

Empty Bellies in Fields of Plenty:
A review of the U.S. federal food and nutrition programs and rural food insecurity

by
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Abbreviations and Acronyms

CACFP	Child and Adult Care Food Program
CSFP	Commodity Supplemental Food Program
FDPIR	Food Distribution Program for Indian Reservations
NSLP	National School Lunch Program
SBP	School Breakfast Program
SFMNP	Senior Farmers' Market Nutrition Program
SFSP	Summer Food Service Program
SNAP	Supplemental Nutrition Assistance Program
TEFAP	The Emergency Food Assistance Program
WIC	Supplemental Nutrition Assistance for Women, Infants and Children
WIC FMNP	WIC Farmers' Market Nutrition Program

To all who have ever struggled to put food on their table.

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Abstract

Food insecurity exists across the entirety of the United States population but higher rates of insecurity are seen in rural areas as compared to urban households. This research looks to understand current federal initiatives used to address food insecurity and how those initiatives address rural food insecurity specifically. Food insecurity affects an individual's ability to function in normal activities and may be one of the more outwardly visible signs that the household is facing the struggles of poverty. Rural households experiencing food insecurity at higher rates, compared to their urban counterparts, is a significant cause for concern that these households have additional barriers to achieving food security. This research focuses on answering the question how do federal food and nutrition programs address rural food insecurity? By using a framework of food security and conducting a content analysis on the federal food and nutrition programs and a thematic analysis of academic literature focused on rural food insecurity it is possible to see what can be done to better address the struggles of rural households. Adjusting existing programming to limit the need for personal transportation by rural households to access food is one major improvement that could be made to improve rural household's food security. The USDA food and nutrition programs have limitations to addressing the specific barriers of rural food insecurity, and by making existing programs more widely available to those who would benefit most from them there is greater opportunity for these barriers to be addressed.

Keywords: rural, United States, food insecurity, food access, poverty, SNAP, USDA, nutrition programs

Chapter One

Introduction

Food insecurity hides in plain sight in households across the country, in the stomach of a coworker who “forgot” their lunch for the third time this week, and in the mind of the child who just cannot seem to listen to the teacher at the front of the classroom. Signs of food insecurity have become just a normal component of life in the United States, with the existence of holiday food drives and emergency meal programs. Food insecurity goes beyond an individual’s ability to provide food for themselves, but it affects their whole life. Food insecurity affects the mental and physical health of those individuals that experience it by affecting their ability to learn, and to function in everyday tasks. Food insecurity may often be a sign of additional and larger challenges in an individual’s home and personal life.

A person could become food insecure in what feels like a blink of an eye, even for those who think that will never happen to them. Changes in a person’s life can immediately affect their situation; the unexpected loss of a family member, being laid off from a job or an injury or illness could all contribute to why an individual or family becomes food insecure. Food insecurity is a nationwide social problem affecting millions of households, and as such the US federal government has developed a variety of programs which aim address factors that attribute to food insecurity. Despite these programs, rural households experience food insecurity at higher rates than other populations in the US, which is counter intuitive given that a significant amount of the US food supply is produced in rural regions of the country.

The nature of rurality is such that households live and operate at greater distances from each other as well as from other resources. It is possible that the choice to live in rural areas presents unique benefits and challenges for the members of these households. Rural residents

may seek different methods to overcome their individual and collective challenges as compared to their urban counterparts. In regards to food insecurity, rural households may need additional supports to become food secure, but may also be too prideful or face other challenges that prevent them from seeking assistance. When seclusion plays a key role in the life style of rural residents, how can community resources be appropriately targeted to and utilized by these constituents? And is enough being done to provide rural households with the knowledge and resources necessary to overcome food insecurity?

This research looks directly at how federal food and nutrition programs address food insecurity for rural United States households. Chapter 2 will provide insight into the definition of food insecurity by outlining the criteria necessary for a household to be considered food secure. Chapter 2 then continues by looking at who is food insecure in the United States and providing demographic comparisons of urban and rural populations. The chapter concludes by looking at the history of food insecurity in the United States, what has been done to formally address food insecurity, and the measures that rural households take to informally address their food insecurity. Chapter 3 provides information on the research methods and methodology used to collect the data presented in Chapter 4. The results of data collection are presented in chapter 4. Chapter 4 begins with an evaluation of the federal food and nutrition programs which provides insight into how food insecurity is already addressed across the country. Then by looking specifically at rural communities' needs and these programs, this research will look to understand what can be done to better support rural households and prevent them from encountering continued food insecurity.

Chapter Two

Background and Significance:

Across the United States, food drives pop up around the holidays collecting food for people that are described as needy or less fortunate. People give nonperishable food items to the drive but may not stop to consider why this phenomenon is occurring and if there is a permanent solution. Food insecurity is not a phenomenon that occurs only around Thanksgiving or Christmas, but instead can be an everyday problem for a person who cannot afford to feed the members of their household a full meal on any given night. What these food drives are pointing to is the severe and persistent food insecurity that plagues households across our country. Rural parts of the United States are typically viewed as the farmland that produces the nation's food supply, but still these areas are not immune to the struggles of food insecurity. This is research focused on understanding rural food insecurity and begins by addressing what it means to be food secure, then look at who is affected by the issue and what is being done to address it. The United Nations key components of food security will serve as the guiding principles to evaluate the federal food and nutrition programs and their effectiveness for the needs of rural households in achieving food security.

2.1 What is food security?

For individuals who are food secure, their food security status may not be something they consider often, but food security status plays an important role in the way an individual interacts with society. Food security is a component of an individual's ability to maintain their health and wellbeing. Experiencing food insecurity can result in poor health outcomes, under development and nutritional deficiencies. Gundersen and Ziliak (2015) found that food insecure children are 2-3 times more likely to suffer from anemia and 1.4 times more likely to have asthma than their

food secure counterparts. Additionally, food insecure adults were found to have higher occurrences of depression, diabetes and hypertension than their peers who are food secure (Gundersen and Ziliak 2015). Food insecurity increases negative health outcomes including chronic diseases, and poor mental health and puts great stress on the health care system. Food insecurity can also have significant effects on the economy, negative individual effects of food insecurity such as depression and chronic illnesses can prevent individuals from being able to work and contribute to the economy in positive ways and instead add to personal and societal debts. Addressing food insecurity and providing resources and support to increase food security not only will support better health outcomes, but may also reduce the other effects of poverty felt by these households and society as a whole. For some individuals poverty may be both a cause as well as a consequence of food insecurity (EC-FAO Food Security Programme 2008) which may hold the individual in a perpetual loop of poverty.

The effects of food insecurity may impact the wellbeing of a person at any stage in their life, but can have more significant effects on populations that are typically considered more vulnerable. Food insecure adults are at risk for significant nutritional deficiencies and poor health outcomes. However, when compared to the average adult population other populations face greater consequences to their health and well-being when facing food insecurity this includes children, older adults and pregnant or breastfeeding women. Piontak and Schulman (2014) acknowledge that there can be “lasting detrimental effects on the physical, emotional and educational development of children” (75) who experience and live in a household that experiences food insecurity (Ke and Ford-Jones 2015). To better understand how food insecurity affects the lives of individuals, this section will continue by providing criteria for which food insecurity is evaluated.

In order to address food insecurity, this research addresses what the criteria are to be considered food secure, and will utilize the United Nations components of food security. While not all countries define food insecurity the same way, utilizing the United Nations criteria sets a global standard which can be applied to the United States for evaluating the effectiveness of food security programing. The Food and Agriculture Organization (FAO) of the United Nations, has set out four essential components to food security. These components are the “physical availability of food, economic and physical access to food, food utilization and stability of the other three dimensions over time” (EC-FAO Food Security Programme 2008). To make use of these criteria in evaluating USDA programs, this section will continue by reviewing the definition of each component. Additionally, this section will explain how each of these components may be seen by individuals or households experiencing the problems of food insecurity.

