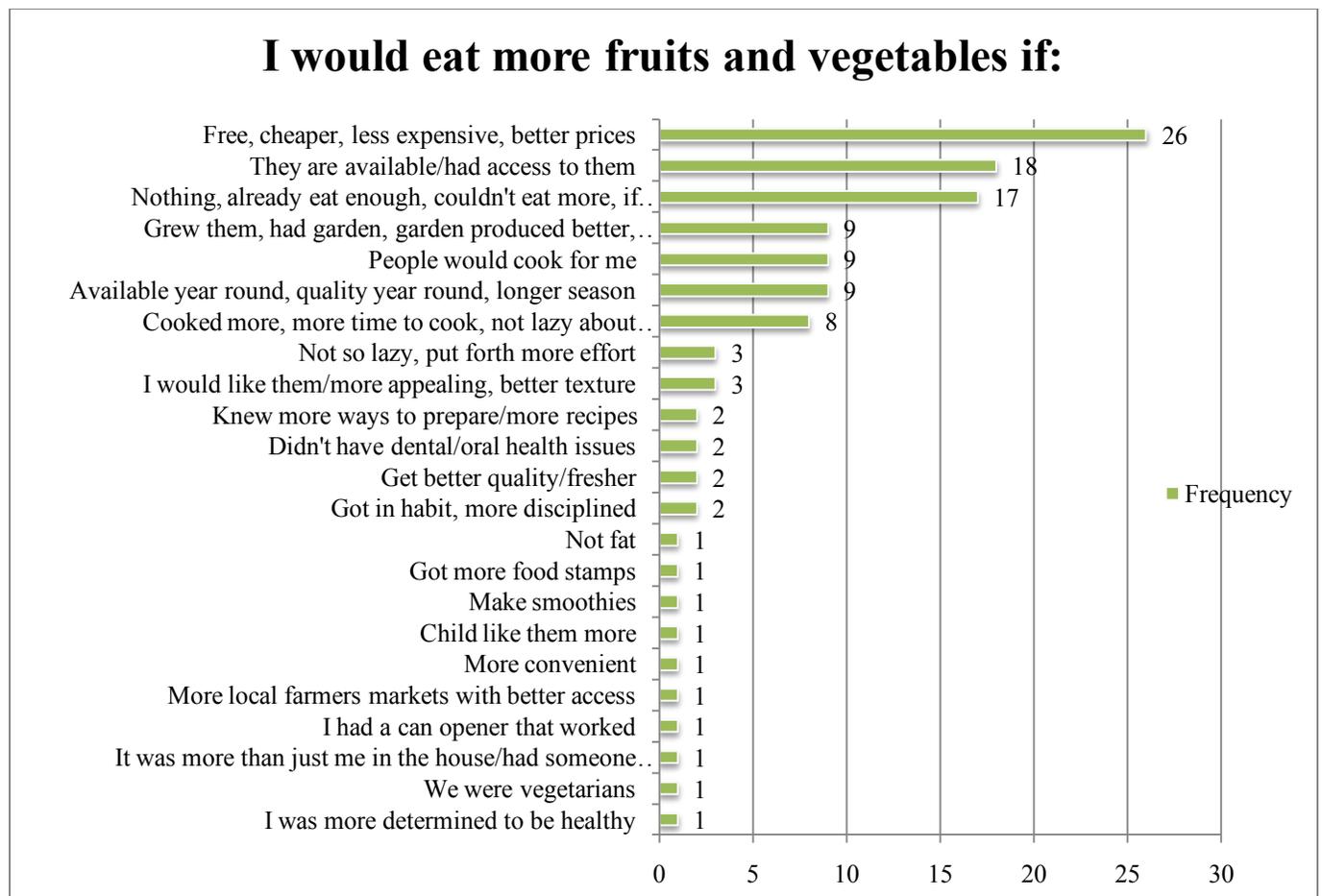
When asked, “What is the best way to tell people about where to get fruits and vegetables,” participants who were interviewed noted word-of-mouth/verbally telling people as the top way to tell people where to get FV. The next most common way was advertisements/ads, fliers and articles in newspapers. The third most common were advertising in grocery stores, farmers markets and produce stands (see Figure 19).

## What is the best way to tell people about where to get FV?



**Figure 19.** The best way to tell people about where to get fruits and vegetables according to REAP interviewees.

When asked to complete the sentence, “I would eat more fruits and vegetables if...,” the top response was if FV were free/cheaper/less expensive, followed by if they were available/had them/had access to them and then nothing/already eat enough/if my stomach could hold more (see Figure 20).



**Figure 20.** Interview participant reports of what would make them eat more fruits and vegetables.

## Discussion and Recommendations

This study provides insight into the barriers and facilitators of FV consumption in WNC. The results of part 1 of REAP indicate that participants (predominantly college-educated Caucasian women with a majority being age 51 or older), generally feel confident in where to find FV, feel that eating FV is important, but almost half either do not know if they are eating enough or reported not eating enough FV. Campbell, Symons, Demark-Wahnefried, Polhamus, Bernhardt, McClelland, & Washington (1998) found that their study participants understood the importance of FV in the diet and the role in preventing serious health problems in their study of North Carolina adult church members. Fresh FV consumption was the predominant form of FV reportedly consumed, as expected when collecting data in the summer season and with farmers’ market-goers who made up much of the population surveyed. Freshness has been shown to be an important quality of FV in previous research (Webber & Dollahite, 2008).

FV intake reported by participants in this study was a median of 1.0 times per day for fruit and 1.5 for vegetables. These findings are consistent with the median daily times adults in the United States and North Carolina report eating FV at 1.1 times for fruit and 1.6 times per day for vegetables, and

at 1.0 times per day for fruit and 1.6 times per day for vegetables, respectively (State Indicator Report, 2013).