The first key component of food security is the physical availability of food. Physical availability is defined by the FAO as “the adequacy of the supply of food” (EC-FAO Food Security Programme 2008). Physical availability looks at if there are food stores available to consumers, as well as whether production and stock levels are sufficient to feed the individuals in that community (Andress and Fitch 2016, 152; EC-FAO Food Security Programme 2008). If stock levels in that community are not sufficient to adequately feed the community, the necessary food supply is not physical available. Andress and Fitch (2016) take the definition one step further than the FAO by suggesting that the food in these supplies needs to be healthy, which they define by the availability of fresh produce in the food supply. Food insecure households often find themselves turning to processed and fast foods, this supplemental component of the definition aids the idea that increased intake of fresh produce would support

low income individuals facing obesity and other diet related diseases to turn towards healthier options. Once it can be determined that food is physically available, the next step is to see if food can be accessed.

Accessibility is the second component of food security, and speaks to both the economic and physical access to food. Economic access may be looked at in regards to affordability of food, and also considers household income levels. Affordability refers to whether or not individuals are able to pay for the food that is available, if food prices and an individual's income do not align sufficiently economic access cannot be possible (Andress and Fitch 2016, 152; EC-FAO Food Security Programme 2008). The FAO also believes that income, expenditures and market prices all must be within a reasonable range to "achieve food security objectives" (EC-FAO Food Security Programme 2008). When those three components of economic access do not align, there is a greater likelihood of chronic food insecurity due to inadequate financial resources to balance food needs. In an area of high poverty, if market value is not adjusted for fluctuations in wages that results in low income there is a greater likelihood that food security will not be met. An individual that can achieve economic access must also achieve the second component of accessibility, which is the ability to physically access the food the individual needs.

Physical accessibility is the second component included in accessibility and looks to the "geographic location of the food supply and ease of getting to that location" (Andress and Fitch 2016, 152). When referring to geographic location, we must look at the locations in which food is produced, and where it can be distributed to consumers. Transportation, or ease of getting to the location, is required for moving food from the location in which it is produced and processed to the location in which consumers can acquire it. At the same time, consumers must be able to

get to the point of purchase or distribution, but if they are unable to get to the point of purchase physical accessibility cannot be met. Once an individual has gained access to food, they must be able to utilize the food they have.

Food utilization is the third component defined by the FAO, and perhaps the most complicated. Food utilization itself has three different parts to it, which all must be met based on the FAO definition to achieve the food utilization component of food security. Food utilization refers to the ability of the consumer, to use the food available to them, to maintain healthy eating habits with diversified and regular meals, as well as the ability of the consumers body to use the nutrients from the food that the individual eats (EC-FAO Food Security Programme 2008). To meet the requirements of food utilization, an individual must be able to properly break down and cook their food, and eat a variety of meals with sufficient nutrients for their body to utilize to achieve a healthy lifestyle. By discussing the need for sufficient nutrients to achieve a healthy life style, the UN acknowledges that while an individual may have something to eat, if they are not eating foods that have the appropriate nutrients for their body to function appropriately instead resulting in chronic illnesses, they could still be food insecure. If it is possible for an individual to meet the components of food utilization, accessibility and availability, they must still meet the stability requirement to be food secure.

The final component of food security presented by the FAO is stability of the other components over time. This component calls for an individual to have consistency in the availability of food, their access to it and their ability to use that food. If it is not maintained at a consistent rate and is below the level of what it is necessary to maintain their health, that individual cannot be considered food secure. This component makes sure that food security is not measured only at one point in time but rather monitored continuously. The United Nations

sets global standards for which to review and understand food security. These standards set a precedent for which nations can hold themselves accountable to and will be utilized in this research to evaluate food insecurity in the rural United States.

By the FAO's definition any household who is unable to meet the essential components of food security as they describe would be considered food insecure. In the United States food insecurity is not measured on an individual basis but rather at a household level. This means that if the household had difficulty providing enough food for all of their members, or food intake of some household members was reduced or disrupted because of a lack of resources at some point during the year (Hanson and Olson 2012, 1174) then the household would be considered food insecure. With an understanding of food insecurity through the interactions of the four components outlined by the UN, physical availability, accessibility, food utilization and stability over time, this research will turn to look at how food insecurity is presented in the United States. Food should be a basic human right, and considering these components of food security as they are seen in current remedies to food insecurity in the US is a step towards the right to food.

Food insecurity is not a new phenomenon in the United States, but has been considered with different definitions over the years. "The President's Task Force on Food Assistance" of the 1980s, looked at the phenomenon of hunger (Wunderlich and Norwood 2006, 24). This task force recognized that hunger "bespeaks the existence of a social, not a medical, problem", and led to a transition in the 1990s that included measuring and defining food security, food insecurity and hunger in different ways (Wunderlich and Norwood 2006, 25–26). The USDA defines food insecurity as "a lack of consistent access to enough food for an active, healthy life" and adds that this occurs because of a lack of available financial resources while hunger as a personal, physical sensation of discomfort (Feeding America n.d.). In the United States, poverty guidelines are the

primary indicator used to determine an individual's eligibility for federal food and nutrition assistance programs. These guidelines were developed in 1963-1964 by the USDA based on food budgets of families facing economic hardship, the thresholds are given in dollar amounts that are adjusted annually (Boyle and Holben 2012, 328). For a majority of the programs, income and assets cannot be calculated at a percentage greater than 130 percent of the federal poverty level. These cut offs for income perpetuate food insecurity, preventing households just above the cut off from being able to sustain their food needs. Furthermore, determining food insecurity in the United States is done through a survey, known as the Food Security Survey Module. This survey helps clinicians to determine food security status by asking questions that the individual or family can reflect on to answer. The questions address topics of insufficiency of budgets for food, food shortages, the quality and quantity of food eaten by household members, and periods of food intake that are reduced and increased hunger or weight loss (Boyle and Holben 2012, 330). Appendix A. has the detailed survey from the USDA Economic Research Service, used determine food insecurity status (high, marginal, low and very low food security) of households in the United States (United States Department of Agriculture 2017b). These ranges acknowledge the significance of different degrees of food insecurity and consider the different effects each level has on a household. This survey is used to determine national and individual food security status, and considers the components of food insecurity set by the United Nations as well. The United States uses this survey to determine who is food insecure.

2.2 Who is affected by food insecurity?

Food insecurity is a nationwide social problem for the United States that affects significant portions of the population. In 2017, the through data collected from the Food Security Survey Module, the USDA reported that food insecurity affected over 11 percent of the U.S.

population, which is approximately 40 million people in 15 million households (Coleman-Jensen 2017). Even within the population of households affected by food insecurity, there are varying levels to which people are affected by this problem that can vary based on their demographics.

Different populations of people can be affected by food insecurity in different ways. The populations that show the largest variations in the rates at which they experience food insecurity include minority versus majority ethnic populations, single parent households compared to married households, and rural households compared to urban or suburban households. The Economic Research Service (ERS) presents statistics on this topic that show black, non-Hispanic households experience food insecurity at a rate of 22.5 percent and Hispanic households at a rate of 18.5 percent while white, non-Hispanic households are the lowest percentage at 9.3 percent of households experiencing food insecurity (Rabbitt, Coleman-Jensen, and Gregory 2017). Single parent headed households experience food insecurity at the rate of 31.6 percent for households headed by a single mother, and 21.7 percent for households headed by a single father, while multiple adult households have a prevalence of food insecurity at a much lower rate of 8 percent (Rabbitt, Coleman-Jensen, and Gregory 2017). The way households experience food insecurity can be related to their access food, their age, their income as well as their social connections or geographic location, among these key differences is one between rural population and other populations.

Food insecurity in the Rural United States

One of the major factors in determining rurality is the density of the population on the land. The USDA states that nearly 60 million Americans live in rural areas of the country, (United States Department of Agriculture n.d.), these areas make up 97 percent of the country's land mass, but only about 19 percent of the population lives in these areas (Bureau n.d.). While

the U.S. Census Bureau does not provide an explicit definition of “rural”, the lack of a clear definition from the Census Bureau, creates inconsistencies in statistics and data presented on the topic of rurality. It is useful to have a working definition to ground the theories and ideas that are presented in this research. To ground the theories and ideas presented in this research, the USDA Economic Research Service definition of rural will be used, which states that rural areas “consist of open countryside with population densities less than 500 people per square mile and [census designated] places with fewer than 2,500 people” (United States Department of Agriculture n.d.). Additional demographic information may also support an understanding of the nature of rurality as it affects food security.

Food insecurity exists at a higher rate in rural areas as compared to urban areas. The ERS presents the difference in rate of food insecurity from rural and non-metropolitan areas at 15 percent and lower rates in the suburbs with 9.5 percent of households experiencing food insecurity (Rabbitt, Coleman-Jensen, and Gregory 2017). The Food Research & Action Center (FRAC) shows households in metropolitan areas with food insecurity rates at 11.5 percent (Food Research & Action Center n.d.). While the greater percent in rural areas may not seem like a significant difference, it accounts for more than a million households that are unable to provide a sufficient amount of food for their residents. The higher percentage of rural households experiencing food insecurity indicates that they face additional barriers to food security as compared to urban and suburban households, but to address these barriers they need to be identified.

While the U.S. Census Bureau does not provide an exact definition, but rather bases their understanding of rural off anything that does not fit into the definitions of urban or suburban, the demographic data collected by the Census Bureau provides a useful look at the differences in the

populations being discussed. The individuals living in rural regions have ways of life that vary greatly from individuals living in urban centers. Rural residents are 21 percent more likely to own their own homes, 11 percent more likely to be married and 2 percent more of the rural population is insured compared to their urban counterparts (Bureau 2016). However, rural residents are 10% less likely to have a bachelor's degree or any higher education than urban residents (Bureau 2016). The median age of rural adults is 51 years old, 6 years older than the median age for urban areas, (Bureau 2016) which could be an indicator of an aging population in these rural regions. Historically the primary industries of employment for rural regions have been agriculture and mining as well as manufacturing for rural areas, but there has been recent growth in education and health as well as trade, transportation and utilities (Cromartie 2017, 4). At the same time, wages and income in rural regions tend to be lower than urban and employment is significantly lower than it was prior to the 2008 recession (Cromartie 2017, 3). Taking into consideration this demographic information about rural United States communities will be useful in exploring poverty, isolation and other factors as they contribute to food insecurity in rural households.

The demographics of rural US communities points to the different barriers that these communities face as well as the challenges to close the gaps in coverage in regards to their ability to become food secure. Members of rural households are less likely to have received education beyond high school, and in addition to that the typical opportunities for employment had been in low wage work through agriculture, mining and manufacturing. As industries in rural areas transition to more skilled labor, individuals in rural households may lack the necessary schooling to transition with the work needs. The lack of education, even if able to acquire a job in a growing industry will restrict the potential income growth available to an individual and

likely hold them in a state of food insecurity. Additionally, the rural population is aging and contains more married couples than the urban population. These two factors may also contribute to food insecurity. The aging population may not be able to do the physically demanding labor required for the industries available to them which would result in them losing wages and potentially losing benefits as well if they had been receiving them. The income and assets of married couples are considered together while calculating eligibility for participation in the food and nutrition programs. This means there is a greater likelihood that the households of married couples in rural areas do not qualify for nutrition assistance benefits.

It is important to recognize that the nature of rurality comes with unique challenges in these households, because rural Americans may have fewer resources immediately available to them than their urban counterparts. In rural areas 23.8 percent of the population compared to 17.3 percent of the urban population does not have access to internet (Bureau 2016). Meanwhile, Canto et al. (2014) also state that “the persistent effects of poverty in rural areas may be rooted in rural households’ isolation from schools, services, social interactions and labor market resources”(1). Labor markets in rural areas are typically concentrated in low wage work (Piontak and Schulman 2014, 76), individuals who live and work in rural areas typically make hourly pay at low wages in industries like agriculture or manufacturing. Finding work that offers higher wages may require significant travel to urban centers, requiring the individual to have personal transportation. Rural locations have limited public infrastructure including availability of public transportation (Piontak and Schulman 2014, 76), which adds to the constraints of accessing services, job markets and other important resources, including grocers, food pantries and other food distribution sites. Despite these constraints, measures are being taken to support rural communities.

The struggles of rural communities have been of concern to the federal government for many years, but have gained more national attention in recent years. A 2016 memo to the White House acknowledged four key limitations that affect rural areas. These limitations were listed as: limited institutional capacity, geographic isolation, low population density and persistent poverty (Vilsack et al. 2016, 1–2). Rurality is often characterized by geographic isolation meaning there is significant distance between many resources and individuals homes, while low population density is one of the components that defines an area as rural. Both of these factors create limitations to how well social services, and institutions like schools and hospitals can provide resources to the individuals in their community. Persistent poverty in rural areas comes as a result of changes in labor and employment opportunities and the concentration of low wage work based in rural areas. Based on these limitations that are seen in rural areas, the White House Rural council presented three main areas of focus for administrative and policy action. The first of these areas of focus is to reduce barriers to accessing federal resources, recommendations for adjusting programming to reduce barriers includes removing minimums from funding amounts, allowing rural grant applications to be reviewed separately from urban grant applications, increasing supports for burdens associated with geographic isolation and increased support for staff and participants to navigate federal resources while aligning agency supports (Tom Vilsack et al. 2016, 2–4). The next area of focus is strengthening rural abilities to leverage local assets and accessing federal resources. In this regard, the federal government could provide supports for grant writing and community planning to rural communities, while this focus area also recommends that rural communities develop relationships with nearby urban areas to better leverage resources and assets when the limited population of rural areas may be hindering development (Tom Vilsack et al. 2016). The final focus area addressed in this report is the need

to focus federal resources to the areas of most significant need. Focused strategies of mapping and analyzing data as well as prioritizing administrative discretion on new opportunities in high poverty communities provide greater more targeted approaches to resolving the major points of concern.

Due to the significance of these challenges, the federal government has supported initiatives focused on “Rural Development” and “Rural Prosperity”. The rural development program states that they are “committed to helping improve the economy and quality of life in rural America” (United States Department of Agriculture n.d.). The programs that fall under the Rural Development initiatives focus on single family and affordable housing, utilities and infrastructure development, and business and industry development for rural Americans (United States Department of Agriculture n.d.). Despite the efforts of rural development and rural prosperity programs, none of the programs have taken an approach that begins by addressing food insecurity. Reducing food insecurity in rural America would be an important step in improving the quality of life for rural American households.

2.3 How has food insecurity been addressed in the U.S.?

Adjusting the definitions the federal government used to evaluate hunger, which was determined to be a personal feeling, to evaluating food insecurity as a social problem allows for targeted approaches for addressing the social problem. This section will review the targeted approaches used to address food insecurity in the United States. There are many federally sponsored programs directed at supporting the access to healthy and nutritious food for Americans. These programs are sponsored by various governmental departments such as the USDA, the Department of Public Health and U.S. Department of Health and Human Services through social services programs. Many of the major programs that are still utilized in the United

States today originated around the time of the Great Depression including what would later come to be known as the Commodity Supplemental Food Program, the Food Stamp Program in an experimental form and the National School Lunch Program. In the 1960s and 1970s, the USDA realized that these programs were not enough to solve the food insecurity problem, and that more needed to be done to address hunger and prevent malnutrition which led to expansion of those and creation of other programs (Boyle and Holben 2012). At this time, the USDA administers 15 different domestic food and nutrition programs (Oliveira 2018, 1), of the 15 programs 13 of them focus on supporting food insecure households through increased nutritional intake or monetary assistance for food. Throughout the course of time, funding for these programs has ebbed and flowed while the government attempts to balance the national budget, meaning these programs have not always provided enough support and individuals have had to look elsewhere for their food.

Taking a generalized approach to changing policy and research development related to food insecurity across the U.S. may not be enough to meet the needs of rural populations. While food insecurity affects both urban and rural areas, researchers have focused and developed literature in response to food insecurity in urban areas, and the federal government has efforts directed towards rural populations, but rural poverty in the United States has received much less attention from academic research and policy arenas (Canto, Brown, and Deller 2014, 1). This research focuses on rural populations and the gaps and barriers associated with federal programs that address food insecurity because of the lack of emphasis on the populations in rural areas in previous research. This research also acknowledges that the higher rate of food insecurity in rural households indicate that these household experience additional barriers to achieving food security that exists in lesser severity for urban households or that is not addressed by the existing

programs and seeks to identify these barriers and provide suggestions as to how FNS programming can overcome them.

Overview of Federal Food and Nutrition Programs for Food Security

The funding for the food and nutrition programs is a component of the Farm Bill and each year Congress must vote to approve funding for each of the programs. The 2014 Farm Bill set aside \$489 billion dollars to be used over the course of 5 years, with 75 percent of the appropriated funds being directed to the nutrition title, which gives approximately \$70 Billion to the federal food and nutrition programs each year (National Sustainable Agriculture Coalition n.d.). These programs provide food and nutrition assistance to households who meet federal income guidelines for participation. Each program targets different populations of people with a tendency to focus on populations most at risk, including women, children and the elderly.