Some respondents indicated that nothing prevented them from eating or made it difficult to eat FV. Yet many barriers to FV were cited by participants. Cost was by far the most cited barrier to eating FV in surveys, focus groups and interviews, echoing findings from other research that assessed barriers to FV (Leone et al. 2012; Lucan, Barg, & Long, 2010; Yeh, Ickes, Lowenstein, Shuval, Ammerman, Farris & Katz, 2008; John & Ziebland, 2004). Cheaper FV was one of the top facilitators to eating FV. These findings are similar to Leone et al. (2012) who found that lowering the cost might increase consumption. A lack of time was also cited as one of the most common barrier to FV consumption, as shown in previous research (Yeh, Ickes, Lowenstein, Shuval, Ammerman, Farris & Katz, 2008; Campbell, Symons, Demark-Wahnefried, Polhamus, Bernhardt, McClelland, & Washington, 1998).

Less common barriers to FV among those surveyed was a dislike for FV, a lack of space to store FV, a lack of knowledge of how to pick out, and a lack of quality of FV where they shopped. Having samples available for tasting was mentioned in one focus group as a way to encourage FV consumption. Providing tasty samples and at grocery stores and farmers and tailgate markets may address the barrier of disliking FV. Simple and easy-to-read signage about how to select FV may address the knowledge deficit of how to pick out FV when shopping.

A lack of one-stop shopping at farmers markets was cited as the most common barrier for those surveyed, followed closely by inconvenient operation hours of markets and not knowing what is available at farmers and tailgate markets and farm stands. Almost one-fourth of participants reported that FV from farmers and tailgate markets were never more expensive than grocery stores. This result may be due to many of the participants being farmers market shoppers who are most likely supporters of using farmers markets.

As a good proportion of participants indicated that they did not know where farmers markets were, what was available at farmers markets, that operation hours were not always convenient, it may be beneficial for farmers markets to market their location, the products available, and consider extended hours one day a week to accommodate those who work and may not be able to shop on Saturdays. Leone et al. found that barriers to shopping at farmers markets included not knowing about area farmers markets and that facilitators included having more information about the location of farmers markets (2012). Word-of-mouth, newspapers ads and articles were among the best way to notify people of where to get FV. There was a little interest in email alerts and delivery of produce to the home, therefore health and nutrition professionals should consider these findings in their development of interventions and consider connecting consumers more to community supported agriculture opportunities.

Facilitators related to farmers markets included better advertising about what is available at markets (reported by over three-fourths of participants asked), pricing in bundles, having more fresh FV and having more convenient access to FV. It is recommended that farmers and tailgate market vendors take note of these facilitators in an effort to increase patronage. A majority of participants indicated that they would pay more for a pint of their favorite fruit or a pound of their favorite vegetable at

farmers markets compared to grocery stores. Adams & Adams (2011) also found farmers market consumers willing to pay more for local food.

Having a garden or having access to a friend's garden appeared to be a facilitator in focus groups and somewhat in the interviews. The additional interest in local foods and eating in season shown in the findings indicates promise in interventions that place emphasis on these values. Kegler, Swan, Alcantara, Feldman & Glanz (2013) had similar recommendations for creating interventions that link consumers to local foods. Adams & Adams (2011) had similar findings in their study of consumer perceptions of local foods.

Solutions to barriers among focus groups were planning ahead and making it more convenient to eat FV, having gardens and lower prices of FV. Respondents who participated in interviews reported that it was easy to eat more FV because they liked the taste, that FV were readily available and accessible, because of the health and nutrition benefits, and because they had a garden or family/friends had gardens. Farmers, tailgate markets and farm stands were also cited as a facilitator. Interviewees reported that they would eat more FV if they were less expensive/had better prices, if they were available and more accessible, if they grew them or had a garden that produced better, if people would cook for them, if they were in season longer/were available year round, and if they cooked more.

Since a majority of survey respondents indicated that being told by a doctor that eating fruits and vegetables was good for their health or a household member's health, interventions in the primary care setting should be explored. FV health benefits were also commonly reported among interviewees as a facilitator to eating FV. This finding underscores the important role of health care professionals in making a conscious effort to encourage and promote the consumption of FV. Carcise-Edinboro, McClish, Kracen, Bowen, & Fries (2008) implemented an intervention that included physician-endorsed nutrition education materials and specialized dietary feedback and follow up phone call reinforcements, finding it to be effective in initiating dietary changes in FV intakes in a low-income rural population.

Related to food access, more than half (61%) of participants lived less than four miles from a grocery store and 50% lived less than four miles from a farmers market. These percentages were higher than expected given the rural area of the study. A large majority of participants obtained most of their food from grocery stores most of the time. Forty-eight percent of respondents obtained FV from gardens and 38% obtained FV from farmers markets in warm months of the year.

Taste was a facilitator noted in the interviews. Taste has been shown to be the most important influence on food choices (Glanz, Basil, Maibach, Goldberg & Snyder, 1998). Quality and other characteristics such as freshness and variety were noted as facilitators to eating FV. Having FV readily available, such as pre-chopped in the refrigerator, was cited as a facilitator. Away from home, focus group respondents indicated a lack of options on menus and fear that FV had not been properly cleaned. Grocery stores and super markets may consider the addition of salad bars and restaurants may consider having a variety of vegetables on menus that specify vegetable offerings you have and how they are cooked. The conversation quickly turned to salad bars during several sessions when asked about barriers to eating FV when eating out. Yet, there are many other options

and methods of providing vegetables to customers. Restaurants should emphasize other vegetables prepared in healthy manner and perhaps consider “to-go” FV options.

Although not a theme in the focus groups, one participant mentioned that he wished barter was used at farmers markets. For example, a person may trade a service for a box of produce each week. Piloting a barter system at farmers markets and possibly personal gardens is recommended. Another item of interest that was not a theme, but bears special mention is a desire for “WIC for poor people,” and interest in the Seniors Farmers’ Market Nutrition Program. These results demonstrate potential for increasing FV consumption through the use of voucher programs. Buyktuncer, Ryan, Thurston & Ellahi (2013) saw limited success with vouchers, but suggested if worth enough monetarily, and accepted by a good number of outlets, vouchers may be successful in increasing FV consumption. It is recommended that policy-makers take such feedback from consumers into consideration when writing and revising policies.