The Supplemental Nutrition Assistance Program (SNAP) was established in 1961 and is the largest and most comprehensive program. SNAP was formerly known as food stamps, and began with the intention of improving the diets of low income households by increasing access to food and a households food purchasing ability (Boyle and Holben 2012, 343). SNAP alone receives approximately \$63 Billion of the money appropriated for these food and nutrition programs.

The Supplemental Nutrition Assistance Program for Women, Infants and Children is more commonly known as WIC. The program began in 1974 to safeguard the health of low income women, infants and children up to age 5 who are at nutritional risk by providing nutritious foods to supplement diet, provide information on healthy eating and assist with referrals to health care professionals (Boyle and Holben 2012, 346).

The Emergency Food Assistance Program (TEFAP) provides food for food insecure individuals but not through the same means as SNAP or WIC. Since its establishment in 1981, TEFAP has provided USDA surplus commodities (which include items such as fresh produce, canned vegetables, meat, and grains) to families in need of short term hunger relief through emergency food providers like food banks (United States Department of Agriculture 2015; Feeding America n.d.).

The Commodity Supplemental Food Program (CSFP) began in 1969 with the purpose of improving the health and nutrition of low income pregnant and breast feeding women, other new mothers up to one year post-partum, infants, children up to age 6 and older adults at least 60 years of age by supplementing their diets with nutritious USDA commodity foods (Boyle and Holben 2012, 343). However, as of 2014, CSFP no longer covers women, infants and children and instead directs these individuals to seek support through the WIC program (United States Department of Agriculture 2018b) and now the program only supports adults over 60 years old.

There are many programs focused on supporting dependents in low income or food insecure families. A majority of these programs are focused on school aged children, but there is also a program that supports both children and adult dependents. These programs provide support to families beyond their home, enabling their dependents to eat at school, in care centers and taking the burden of needing to purchase and make food for these time periods off the family. The National School Lunch (NSL) program was created to assist states in providing nutritious free and reduced priced lunches to eligible children (Boyle and Holben 2012, 344). The School Breakfast Program has provided nutritionally balanced breakfasts to qualified children at free and reduced prices since 1966 (Feeding America n.d.; Boyle and Holben 2012, 345). Meanwhile, the purpose of the Child and Adult Care Food program is to improve the

quality and affordability of day care for low income families by providing nutritious meals and snacks to children and adults who receive care in non-residential day care facilities (Boyle and Holben 2012, 345). Summer Food Service program began to ensure that children in lower income areas continued to receive nutritious meals during long school vacations (Boyle and Holben 2012, 345).

There are food and nutrition programs administered by the USDA that provide support in a targeted way. These programs are coordinated and funding is appropriated at the federal level but they may not necessarily be available to all people based solely on their income or food insecurity status. The Food Distribution Program for Indian Reservations (FDPIR) is one of the programs targeted to a very specific population. Founded in 1976, FDPIR began to provide commodity foods and nutrition education to improve the dietary quality of low income households, including older adults, living on Indian Reservations and Native American Families residing in designated areas near reservations (Boyle and Holben 2012, 343). The Farmers' Market Nutrition Program (FMNP) is focused on supporting two groups that often face difficulty in accessing fresh fruits and vegetables while also being at an increased risk for nutritional deficiencies. The WIC Farmers Market Nutrition Program began with the goal of providing fresh unprepared locally grown fruits and vegetables to WIC participants and expanding awareness, use of and sales at farmers markets (Boyle and Holben 2012, 346). The Senior Farmers' Market Nutrition Program is one of the newest of the federal food and nutrition programs. The program aims to provide fresh, nutritious, unprepared locally grown fruits, vegetables herbs and honey to low income seniors (Boyle and Holben 2012, 347). Across the country, 19,449 farmers, 3,461 farmers' markets, 2,541 road side stands and 94 Community Supported Agriculture sites participated in the SFMNP program. Each of the programs discussed in this section provides

support to increase food security for US citizens. These programs will be used as the basis for evaluation of the food security efforts conducted by the USDA and Food and Nutrition service as they support food security efforts in rural regions of the country.

This research addresses rural food insecurity in the United States to learn how federal food and nutrition programs address the problem and explore new or alternative ways to close the gaps between food insecurity and food security for rural households. The central question driving this research is how can federal food and nutrition programs better address the particular problems and conditions of rural food insecurity in the U.S.? To answer this question, three constitutive research questions will be used.

- In what ways do the federal food and nutrition programs address the key components of food security?
- How do federal food and nutrition programs address key components of food security for rural households?
- What modifications could be made to federal government programs to better meet the needs of rural populations?

The data collected from these questions will lead to the ability to answer the central research question. Answering the first question, will provide an understanding of how the federal food and nutrition programs address food insecurity through the key components set by the United Nations. Question two will then seek to understand how the federal food and nutrition programs operate in addressing the barriers to food security for rural households utilizing the same criteria. Then question three will examine where there are opportunities for change based

on the answers to questions one and two. Chapter 3 will continue by explaining how data was collected to answer these research questions.

Chapter Three

Methodology and Methods:

This section discusses the design of this study, including how data is collected and analyzed to answer the research question “how can federal food and nutrition programs better address the particular problems and conditions of rural food insecurity in the U.S.”? Constitutive research questions are used to collect data focused on answering that central research question. The questions asked for the sake of this research and the data collected are used to understand how federal food and nutrition programs provide support to food insecure households and allow for a focused understanding on the potential program alterations to address food insecurity for rural households.

3.1 Methodology

This research uses non-obtrusive methodologies to understand and evaluate food insecurity in rural households as it can be related to federal food and nutrition programs in the United States. Additionally, this research evaluates food insecurity in the United States through the key components of food security set forth by the United Nations Food and Agricultural Organizations. A scoping review and critical inquiry utilizing academic literature and USDA Food and Nutrition Service, as well as Economic Research Service program materials was used to collect data. The use of a scoping review in this research seeks to present an overview of the diverse body of literature surrounding the topic of food insecurity and federal food security programs, and allows for a descriptive review rather than in-depth analysis of each piece of literature (Pham et al. 2014). Critical inquiry is implemented to gather and evaluate data from a variety of sources to produce analysis and understanding that can be used to lead to new ideas and lead to suggestions for change in the food system (USC Aiken n.d.). Utilizing both academic

literature as well as USDA materials in these methodologies provides the ability to analyze the materials presented to the general public while also bringing in academic literature to assess gaps and seek new ideas to address rural food insecurity.

This research is focused on food insecurity and federal programming because I see food insecurity in the communities I work with food insecure populations in my role as a farmers' market manager in a low-income community and through my role as a volunteer in local and national anti-poverty and food security programs. While I see food insecurity, I also see that it seems to affect and be addressed differently based on the population density of an area. I have seen significantly more localized and grassroots initiatives be directed towards densely populated areas as compared to less densely populated and rural regions. Due to the significant opportunity for differences in grassroots and local initiatives across the country and my experiences, I have decided to focus on federal food and nutrition programs as they relate to food insecurity. Evaluating the federal food and nutrition programs provide a more stable and comprehensive way to view food insecurity initiatives across the nation and have less idiosyncrasies in implementation than grassroots and local initiatives. Reviewing these food security initiatives allows for the evaluation of the higher rates of food insecurity in rural communities as they relate to the federal food and nutrition programs and seek potential strategies to make changes that could reduce rural food insecurity.

3.2 Method

Content analysis as well as thematic analysis will be used to answer constitutive research questions and provide data related to existing federal food and nutrition programs as they relate to supporting households to achieve food security. This research will also provide the necessary data to analyze how the key components of food security, the United Nations FAO components

explained in chapter 2, are addressed through federal food and nutrition programs for rural households. In using content analysis, a qualitative research analysis method to interpret the content of the articles (Hsieh and Shannon 1995), the goal is to provide knowledge and understanding of the federal food and nutrition programs. Directed content analysis will allow for targeted questions to identify key concepts (Hsieh and Shannon 1995) as they relate to each food and nutrition program. Content analysis provides the necessary information to understand how the federal food and nutrition programs meet the criteria of food security. In addition, thematic analysis will be used in evaluating how each the key components of food security from the United Nations comes through in the academic literature for rural households. Thematic analysis is a way to describe patterns across qualitative data (Braun and Clarke 2006). While content analysis provides the ability to understand the content of the articles, thematic analysis shows repetition of the themes and other patterns of the way the themes through the literature. Since the primary data collected related to the key components of food security is qualitative, setting each component as a theme and reviewing the patterns that arise will present indications of how the federal food security initiatives fit into the themes.

3.2.1 Research Question 1

The first question used to guide this research is in what ways do the federal food and nutrition programs address the key components of food security? By observing federal food and nutrition programs at a national level in the United States, the data needed to answer this question includes the purpose and requirements of each program investigated, this information indicates who is eligible to participate and why certain groups may be included or excluded, as well as how each program operates to increase food security for its participants. Using the key components of food security to evaluate each program will show the extent to which each

program addresses the criteria for food security. This data will be collected from the U.S. Department of Agriculture, through the Food and Nutrition Service (FNS) as well as the Economic Research Service (ERS). The FNS is a component of the USDA that is responsible for working to end hunger and obesity and responsible for the administration of the federal food and nutrition programs discussed in this research (United States Department of Agriculture 2017a). Meanwhile, the ERS is another component of the USDA responsible for conducting research to inform and enhance decision making related to anticipated and emerging issues in agriculture, food and rural America (United States Department of Agriculture 2019). Additional data will be collected from national nonprofit anti-hunger organization materials, and from academic literature specific to each program including text books and peer reviewed journal articles. The data collected will be sorted by program and programs will be analyzed individually and all programs together as whole to understand how the federal food and nutrition programs address food insecurity at a national level.

3.2.2 Research Question 2

The next research question asks how do federal food and nutrition programs address the key components of food security, physical availability, access, food utilization and stability over time for rural populations in the US. Federal food and nutrition programs will be evaluated for how they address the key components of food security discussed in Chapter two as they relate to rural communities. Data will be collected through a review of academic research articles for the requirements and limitations of food security programs as well as anecdotal information from individuals experiencing food security and the rates of participation and utilization of programs in rural areas. Data will be collected utilizing academic research databases, and searches utilized key words including food insecurity, rural United States, and each of the individual components

of food security including; food access, food availability and food utilization. Stability of the other components over time was not used in the search, but rather evaluated as it was presented in the articles that arose from the other searches. Articles were excluded from the research data if they made no mention of the USDA Food and Nutrition programs that serve food insecure populations or if they had no specific reference to rural struggles with food security. The data collected will be organized based on the themes of the key components of food security. Thematic analysis will evaluate data for content related to rural communities and the key components of food security which includes physical and economic access to food, physical availability, food utilization and stability over time. Through analysis of the data collected for this question, the research will point to the reasons for which food insecurity exists in higher rates in rural areas.

3.2.3 Research Question 3

The final research question utilized is how could the federal government better address rural food insecurity? This will be observed at a national level, focused primarily on strategies that are within the parameters of the federal food and nutrition programs. These parameters will include adjustments that could be made to existing programs or new and alternative programs that correlate directly with programs that currently exist. Data collection and analysis for this question is synthetic, as it is informed by the information collected from research question one and research question two. Data will be gathered from academic journal articles and food security literature and analyzed for recommendations to closing gaps between federal food and nutrition programs ability to meet the needs of rural food insecure households. Data will be organized based on the key components of food security and whether the initiative could fall into

the scope of current federal food and nutrition programs or would be better operated through private or local level public organizations.

3.3 Chapter Conclusion

By utilizing content and thematic analysis it will be possible to develop a better understanding for the ways that federal food security programs provide resources and support to rural households that need assistance to achieve food security. These methods will also provide the opportunity to find and assess strategies that could be employed to provide more support to rural households in achieving food security. The data collected will provide insight into the intended role of federal food and nutrition programs to address food insecurity in a manner that ends hunger and obesity as it relates to the ability of rural households to become more food secure.

After collecting and analyzing the data to answer these constitutive research questions, analysis will draw an understanding of how each of these questions plays a role in answering the overall purpose of this research. This research will bring to light the role of federal food and nutrition programs in addressing food insecurity as a whole, and how these programs address the key components of food security for rural communities. Understanding how the federal food and nutrition programs as well as the key components of food security from the UN interact to address food insecurity in the US, makes it possible to provide suggestions for new or alternative strategies at a national level to provide additional support to rural households that could reduce barriers to food security. Chapter 4 will explain the results of this data collection and analyze the results for a better understanding of how federal food and nutrition programs can close gaps in coverage to increase food security for rural households.

Chapter Four

Results, Analysis, and Contribution

The results of this study are focused on understanding the role of federal food and nutrition programs in addressing rural food insecurity through the key components of food security. This research aims to answer the question “how can federal food and nutrition programs better address the particular problems and conditions of rural food insecurity in the U.S.”? In order to answer this question, research was conducted to find which of the federal food and nutrition programs are designed to serve food insecure people, how do these programs address the key components of food security as they relate to rural households and what could the federal government do to better address the food security needs of rural households? These questions are important because they will provide an understanding of where gaps in programs and resources exist as well as providing information specific to the problems of rural households in their attempt to use programs designed for the whole country. This chapter will begin by reviewing existing programs at a national level, then present how these national programs address food security for rural households and conclude with recommendations for improving food security in rural households.

4.1. Results and Analysis for Research Question 1: Assessment of Federal Food and Nutrition Programs

Assessment of Federal Food and Nutrition Programs will be guided by the research question “In what ways do the federal food and nutrition programs address the key components of food security”? Answering this question is important to understand the historical relevance and creation of the federal food and nutrition programs and how they aim to address food insecurity. The results from this question examine how the various factors of food security as

described by the United Nations are addressed by the existing federal food and nutrition programs across the entire United States population.

Although the USDA administers fifteen food and nutrition programs domestically, thirteen of these programs directly focus on supporting food insecure households through increased nutritional intake or monetary assistance. Through this research eleven programs from those thirteen were chosen to be evaluated with the key components of food security. The programs not reviewed in this research include the Special Milk Program and the Fresh Fruit and Vegetable Program, which are both programs for school children that operate alongside the National School Lunch and School Breakfast programs and will be included with the information that is reviewing these programs. This section will review each of the UN key components of food security and how the federal food and nutrition programs address these components. Appendix B. highlights information about each of the eleven programs to provide additional information about their founding dates, state level distribution, national monetary appropriations and national participation numbers to provide an understanding of how each program is utilized nationally. Meanwhile, Table 1. shows which of the components of food security each of these eleven programs plays a role in addressing.

Table 1. Federal Food and Nutrition Programs

Program Name	Physical Availability	Economic Access	Physical Access	Food Utilization	Stability Over Time
Supplemental Nutrition Assistance Program		x		x	
Supplemental Nutrition Assistance Program for Women, Infant and Children		x		x	
The Emergency Food Assistance Program	x	x			

Commodity Supplemental Food Program	x	x	x	
Child and Adult Care Food Program		x	x	
National School Lunch Program		x	x	x
School Breakfast Program		x	x	x
Summer Food Service Program		x	x	x
Food Distribution Program for Indian Reservations	x	x	x	
WIC Farmers' Market Nutrition Program		x	x	
Senior Farmers' Market Nutrition Program		x	x	

4.1.1 Physical Availability

The concern over the physical availability of food is something that is largely not addressed by the federal food and nutrition programs. Physical availability looks at the food supply and considers whether or not there is enough food, and what foods are being produced. But then continues by evaluating what foods are available at the food stores and at other distribution sites. Some retailers and food distribution sites may only hold nonperishable food items because they cannot accommodate holding or distributing perishable goods. If an individual is acquiring their food from a location like this, then the food supply would not include fresh produce. Physical availability also includes whether or not the food supply is in a location that would make it available to consumers (“FAO” n.d.; Andress and Fitch 2016). If a food distribution company is storing food in a warehouse, that food is not available to consumers, until that food is distributed to retailers. Even once that food is distributed from the

warehouse to retailers, it still may not be available to consumers if the product continues to be stored at the retailer, or is allocated to a processing that will create a ready to eat item.