Results regarding general barriers and facilitators to eating FV suggest that consumer nutrition education about how to prepare quick, budget-friendly meals with FV is warranted and that retailers can play a role by working with nutrition and health professionals to provide recipe cards in produce sections of grocery stores, super markets and farmers and tailgate markets. The top programs of promise that consumers indicated they would likely attend included onsite cooking demonstrations, food preservation education, and onsite menu planning, suggesting that registered dietitians, health educators, health promotion professionals and Extension educators may want to incorporate or increase these modes of education into their health programming. Perhaps “Ask a registered dietitian days” at farmers markets and tailgate markets with cooking demonstrations would be a worthwhile program.

## Conclusion

The results of part 1 of REAP indicate feel confident in where to find FV, feel that eating FV is important, but face barriers in consuming recommended amounts. The most common barriers to eating FV reported in both quantitative and qualitative results were prices of FV and a lack of time to prepare them. Despite all the barriers, there were facilitators that promoted FV consumption. The most common facilitators among all participants were FV affordability and availability and to some degree, taste. Results of the top barriers specific to farmers markets, tailgate markets and farm stands were a lack of one-stop shopping, inconvenient days and times of operation and not knowing the products available at the markets/stands. Chief facilitators were better advertising about availability, and pricing in bundles.

Restaurants can address barriers by providing fresh and tasty FV on menus, providing specific information about how FV are prepared, and providing FV to-go options. Given the interest in local foods, serving dishes prepared with local FV is also recommended. Grocery stores/super markets can break down barriers by offering quality FV with directions for proper selection and easy preparation/recipes. Offering a variety of local FV and labeling them as such is warranted. Policy-makers can break down barriers by exploring voucher options and working with health care providers to encourage FV consumption.

REAP results demonstrate that consumers are interested in nutrition and health education programs. From individual choice to environmental supports, we all have a role to play in addressing barriers to facilitate improve FV consumption. Overcoming the barriers uncovered in REAP can advance the health and nutrition status of the people of WNC.

## **Limitations**

This study is not without limitations. First, REAP did not use a representative sample as this is an exploratory study that used a purposeful sample. The time of year may have influenced answers, since fruits and vegetables are so plentiful during the summer season. Despite the researcher's best effort to establish content and face validity and edit for readability, some of the questions on data collection instruments about barriers were awkward and confusing for participants, as noted by several respondents as they completed the paper surveys in person. There was also a question error in the vegetable price question (pint was used instead of pound) and the error was not noticed until after surveys had been administered. In addition, different moderators conducted focus groups and there was inconsistency in prompt use and audience probing. Different REAP team members conducted interviews therefore adhering to the directions and use of prompts likely varied. Prompts could have biased some answers for both focus groups and interview participants. Participants at farmers and tailgate markets were clearly biased with regard to the questions related to those markets, farm stands and related questions. Lastly, transcription was conducted by various REAP and MountainWise team members, and human errors are possible.

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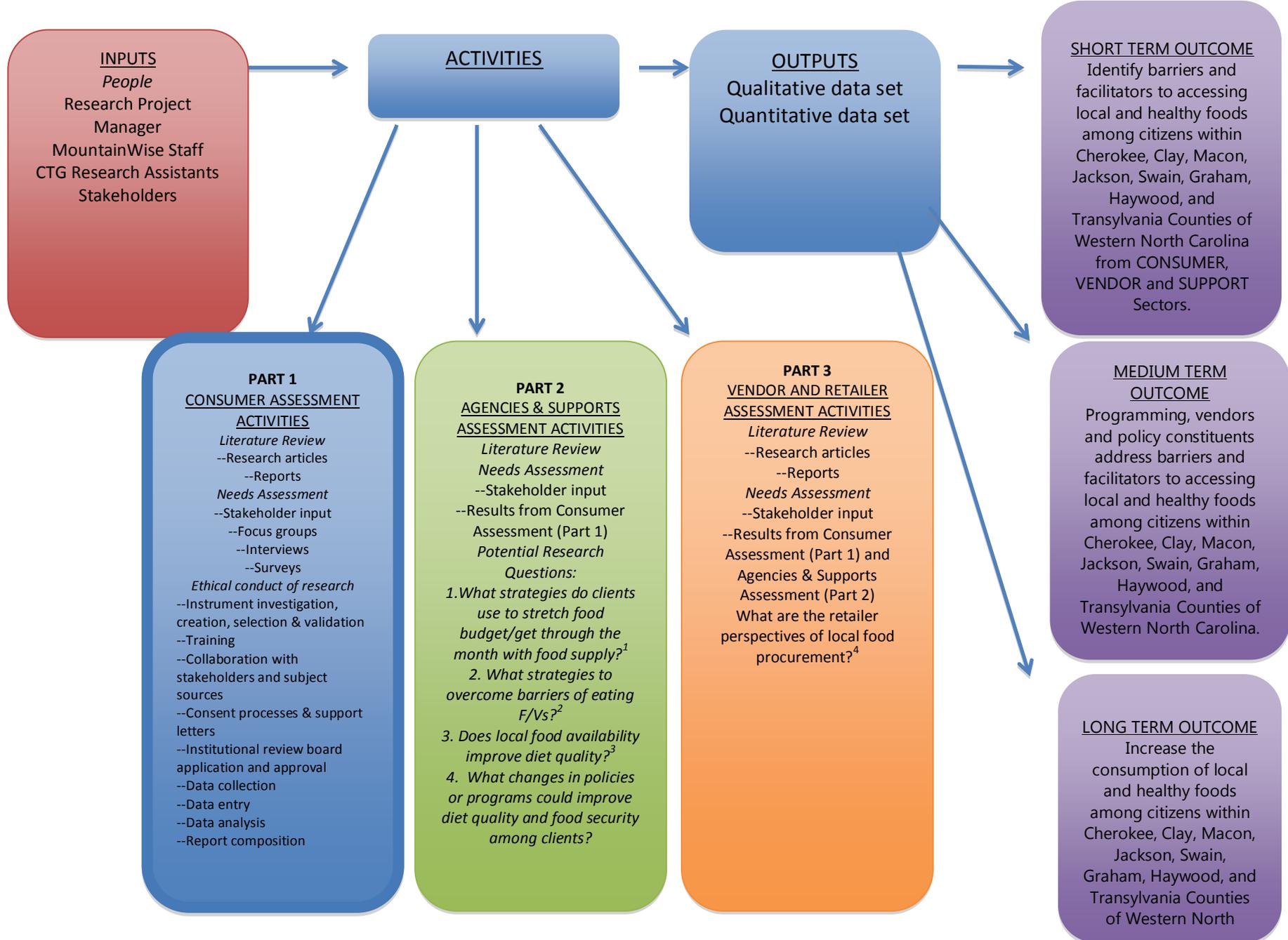
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## **Appendices**

# Rural Eating Assessment Project Logic Model

## Appendix A: REAP Logic Model



## Rural Eating Assessment Project Logic Model

- 1 Darko, J., Eggett, D.L., Richards, R. (2013). Shopping behaviors of low-income families during a 1-month period of time. *Journal of Nutrition Education and Behavior* 45(1) 20-29. <http://dx.doi.org/10.1016/j.jneb.2012.05.016>.
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- 3 Johnson, R., Aussenberg, R., Cowan, T. (2013). *The role of local food systems in U.S. farm policy (CRS Publication No. 7-5700 R42155)*. Available at: <http://www.fas.org/sgp/crs/misc/R42155.pdf>
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## **Rural Eating Assessment Project Focus Group Discussion Guide<sup>1</sup>**

Hello and welcome to our session. Thank you for taking the time to join us today. (Moderator Introduction) I will lead the discussion and (Introduce Recorder) will serve as the recorder.

I will be asking you questions today about you personally, focusing on accessing fruits and vegetables for your meals and snacks. Please feel free to share your experiences, ideas, opinions, and feelings even if they are different from others. There are no right or wrong answers. This is strictly a time for you to provide us some input and for us to listen to you. If something we are talking about brings up a question in your mind, I ask that you write it down on the provided index card and as time allows we will address it at the end of the focus group. This is not an educational program where we give you information but rather it is a time for us to gain some information from you. The information collected from you, as well as from additional focus groups, will be used to help inform those responsible for nutrition and health programs in the county. Responses (again, without any identifiable information) will be reviewed by researchers and examined for themes. The results will be written up in a final report, shared with stakeholders and possibly shared with health and nutrition professionals in presentations and publications.

Our recorder will be taking detailed notes to capture what is being said here today. We will also tape record this session to be sure we don't miss anything you have to say. Individual names will not be associated with individual comments so please speak freely and comfortably in the discussions. The Focus Group Member Profile that you completed will be used to provide us with the demographics of our focus group members. You do not have to put your name on the profile.

Since this is a group discussion you do not have to wait for me to call on you to speak. I do ask that only one person speaks at the time, not only as a courtesy to each other, but also as a courtesy to our recorder who has been charged with the task of detailed note taking. While we want you to provide us with plenty of information please be mindful that we do have a limited amount of time and a fair amount of ground to cover. If I see that the discussion has strayed off of the presented question then please do not be offended when I steer us back on track.

On the place card in front of you please indicate how you would like to be addressed in the session and position the cards so it can be seen by the recorder and moderator. Let's take a brief moment to go around the room and introduce ourselves.

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<sup>1</sup> Creson, L.A. (Person County Health Department) & Martinie, A. (Healthy Eating/Active Living Lead in Region 5) (2013). Person County Farmer's Market Focus Group Discussion Guide.

<sup>2</sup> Yeh, M.C., Ickes, S.B., Lowenstein, L.M., Shuval, K., Ammerman, A.S., Farris, R. & Katz, D. (2008). Understanding barriers and facilitators, of fruit and vegetable consumption among a diverse multi-ethnic population in the USA. *Health Promotion International*, 23(1). Doi: 10.1093/heapro/dam044.  
*Used with permission from M.C. Yeh.*

<sup>3</sup> Washington State WIC Nutrition Program (September 2013). Selecting and purchasing fresh fruits and vegetables: A nutrition in-service for staff. DOH 960-073.

## Focus Group Questions

**Target Audience - To participate in this focus group participants must meet these criteria:**  
They must be the (1) volunteer for the focus group and (2) be at least 18 years of age.

**Moderator: When I say fruit, I mean any non-fried form of fruit – fresh, canned, frozen or juices, unless I specify otherwise. The same for vegetables: When I say vegetable, I mean non-fried fresh, frozen, canned or juices.**

**1. What makes it hard for you to eat fruits and vegetables?<sup>2</sup>**

*Prompt: Don't know how to prepare, don't have time to prepare, family or household members do not like, nowhere to garden to grow own, Don't like them, expensive, hard to find good quality*

**2. A. What keeps you from buying more fruits and vegetables?<sup>2</sup>**

*Prompt: Price, don't know where to buy them, no place to store them, they go bad before we can eat or prepare them.*

**B. What keeps you from purchasing FRESH (not canned, frozen, preserved or juiced) fruits and vegetables?<sup>2</sup>**

*Prompt: Price, don't know where to buy them, no place to store them, poor quality of produce, SNAP/EBT or WIC is not accepted, locations and/or hours do not work with my schedule.*

**3. Think about when you are home. Is there anything that prevents you from eating fruits and vegetables?<sup>2</sup>**

*Prompt: Tempted by other foods, don't know how to cook them, don't think I need any more, don't want to fool with washing and preparing*

**4. Think about when you eat meals away from home. Is there anything that prevents you from eating fruits and vegetables?**

*Prompt: Not available in restaurants and workplaces, tempted by or prefer other foods, don't think I need any more*

**5. A. We have talked about things that keep you from purchasing and eating fruits and vegetables.**

**What are some solutions or answers to deal with what prevents you from eating fruits and vegetables?**

*Prompt: Education about how to prepare them to make them more appetizing, lower prices, incentives at farmers markets and roadside stands such as match coupons, wider varieties of payment accepted, wider availability and more convenient locations to purchase.*

**B. What forms of payment do you use to purchase fruits and vegetables and why?**

*Prompt:* Debit card, cash, SNAP, WIC and Senior Farmers Market Nutrition Program Vouchers.