Physical availability is partially addressed The Emergency Food Assistance Program (TEFAP) and the Commodity Supplemental Food Program (CSFP). With both of these programs, the distributor takes in a significant amount of commodity food items so that they can be allocated to people who need or will use the food. These distributors are responsible for figuring out how to get this food to consumers. These commodity food items have been allocated and moved around to specific locations based on need and introduce food supply into an area that may not have held surplus previously. The Food Distribution Program on Indian Reservations also recognizes the potential lack of availability for food supply and distribution on the reservations and provides services to bring food into the locations based on individual household requests.

The supply of food needed to feed individuals in the US exists but faces availability barriers because of the processing, storage and distribution patterns currently in place. Certain areas within the country that process and store food products, as well as food retailers, hold a surplus of food, meaning that at any given time they have more goods than they will sell or distribute before they go bad, then all of these locations produce waste that could have been consumed if food was distributed more effectively. Without considering food wasted, privatized food distribution also allows for an uneven distribution of goods across the country, it is possible that there is unequal availability of crops in different regions. The US has a significant supply of food, the problem of availability stems not from a lack of supply but from the location of the food supply. Availability of food in the US comes down to a flaw in distribution rather than a lack of sufficient supply of food across the country. USDA programming currently does not

provide targeted intervention in distribution of food supply to increase or encourage food availability.

4.1.2. Access

Access is the key component of food security assessed by the United Nations that is most widely addressed by the US federal food and nutrition programs. Economic access may be understood in regards to affordability of food. Affordability refers to the extent to which individuals are able to pay for the food that is available, which may be reflected in the market price of food compared with income (Andress and Fitch 2016, 152; “FAO” n.d.). Physical accessibility is the second component included in accessibility and examine the “geographic location of the food supply and ease of getting to that location” (Andress and Fitch 2016, 152). Fulfilling both of these components of food access is necessary for rural households to establish food security.

Economic Access

Economic access to food relates to the financial component of acquiring food. Of the Federal food and nutrition programs discussed four of the programs provide monetary assistance directly to consumer participants. These programs include SNAP and WIC where benefits are distributed once a month, typically at the beginning of the month on to an Electronic Benefit Transfer (EBT) Card. The Farmers Market Nutrition Programs for WIC and Seniors distribute monetary benefits in the form of vouchers. With all of these benefit distribution programs participants often plan their grocery shopping around when benefits are received (Andress and Fitch 2016, 153). These programs provide a monetary benefit to the participant at one point in time, then leave it up to the participant to distribute their benefits over a given course of time, be it a month, or the summer farmers market season.

Meanwhile, the remaining seven programs all provide free or reduced priced food to their participants. By providing free or reduced priced food to participants these programs allow participants to allocate their personal monetary resources to other needs. The Emergency Food Assistance Program (TEFAP), Commodity Supplemental Food Program (CSFP) and Food Distribution Program for Indian Reservations (FDPIR) provide food items at no cost to the participant. TEFAP and CSFP both distribute commodity food products to individuals in need of food assistance through state and local agencies. FDPIR utilizes similar eligibility calculations as SNAP, but rather than providing monetary benefits to participants to purchase their own food, provides participants with a box of commodity food items of their choosing each month.

The school programs, SBP and NSLP as well as the Child and Adult Care Food program have the same income eligibility requirements which are used to determine whether children can receive meals for free or instead at a reduced price. Income eligibility states that children from families at or below 130 percent of the federal poverty level can receive meals for free, while children from families between 130% and 185% of the federal poverty level are eligible for reduced priced meals (United States Department of Agriculture 2014, 2017d, 2017c). Schools cannot charge more than 30 cents for a reduced priced breakfast or more than 40 cents for a reduced priced lunch (United States Department of Agriculture 2017c, 2). Reduced prices and free meals at school and care sites enable families to be able to stretch food dollars further at home. Summer Food Service program began to ensure that children in lower income areas continued to receive nutritious meals during long school vacations (Boyle and Holben 2012, 345). Since the program operates primarily in low income areas, participants are not subject to providing income information. The only eligibility requirement that is monitored at meals sites is that participants receiving meals must be 18 years old or younger (United States Department of

Agriculture, n.d.). Reimbursements for the food distributed through these programs goes directly to the distributing agencies which eliminates the need for the qualified participating households to worry about exchanging money for the meals.

Physical Access

Physical access is less widely addressed by the programs evaluated. FDPIR as well as the school and summer food programs for children do the best of the programs to address physical access. FDPIR is specifically designed to address limitations faced by individuals living on Native American reservations, including lack of infrastructure and hard to reach locations. Paper applications are used for this program, that can be dropped off in a program office or at a distribution site because access to technology is limited for most participants (Pidus 2016). The products that are ordered are delivered once a month, and can be picked up by participants in a FDPIR warehouse, or at a drop off location called a “tailgate pick up”, and some households are eligible to receive deliveries directly to their homes because they lack access to the other sites (Pidus 2016). This increases physical access for households that are eligible to participate in the program because the program is designed to recognize that these households have specific access limitations to physically accessing food without these supports.

The National School Lunch Program (NSLP), the School Breakfast Program (SBP), Summer Food Service Program (SFSP) and the Child and Adult Care Food Program (CACFP) all provide food for children in locations that they already visit. By providing food at schools, care facilities or summer camps, these programs decrease the barrier of physical accessibility because the sites of distribution are the same places in which the benefit recipients already frequent. For the Summer Food Service Program, meals are sponsored by and distributed at schools, camps, and other community organizations, where the community believes the

participants are safe and supervised (United States Department of Agriculture, n.d.). Meanwhile, the purpose of the Child and Adult Care Food program is to improve the quality and affordability of day care for low income families by providing nutritious meals and snacks to children and adults who receive care in non-residential day care facilities (Boyle and Holben 2012, 345). These programs provide significant support to families who already have children or dependents in these locations by eliminating the need to access food from another location for children's meals.

4.1.3 Food Utilization

The United Nations outlines multiple criteria for how they understand food utilization. Food utilization refers to the consumers ability to process and cook the food available to them, the consumers ability to maintain healthy eating habits with the food they have, as well as the body's ability to use the nutrients from the food the individual eats ("FAO" n.d., 1). Through evaluation of the eleven programs designed to address food insecurity at a national level, it can be seen that a majority of the programs focus on introducing good nutrition into the diets of the program participants. In the description and goals of many of the programs, including FMNP, WIC, CSFP, the USDA FNS states that the program provides supplemental nutritious foods for people at nutritional risk, and the food packages are designed to address specific nutrient needs of the population benefitting from the program while increasing food security. Meanwhile, the component of utilization that considers an individual's ability to process their food is only included as a byproduct of the programs through educational components for participants that aim to increase household autonomy. SNAP-ed and the Expanded Food and Nutrition Education Program (EFNEP) are two programs that support food use education through funding from the USDA. These programs seek to engage low income households to provide nutrition education,

and lessons surrounding how to utilize the food available to them, including how to prepare low cost meals. Each of these programs is not a requirement of participation in the FNS food programs, but are designed in a way that targets these populations of people receiving benefits and offers educational support on recipes and cooking instructions that may be beneficial for these households.

4.1.4 Stability Over Time

Stability of physical availability, access and utilization over time is the final key component assessed by the United Nations for food security. Stability does not seem to currently exist as a priority for many of the federal food and nutrition programs nor is it actively addressed by them. Benefits for SNAP, WIC, FDPIR and the FMNP programs are distributed in a cyclical pattern, with a distribution point, then lag time to the next distribution in which the recipient has likely already expended all benefits. With at least a month between benefit distribution points and insufficient amounts of funds or goods distributed at each point to last a full month, food insecurity is perpetuated with this cycle. Households attempt to stretch their food but that may result in reduced consumption at points throughout the month. Households receiving benefits through these cyclical programming methods lack access to the same types of foods as higher income households at all points in the cycle. Additionally, SNAP presents limitations on how long able-bodied individuals are able to participate in the program, the limitation means that participants may be able to achieve stability while on the program, but then lose stability once they are no longer eligible to participate. USDA eligibility requirements for SNAP only allow able-bodied adults without children, or who do not work 20 or more hours a week, to receive SNAP benefits for a 3-month period with in 36 months (United States Department of Agriculture 2018c). This restriction limits stability and may significantly impact an individual's ability to

maintain a job, or adequate housing. Stability over time is a key component of food security according the UN, however, only the U.S. programs focused on school aged children including the NSLP, SBP and the SFSP actively attempt to address the need for stability over time. Meanwhile, the requirements of the other programs may actually detract from stability.