**6. What is important to you when you buy fruits and vegetables?<sup>1</sup>**

*Prompt:* Price, locally grown, fresh, in season, knowing where it came from, organic or non-genetically modified.

**7. What makes it easy for you to eat more fruits and vegetables?<sup>2</sup>**

*Prompt:* They are readily available where you shop, friends and family support eating them, for good health, doctor told them to, to manage or lose weight, taste good, it is popular in your community (i.e. eating local), if I grow them or someone near me does, if they are given to me or I trade for them

**8. A. What kinds of things might help you buy more fruits and vegetables?<sup>2</sup>**

*Prompt:* Special promotions, lower prices, retailers taking WIC vouchers and SNAP/EBT benefits.

**B. What encourages you or would encourage you to purchase FRESH (not canned, frozen, preserved or juiced) fruits and vegetables?<sup>2</sup>**

*Prompt:* Education about how to prepare, having tasty, easy recipes, actions by retailers including special events such as cooking and how-to-preserve demos, increased promotions of and knowing the hours and locations of farmers and tailgate markets and roadside stands, lower prices, transportation available, debit/credit acceptance, SNAP/EBT acceptance, WIC voucher acceptance

**9. Think about when you are home. Is there anything that helps you eat fruits and vegetables?<sup>2</sup>**

*Prompt:* Keep fruit bowl on counter, family members or someone in your household like to eat them, if they are prepared ahead of time (cut up) for easier cooking or eating, having fruit and vegetable snacks cut up and in eye line in the fridge, no more snack foods to eat except for fruits or vegetables.

**10. Think about when you eat meals away from home. Is there anything that helps you eat fruits and vegetables?**

*Prompt:* Vegetables usually on menu and on salad bars, like to have fruit for dessert, if served with meal and don't have to order/pay for separately, if cheaper than unhealthy options, menu calorie counts.

## Focus Group Member Questionnaire

The Focus Group Member Profile will be used to provide us with the demographics of our focus group members. **You do not need to put your name on the profile.**

1. What is your gender? (Check).  Male  Female

2. Which best describes you? (Check all that apply).

- African American       American Indian       Asian/Pacific Islander  
 Caucasian       Hispanic       Middle Eastern  
 Other: please specify \_\_\_\_\_

<b>3. What is your age range? Check one.</b>	18-35 years	36-50 years	51-65 years	66-75 years	Over 75 years

4. What is the highest level of education/training you have completed? (Circle one.)

- Grade: K    1    2    3    4    5    6    7    8    9    10    11
- 12
- College:    1    2    3    4    More than 4 years
- Other (please specify):
- \_\_\_\_\_

<b>5. How would you describe your employment status? Check one.</b>	Working full-time	Working part-time	Disabled/Unable to Work	Unemployed	Retired	Other/ Please specify

6. Which of the following religious affiliations do you most identify with?

- Prefer not to say     Baptist       Methodist  
 Presbyterian     Lutheran       Other Protestant  
 Catholic       Jewish       Non-denominational

7. Please select the County where you live primarily. If the area where you live is not listed please use the "other" space to tell us where you live. Check one.

Cherokee	Clay	Graham	Haywood
Jackson	Macon	Transylvania	Swain

Other: \_\_\_\_\_

**8. Please select the County where you purchase most of your food. If the area where you live is not listed please use the “other” space to tell us where you purchase most of your food. Check one.**

Cherokee	Clay	Graham	Haywood
Jackson	Macon	Transylvania	Swain

Other: \_\_\_\_\_

<b>9. How many people currently live in your household? Check one.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8 or more</b>

<b>10. Which of the following best describes your annual household income? Check one.</b>	Less than \$10,000	\$10,000-\$20,000	\$20,001-\$30,000	30,001 - 40,000	40,001-50,000	More than 50,000

<b>11. How important is it to you to eat fruits and vegetables?</b>	<b>Not Important</b>	<b>Somewhat Important</b>	<b>Important</b>	<b>Very Important</b>

**12. Do you feel like you typically eat enough fruits and vegetables (including fresh, frozen and canned and juices) on most days?**

- Not Sure       No       Yes

13. On a scale from 1-5, with 1 being not confident and 5 being very confident, how do you rate your confidence in knowing where to get fruits and vegetables? Circle one number.

1                      2                      3                      4                      5

14. On most days, how many <u>times</u> a day do you eat:	0 times	1 time	2 times	3 times	4 or more times
Fresh (non-processed) fruit					
Canned fruit					
Frozen fruit					
Fruit juice					
Fresh (non-processed) vegetables					
Canned vegetables					
Frozen vegetables					
Vegetable juice					

15. In general, which of the following places do you get most of your food from most of the time? Check up to 2.

- Convenience stores/corner stores
- Dollar stores
- Food bank or similar organization, community kitchen
- Regular grocery store or supermarket
- Specialty grocery store (ex: Whole Foods)
- Superstores/big box stores (ex: Wal-Mart)
- Fast Food Restaurants
- Other Restaurants (not fast food)
- Community Supported Agriculture (CSAs)
- Farmer's/tailgate market or farm stand
- My garden, friend's garden or community or church garden
- Other \_\_\_\_\_

**16. Where do you get most of your fruits and vegetables in the warmer and hot months of the year? Check up to 2.**

- I do not get fruits and vegetables
- Convenience stores/corner stores
- Dollar stores
- Food bank, pantry or church
- Regular grocery store
- Specialty grocery store (ex: Whole Foods)
- Superstores/big box stores (ex: Wal-Mart)
- Restaurants
- Community Supported Agriculture (CSAs)
- Farmer's/tailgate market or farm stand
- My garden, friend's garden or community or church garden

**17. Where do you get most of your fruits and vegetables in the cooler and cold months of the year? Check up to 2.**

- I do not get fruits and vegetables
- Convenience stores/corner stores
- Dollar stores
- Food bank, pantry or church
- Regular grocery store
- Specialty grocery store (ex: Whole Foods)
- Superstores/big box stores (ex: Wal-Mart)
- Fast Food Restaurants
- Other Restaurants (not fast food)
- Community Supported Agriculture (CSAs)
- Farmer's/tailgate market/farm stand
- Use home-canned, frozen or dried foods from harvest

	<b>Not Sure</b>	<b>Less than 1 mile</b>	<b>1-3.9 miles</b>	<b>4-6.9 miles</b>	<b>7-10 miles</b>	<b>More than 10 miles</b>
18. How close do you live to the nearest grocery store or supermarket? (Check one).						
19. How close do you live to the nearest farmers market/tailgate market or farm stand?						

	<b>No</b>	<b>I share the responsibility equally</b>	<b>Yes</b>
<b>20. Are you the primary food shopper in your family? Check one.</b>			

<b>21. Do you (Check one in each row):</b>	<b>NO</b>	<b>Yes</b>
Receive supplemental Nutrition Assistant Program (SNAP/Food stamp benefits)?		
Receive women, Infants, and Children benefits (WIC)?		
Receive coupons for fruits and vegetables from the WIC Farmers Market Nutrition Program or the Senior Farmers Market Nutrition Program?		
Ever use food banks, pantries, and community or church kitchens/feeding programs?		

*Thank you for your valuable input!*

## Rural Eating Assessment Project Interview Questions

*Interviewer script: Hello, my name is \_\_\_\_\_ and I am studying access to fruits and vegetables in western North Carolina. May I have about 10 minutes of your time to ask your opinion about fruit and vegetable access? I can walk with you if you need to keep walking. I do not need to know your name, I just want to gather anonymous information to help with my study. I'll write your answers down. Thank you for your time.*

*If they say yes, explain the consent form briefly and ask them to sign it. Emphasize that they can call with questions and give them an unsigned copy of the consent form to keep so they have the contact information. Let them know that once they agree to participate as a volunteer, their form will be placed in kept in a separate envelope and their answers cannot be matched back to their name.*

*For Phone Interviews: Consent forms will be left with transit director and signed and collected prior to interviews.*

*When I say fruit, I mean any non-fried form of fruit – fresh, canned, frozen or juices, unless I specify otherwise. The same for vegetables: When I say vegetable, I mean non-fried fresh, frozen, canned or juices.*

*Interviewer: Read the question and answer options when applicable.*

**1. A. First, what county do you live in? Check one.**

Cherokee	Clay	Graham	Haywood
Jackson	Macon	Transylvania	Swain

*If they say anything other than the 8 counties we are targeting, thank them for their time and tell them that you are sorry, you can only interview residents who live in our 8-county study area.*

**1. B. What is your zip code? \_\_\_\_\_**

	Not Important	Somewhat Important	Important	Very Important
<b>2. How important is it to you to eat fruits and vegetables?</b>				

<b>3. On most days, how many times a day do you eat:</b>	<b>0 times</b>	<b>1 time</b>	<b>2 times</b>	<b>3 times</b>	<b>4 or more times</b>
Fresh (non-processed) fruit					
Canned fruit					
Frozen fruit					
Fruit juice					
Fresh (non-processed)					

vegetables					
Canned vegetables					
Frozen vegetables					
Vegetable juice					

**4. Where do you purchase most of your fruits and/or vegetables?** (Prompt: Superstores such as WalMart, convenience store/corner store, fastfood restaurants, regular grocery store, farmer's market).

**5. What makes it hard for you to eat fruits and vegetables?**

*Prompt: Don't know how to prepare, don't have time to prepare, family or household members do not like, nowhere to garden to grow own, Don't like them, expensive, hard to find good quality*

**6. What makes it easy for you to eat more fruits and vegetables?**

*Prompt: They are readily available where you shop, friends and family support eating them, for good health, doctor told them to, to manage or lose weight, taste good, it is popular in your community (i.e. eating local), if I grow them or someone near me does, if they are given to me or I trade for them.*

**7. When you shop for fruits and vegetables, what qualities do you look for?** (Prompt: Taste, freshness, price).

**8. What is the best way to tell people about where to get fruits and vegetables?** (Prompts: Advertising in the newspaper, radio, church announcements).

**9. Complete this sentence. I would eat more fruits and vegetables if:**

*Almost done. Now I have a few questions about you.*

**PROFILE**

1. Interviewer, mark gender of interviewee here: \_\_\_\_ Male \_\_\_\_ Female

2. Which best describes you? (Check all that apply).

- African American       American Indian       Asian/Pacific Islander  
 Caucasian       Hispanic       Middle Eastern  
 Other: please specify \_\_\_\_\_

<b>3. What is your age range? Check one.</b>	18-35 years	36-50 years	51-65 years	66-75 years	Over 75 years

4. What is the highest level of education/training you have completed? (Circle one.)

- Grade: K    1    2    3    4    5    6    7    8    9    10    11  
 12  
 College:    1    2    3    4    More than 4 years  
 Other (please specify):  
 \_\_\_\_\_

<b>5. How would you describe your employment status? Check one.</b>	Working full-time	Working part-time	Disabled/Unable to Work	Unemployed	Retired	Other/Please specify

6. Which of the following religious affiliations do you most identify with?

- Prefer not to say     Baptist       Methodist  
 Presbyterian       Lutheran       Other Protestant  
 Catholic       Jewish       Non-denominational

<b>7. How many people</b>	1	2	3	4	5	6	7	8 or more

<b>currently live in your household? Check one.</b>	<input type="checkbox"/>							
	<input type="checkbox"/>							

<b>8. Which of the following best describes your annual household income?</b>	Less than \$10,000	\$10,000-\$20,000	\$20,001-\$30,000	30,001-\$40,000	40,001-\$50,000	More than 50,000
	<input type="checkbox"/>					

**9. Which county do you purchase most of your food from? Check one.**

Cherokee	Clay	Graham	Haywood
Jackson	Macon	Transylvania	Swain

<b>10. Are you the primary food shopper in your family? Check one.</b>	No	I share the responsibility equally	Yes
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**11. On a scale from 1-5, with 1 being not confident and 5 being very confident, how do you rate your confidence in knowing where to get fruits and vegetables? Circle.**

1                      2                      3                      4                      5

*Thank you so much for your valuable input!*

**Rural Eating Assessment Project Survey**

Please complete the following survey. The survey is printed on front and back.