SNAP and WIC both utilize Electronic Benefit Transfer to distribute monetary benefits to their participants on a monthly basis. Utilizing EBT and cyclical distribution patterns for benefit distribution plays two very different roles in the role of SNAP as a food security initiative in the US. EBT works to make people more food secure by allowing them to use their benefits to purchase food items they want and swiping a card similar to a credit card decreasing the stigma associated with assistance programs. Together, EBT and the set pattern for distribution in each state allows participants to know exactly when their benefits are available to them and use them as soon as possible. While there is consistency of knowing which day a participant receives benefits, the quantity of the benefits may not be enough to sustain the household over the month duration until the next distribution. Cyclical distribution of benefits condensed to a once a month distribution provides households in need of assistance with a lump sum and the need to ration food or monetary resources to attempt to avoid the problem of the inconsistency of what resources are available to them throughout the month. Households are more food secure during the first few days or weeks following the time they receive their benefits, but they are far less likely to be able to maintain consistent or stability of food security over the course of the month until receiving their benefits again. Hamrick and Andrews (2016) studied the cyclical distribution pattern of SNAP benefits as it relates to food security and found that SNAP

households were 5.5 percent more likely to be food insecure during the last third of the month, and that usage of soup kitchens increased as the month progressed.

Strict income restrictions and work requirements can create greater instability for some households. Individuals who sit on the cusp of the income requirements are at great risk for fluctuating stability while they attempt to provide food for their household and continue to pay for medical, home and transportation expenses as well. Any increase in income may eliminate the household from being eligible for benefits, and put them in a worse-off situation. If a household were to receive an increase in income that puts their income outside of 130 percent of the poverty level they would lose access to food benefits, and may also lose other subsidies. Losing these benefits from a slightly increased income now puts them in a worse off situation where they must balance out their budget with less resources. Work requirements for SNAP can hinder individual's food security by not allowing an individual to quit or reduce their hours at a job, and requiring abled bodied individuals to work at least 20 hours a week if they wish to receive benefits for more than three months.

Each federal food and nutrition program provides resources to increase food security, either through monetary assistance or by providing commodity items. Despite the distribution of monetary and food benefits to eligible households in any part of the country, rural households still experience food insecurity at greater rates than their urban and suburban counter parts. The programs all provide some component of food access to their participants, but no program addresses all of the key components of food security set by the UN. By not addressing all of the key components within an individual program, it makes households reliant on multiple programs or alternative methods to attempt to maintain or achieve food security on any given day. Since rural households in the United States face additional barriers to food security, as compared to

other populations, this research will continue by reviewing how the federal food and nutrition programs address the key components of food security specifically related to rural households.

4.2. Results and Analysis for Research Question 2: Fulfilling the Key Components of Food Security for Rural Americans

Utilizing the key components of food security set by the United Nations as they are outlined in Chapter 2, this research will continue by evaluating how federal food and nutrition programs address the key components of food insecurity specifically for rural households. Since rural households face food insecurity at a higher rate, they experience additional barriers or the same barriers at an exacerbated rate to achieving food it is important to understand the extent to which these barriers are being addressed. These barriers for rural households include the physical availability of food stores in their area, monetary access and transportation. Much of the existing research focused on rural food insecurity and the barriers in which rural people face is provides anecdotal information from individuals living in rural areas of the United States.

4.2.1. Physical Availability

The concern over food supply availability as well as the availability of grocery stores, is something that is largely not addressed by the federal food and nutrition programs. Physical availability of food includes what foods are available at the food stores and at other distribution sites. Physical availability also includes whether or not food stores or distribution sites exist in the area in a location and with distribution hours that are feasible for consumers. Rural households have very limited availability of food distribution sites, and thus have adopted coping mechanisms to acquire food because the limitations of physical availability in their immediate area.

Rurality has the consequence of limiting access to programmatic supports provided by the Food and Nutrition Service. Supplemental Nutrition Assistance Program (SNAP) participants in rural areas may be increasingly affected by physical food availability because SNAP is less available in small rural community stores (Bardenhagen et al. 2017, 1014). The requirements for a store to participate as a SNAP retailer require the store owner to calculate the amount of revenue that comes from staple food products or have a continuous stock of a combination of FNS approved staple foods in a variety of different categories. Staple food products are defined by FNS as “basic foods that make up a significant portion of a person’s diet, usually prepared at home and eaten as a meal” (United States Department of Agriculture 2018a). These foods fall into four different categories: fruits and vegetables; meat, fish and poultry; dairy products; and breads or cereals (United States Department of Agriculture 2018a). Appendix C. provides the detailed process for which the USDA uses to calculate staple food sales and stock levels for retailers that wish to apply to be eligible retailers. The perception of how strict the requirements are for vendors and the application process may hinder small community retailers from applying to be an eligible vendor (Krysta Kellegrew et al. 2018). Many rural food stores lack the ability to stock highly perishable food items which make up a bulk of what is considered a staple food item because they do not have the proper storage containers to prevent spoilage, and may not sell perishable products at large enough volume to make a sufficient profit off them if they were to stock them currently.

The Emergency Food Assistance Program distributes commodity food items to individuals through foodbanks, pantries and soup kitchens, but there are often greater distances between these locations and the residents to people in rural areas as compared to urban populations. Participants in Bardenhagen et al.’s research pertaining to rural food access stated

that social service agencies are often further away than any one family could or would want to travel to get food. Furthermore, the Food Distribution Program for Indian Reservations is the only program that provides the opportunity for home delivery, or moves food from a centralized warehouse location to reach deeper into the areas of need, while also recognizing that store availability is limited for its participants. FDPIR is designed to support Native American reservations and acknowledges that these reservations are in rural and secluded locations, as such the program recognizes that availability of food on the reservation may be a significant barrier.

Physical availability of food, including the availability of grocery stores can be a burden to rural household. One reason that physical availability is a burden is because there are fewer grocery stores in regions compared to urban areas after controlling for population density (Bower et al. 2013, 35). In addition to fewer stores, larger retailers have begun consolidating to create supercenter retail stores in which is increasing the burden of availability on rural areas. Sharkey (Sharkey 2009) acknowledged that this consolidation is leading to fewer but larger stores and to increased distances for rural households to food stores. Increased transportation costs and lack of personal vehicles can result in rural households facing higher food prices as well as less variety and lower quality of fresh products when individuals need to shop in convenience stores or small markets rather than in supercenters in rural areas. These barriers of availability also create barriers to access.

4.2.2. Access

Physical availability of food affects individual's ability to access food as well. When food supplies are limited in the immediate area of a household, accessing food becomes an important and challenging aspect of food security as well. Access includes both physically and financially being able to gather the food a household needs. This section will continue by examining how

financial and physical access for rural households is influenced by the U.S. federal food and nutrition programs.

Economic Access

Rurality places a significant burden on the financials of a household while acquiring food beyond just their purchasing power for food. Benefit programs like SNAP and WIC which provide monetary benefits to participants for the sole purpose of purchasing food items. With WIC the money provided through benefits can only be spent on very specific items as well. If a household is able to qualify for and receive benefits, rural households can expend their benefit resources faster (Andress and Fitch 2016, 153) and at the same time they face the possibility that small local stores do not accept benefits. Meanwhile, the different shopping strategies that rural households utilize, like trip chaining, may mean that rural households use a majority of their benefits on one large trip each month, rather than spreading out their purchasing and spending overtime in an attempt to save money. Bulk purchasing results the purchase of more processed and less nutritious food, this ultimately can lead to the greater likelihood of an individual experiencing negative health outcomes such as diabetes or obesity, and can cost the individual a significant amount in the long term. Bulk spending rather than rationing out monetary benefits over a period of time, also increases the likelihood that the household runs out of food before the next benefit distribution date. It may be more challenging to control the use of food over time once it is present in the household than if it is purchased over time.