**1. What PREVENTS YOU FROM eating non-fried fruits and vegetables (includes canned, fresh (non-processed) and frozen fruits and vegetables)? Check one for each item.**

Item	N/A	No	Yes
<b>General Questions</b>			
Do not like fruits and/or vegetables			
Have health issues related to eating fruits and vegetables (difficulty with digestion, dental problems, etc.)			
Someone in your household does not like fruits or vegetables			
Do not have time to fix fruits and vegetables to eat			
Do not have a place/enough space to store fruits and vegetables			
Do not know how to pick out ripe or good quality fruits and vegetables			
Do not have the kitchen tools to prepare fruits and vegetables			
Need more skills in knowing how to prepare fruits and vegetables			
Where you shop does not have good variety of fruits and vegetables			
The quality of available fruits and vegetables where you shop is not good (damaged with bruises, etc.)			
The prices of fruits and vegetables are expensive/too expensive			
Live too far away from good sources of fruits and vegetables			
<b>Questions Related to Farmer’s Markets, Tailgate Markets and Farm Stands (referred to below as markets/stands)</b>			
Do not know where markets/ stands are located			
Do not know what products are available at markets/stands			
Do not know the days and times that markets/stands are open			
The dates and/or hours of operation of markets/stands is not convenient for your schedule			
The prices at markets/stands do not fit into my budget			
Do not have reliable transportation to get to markets/stands			
It is difficult to shop at farmer’s markets/stands because you have a young child(ren) with you making shopping more difficult			
WIC vouchers are not accepted at markets/stands			
Electronic benefits transfer (EBT) cards/Food Stamp/Special nutrition assistant program (SNAP) benefits or are not accepted at markets/stands			
Senior farmer’s market coupons are not accepted at markets/stands			
Do not provide “one-stop shopping” where I can get other non-food items			

2. Which of the following **CURRENTLY HELPS** or **WOULD ENCOURAGE YOU** to eat more non-fried fruits and vegetables (includes canned, fresh (non-processed) and frozen fruits and vegetables)? Check one for each item.

Item	N/A	No	Yes
<b>General Questions</b>			
If my doctor told me or someone in my household that it is good for my health/someone in my household's health			
Learning how to grow a garden or having a space for a garden			
Learning about community or school gardens that I could go to			
Coupons, special and deals from stores, farmer's markets, etc.			
Having recipe cards placed next to fruits and vegetables			
More affordable prices for fruits and vegetables			
More availability of local foods			
Retailers offering fruits and vegetables closer to my home/on my travel route			
<b>Questions Related to Farmer's Markets, Tailgate Markets and Farm Stands (referred to below as markets/stands)</b>			
WIC vouchers being accepted at markets/stands			
Electronic benefits transfer (EBT) cards/Food Stamp/Special nutrition assistant program (SNAP) benefits being accepted at markets/stands			
A dollar-for-dollar match coupon for each dollar on federal nutrition benefit purchases (such as SNAP, WIC farmer's market or Senior farmer's market benefits)			
Senior Farmer's Market coupons being accepted at markets/stands			
More variety of fruits and vegetables			
Better quality of fruits and vegetables			
More fresh (non-processed) fruits and vegetables			
More convenient access to fruits and vegetables			
More clear signage at farmer's, tailgate markets and farm stands			
Pricing in bundles at markets/stands (such as 3 for \$1), etc.			
Better advertising about what is available at markets/stands			

	Never more expensive than	Sometimes more expensive than	About the same price as	Usually more expensive than	Always more expensive than
3. Fruits and vegetables at farmer's markets or tailgate markets are _____ at grocery stores/super markets (check one to fill in the blank).					

	Would not buy fruit	Would not be willing to pay more	Up to \$2.10 (5% more)	\$2.12-\$2.20 (6-10% more)	\$2.22-2.30 (11-15% more)	\$2.32-\$2.40 (16-20% more)	\$2.41 or higher (more than 20% more)
4. If 1 pint of your favorite <b>fruit</b> was available at a grocery store for \$2.00, how much would you be willing to pay for the pint at a farmer's or tailgate market or farm stand? Check one.							

	Would not buy vegetables	Would not be willing to pay more	Up to \$2.10 (5% more)	\$2.12-\$2.20 (6-10% more)	\$2.22-2.30 (11-15% more)	\$2.32-\$2.40 (16-20% more)	\$2.41 or higher (more than 20% more)
5. If 1 pound of your favorite <b>vegetable</b> was available at a grocery store for \$2.00, how much would you be willing to pay for the pint at a farmer's or tailgate market or farm stand? Check one.							

	<b>Not Important</b>	<b>Somewhat Important</b>	<b>Important</b>	<b>Very Important</b>
6. How important is it to you to eat fruits and vegetables?				

7. Do you feel like you typically eat enough fruits and vegetables (including fresh, frozen and canned and juices) on most days?

Not Sure     No     Yes

**8. On a scale from 1-5, with 1 being not confident and 5 being very confident, how do you rate your confidence in knowing where to get fruits and vegetables?**

1                      2                      3                      4                      5

<b>9. On most days, how many <u>times</u> a day do you eat:</b>	<b>0 times</b>	<b>1 time</b>	<b>2 times</b>	<b>3 times</b>	<b>4 or more times</b>
Fresh (non-processed) fruit					
Canned fruit					
Frozen fruit					
Fruit juice					
Fresh (non-processed) vegetables					
Canned vegetables					
Frozen vegetables					
Vegetable juice					

**10. Indicate below A) how likely you would be to participate in each item (free of charge) and B) whether you believe each of the following would actually help you to eat more fruits and vegetables. Please circle.**

	<i>A. Likelihood of participating</i>	<i>B. Do you think it would it help increase your fruit and vegetable intake?</i>
Having a nutrition or health coach evaluate your home nutrition environment and provide improvement recommendations	Unlikely    Not sure    Likely	No    Not Sure    Yes
Receiving education about how to start a garden	Unlikely    Not sure    Likely	No    Not Sure    Yes
Education about how to participate in Community Supported Agriculture (you subscribe to a farm, purchase a year's harvest and receive a weekly share of what is in season from the farm)	Unlikely    Not sure    Likely	No    Not Sure    Yes
On site (at grocery stores or farmer's markets, tailgate markets or farm stands) healthy menu planning education with simple budget friendly recipes containing fruits/vegetables	Unlikely    Not sure    Likely	No    Not Sure    Yes
Learning how to preserve/can fruits and vegetables	Unlikely    Not sure    Likely	No    Not Sure    Yes
Healthy cooking demonstrations/lessons at grocery stores and/or farmer's markets	Unlikely    Not sure    Likely	No    Not Sure    Yes
Healthy shopping assistance at grocery	Unlikely    Not sure    Likely	No    Not Sure    Yes

stores and/or farmer's markets, tailgate markets and farm stands		
Grocery delivery service (someone shops for you and delivers fruits/vegetables to your home)	Unlikely   Not sure   Likely	No   Not Sure   Yes

	No	I share the responsibility equally	Yes
<b>11. Are you the primary food shopper in your family? Check one.</b>			

**12. In general, which of the following places do you get most of your food from most of the time? Check up to 2.**

- Convenience stores/corner stores
- Dollar stores
- Food bank or similar organization, community kitchen
- Regular grocery store or supermarket
- Specialty grocery store (ex: Whole Foods)
- Superstores/big box stores (ex: Wal-Mart)
- Fast Food Restaurants
- Other Restaurants (not fast food)
- Community Supported Agriculture (CSAs)
- Farmer's/tailgate market or farm stand
- My garden, friend's garden or community or church garden
- Other \_\_\_\_\_

**13. Where do you get most of your fruits and vegetables in the warmer and hot months of the year? Check up to 2.**

- I do not get fruits and vegetables
- Convenience stores/corner stores
- Dollar stores
- Food bank, pantry or church
- Regular grocery store
- Specialty grocery store (ex: Whole Foods)
- Superstores/big box stores (ex: Wal-Mart)

- Restaurants
- Community Supported Agriculture (CSAs)
- Farmer's/tailgate market or farm stand
- My garden, friend's garden or community or church garden

**14. Where do you get most of your fruits and vegetables in the cooler and cold months of the year? Check up to 2.**

- I do not get fruits and vegetables
- Convenience stores/corner stores
- Dollar stores
- Food bank, pantry or church
- Regular grocery store
- Specialty grocery store (ex: Whole Foods)
- Superstores/big box stores (ex: Wal-Mart)
- Fast Food Restaurants
- Other Restaurants (not fast food)
- Community Supported Agriculture (CSAs)
- Farmer's/tailgate market/farm stand
- Use home-canned, frozen or dried foods from harvest

	Not Sure	Less than 1 mile	1-3.9 miles	4-6.9 miles	7-10 miles	More than 10 miles
15. How close do you live to the nearest grocery store or supermarket? (Check one).						
16. How close do you live to the nearest farmer's market/tailgate market or farm stand?						

**17. What is your gender? (Check).**       Male       Female

**18. Which best describes you? (Check all that apply).**

- African American
- American Indian
- Asian/Pacific Islander

- Caucasian
                         
  Hispanic
                         
  Middle Eastern  
 Other: please specify \_\_\_\_\_

<b>19. What is your age range? Check one.</b>	18-35	36-50	51-65	66-75	Over 75

**20. What is the highest level of education/training you have completed? (Circle one.)**

- Grade: K    12    3    4    5    6    7    8    9    10    11    12  
 College:    1    2    3    4    More than 4 years  
 Other (please specify):  
 \_\_\_\_\_

<b>21. How would you describe your employment status? Check one.</b>	Working full-time	Working part-time	Disabled/Unable to Work	Un-employed	Retired	Other/please specify

**22. Which of the following religious affiliations do you most identify with?**

- Prefer not to say     Baptist     Methodist  
 Presbyterian     Lutheran     Other Protestant  
 Catholic     Jewish     Non-denominational

**23. Please select the County where you live primarily. If the area where you live is not listed please use the “other” space to tell us where you live. Check one.**

Cherokee	Clay	Graham	Haywood
Jackson	Macon	Transylvania	Swain
Other			

**24. What is your zip code (Check one)?**

28901		28707		28718		28738		28771		28783	
28903		28708		28721		28744		28772		28785	
28904		28712		28722		28745		28774		28786	
28905		28713		28725		28747		28775		28787	
28906		28716		28733		28751		28779		28788	
28909		28717		28734		28768		28781		Other	

**25. Please select the County where you purchase most of your food. If the area where you live is not listed please use the “other” space to tell us where you purchase most of your food. Check one.**

Cherokee	Clay	Graham	Haywood
Jackson	Macon	Transylvania	Swain
Other			

<b>26. How many people currently live in your household? Check one.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8 or more</b>

<b>27. Which of the following best describes your annual household income?</b>	Less than \$10,000	\$10,000-\$20,000	\$20,001-30,000	\$30,001-40,000	\$40,001-50,000	More than \$50,000

<b>28. Do you (check one in each row):</b>	<b>No</b>	<b>Yes</b>
Receive supplemental Nutrition Assistant Program (SNAP/Food stamp benefits)?		
Receive women, Infants, and Children benefits (WIC)?		
Receive coupons for fruits and vegetables from the WIC Farmer;s Market Nutrition Program or the Senior Farmer’s Market Nutrition Program?		
Ever use food banks, pantries, community or church kitchens/feeding programs?		

*Thank you for your valuable input!*