Even beyond the programs that provide monetary benefits, participation in programs that distribute free sources of food, may not be truly free for rural households. Rural households often must expend greater resources to obtain food through normal sources (Sharkey 2009, S152) this includes their personal financial resources in other regards. Participants in Bardenhagen et

al.'s study (2017) acknowledged that people would drive 20 miles to the nearest supercenter to save a dollar on a food product, but end up spending 15 dollars in gas. To be eligible for some of these programs participants may need to see a physician and be assessed as nutritionally at risk; depending on insurance these doctors' visits could be costly for a prospective participant. With the lack of public transportation, and significant distances between locations, rural households often need a personal transportation source to get to food distribution locations. Urban households have greater access to public transportation, sidewalks to travel by foot and often have grocery stores or food distribution sites in closer proximity to them than rural households, and do not necessarily need to expend personal resources on a vehicle to be able to acquire food. For a rural household, it may be very complicated to acquire food without a personal vehicle and as such the cost of the vehicle's maintenance and fuel may need to be considered in a rural household's pursuit of food security. Additionally, owning a personal vehicle, depending on its use and value, may affect an individual's ability to receive federal benefits or the amount that they receive, since personal vehicles are included in the calculation of assets to used determine eligibility.

The federal food and nutrition programs do not consider the limitations of economic access beyond adding to the household's ability to purchase food. Rural households already experience lower wages and higher unemployment than their urban counter parts and spend additional resources beyond the amount allotted through federal benefits on food access may create great financial stresses. There is no assistance provided to rural households to defray the cost of traveling to food stores or to social service agencies which is often a requirement for them to physically access food.

Physical Access

Physical access to food is an important component of food security as it relates to an individual's ability to access a means of transportation to food stores and to physically access food distribution centers. While there were many economic components of access discussed previously, transportation is also a physical access problem for rural households. A lack of transportation, regardless of economic assets may mean a lack of food for a rural household. Currently the federal food and nutrition programs in the United States do not make accommodations for a rural individual or households need and ability to physically access food. Unless those households are eligible participants in the Food Distribution Program on Indian Reservations (FDPIR). FDPIR is the only program that provides delivery services to participants and recognizes other limitations associated with living on a Native American reservation, which are typically similar to that of rural households. FDPIR also allows participants to complete paper applications and drop off applications at remote food distribution locations, rather than having to reach the physical office of a social services agency.

Physical access in terms of the federal food and nutrition programs also has a gap in support to rural households in regards to a participant's ability to access the social services agencies that distribute benefits in order to be able to apply and receive benefits. Johnson et al. (2014) acknowledge that transportation is needed to get to locations of food sales and in many cases it is necessary for individuals who wish to participate in assistance programs. If an individual is unable to reach the agency to apply and be evaluated for benefits they will never be eligible to receive benefits from the USDA. Both the Commodity Supplemental Food Program and The Emergency Food Assistance Program provide commodity food items, which must be distributed through social service agencies. If participants cannot reach the locations in which the

services or products are distributed their eligibility to participate will not be meaningful and they will not use the benefits that are available to them.

Physical infrastructure resources that would be considered as a strategy to increase access are often less available in rural areas. For rural households, the limitations of physical infrastructure including access to internet may be just as big of a barrier to participation in food programs as their inability to reach locations of social services agencies. Many programs have adjusted their applications and eligibility calculators to be an online process, which has broken down barriers for some, but may not be as useful to rural households because the internet is also less available in rural areas. The infrastructure for public transportation is also limited in rural areas. A 2010 report from Transportation for America acknowledged that 60 percent of rural counties had some form of public transportation, but for a majority of these services transportation was limited to travel within the town or county (Shoup and Homa 2010). If public transportation is necessary for individuals, including the elderly or disabled to access food stores, the limitations of transportation that does not service multiple towns or counties may be an additional barrier to accessing food stores as consolidation occurs. One research study in two rural Mississippi counties found that it was not abnormal for households to have to walk between 6 and 13 miles to a food store, but in these counties, public transportation is not available, and personal vehicle ownership is low (Hossfeld and Rico Mendez 2018). Rurality limits the availability of public transportation and also puts limitations on a person's ability to walk between destinations even if sidewalks were available because a person's physical limitations may not allow for this type of travel.

4.2.4. Food Utilization

Food utilization in regards to a household's ability to prepare their food is not largely addressed in the food and nutrition programs, but comes as a byproduct of some programs available to participants. Rural households are more likely to have less access to these programs because of their geographic isolation, but increasing participation by rural households in SNAP-Ed and the Expanded Food and Nutrition Education Program (EFNEP) may be a strategy in which federal programming could better support the food utilization factor of food security. SNAP-Ed and EFNEP are implemented by state land grant universities and other community organizations with funding for each program coming from the USDA. These programs teach low income households how to improve their diets, stretch their spending on food and handle food safely (United States Department of Agriculture n.d.), but classes are often located in densely populated areas where the programs are likely to draw more participants. These programs are more likely to target urban areas because greater participation numbers will make program grant reports appear more successful. Additionally, current funding models support programs that interact with a high number of people, and encourage programs that engage individuals in multiple sessions rather than one time interactions. These programmatic strategies create limitations that restrict the ability of programming to reach rural communities. In addition to lower numbers of potential participants in rural areas, rural households may also have barriers to reaching a program site multiple weeks in a row.

Food utilization is largely not a concern that is addressed in the federal food and nutrition programs at this time. To address food utilization as a barrier to food security for rural households, there would first need to be additional resources to address utilization within the federal food and nutrition programs. Once additional resources are directed into supporting food

utilization through the federal food and nutrition programs a more concerted effort can be made to address rural communities.

4.2.5. Stability over time

Stability of physical availability, access and utilization over time is the final key component assessed by the United Nations for food security. The coping strategies employed by rural individuals when facing food insecurity may be useful for limited periods, but are often episodic and may call for a need to modify their behavior in a way that does not provide consistent security. Rural households may be at a greater disadvantage with the labor and asset restrictions set by the USDA to participate in food and nutrition programming. In rural areas, jobs are less available, and the cost of getting to these jobs may be higher. Additionally, the wages for the available jobs may be so low that it does not make the job worth the cost of traveling to work. For many rural households, there is a greater likelihood that work is not available to an individual based on their location even if they are willing to work or the work options available may be seasonal in nature. For all households, but especially for rural communities where they may lack sufficient access additional support services, including food pantries and soup kitchens, a slight increase in income that makes participants ineligible for SNAP benefits may actually increase food insecurity. The job market in rural parts of the US is concentrated in low wage labor fields including agriculture and mining, typically paid out at an hourly rate. Depending on the other resources available to a household, a wage increase as simple as 5 cents an hour could put the household outside of the income and asset range at which they can receive benefits. While an increase in income sounds beneficial, losing benefits would make it necessary that the household navigate their spending with less resources while also not having a significantly greater income by which to pay their expenses.

Many of the food and nutrition programs operate through cyclical distribution patterns of benefits to program participants. Large monthly distributions at one point in time encourage large shopping trips at the beginning of the month which then results in households, especially rural households, purchasing large quantities of processed and nonperishable food items rather than fresh products. Purchasing only processed nonperishable foods can detract from the health of the household, and the larger community population. Regardless of the products purchased, once monthly shopping does not mean that products will last for the whole month, and households may still find themselves with food insecurity problems as the month progresses. Breaking distribution dates out to be biweekly, would increase the likelihood that households could maintain a more consistent food security status over the course of the month.

4.2.7. Analysis of Key Components of Food Security for rural households.

Based on the evaluation of the programs using the key components of food security as presented by the United Nations, the United States existing programs are not meeting all of these components. The federal food and nutrition programs offer participants access to monetary benefits or USDA commodity food products to increase food security and nutritional intake. However, these programs do not make accommodations to consider barriers of access and availability that may affect rural participants including distance of travel and modes of transportation. Through this data, it is clear that the primary focus of the U.S. Federal food and nutrition programs is to solely to provide food assistance, without considering barriers or causes of insecurity. Additionally, some programs fulfill portions of the key components, but very few if any fulfill all components and those that come close are not accessible to all populations and may be increasingly limited to rural populations. By not addressing all of the key components of food security through the federal food and nutrition programs the USDA is not ensuring that

food insecurity needs are being met for rural households. By not meeting all of the criteria with existing programs, greater challenges are presented to these households in trying to secure a stable food security status for themselves they were to no longer receive benefits.

Physical availability and accessibility are two of the major components that place a large burden on rural households. These two components are not being effectively addressed through the federal food and nutrition programs for rural households currently. Barriers to transportation as well as limited locations and resources to purchase food, and ease of access to food distribution and social services sites hinder rural households in attempts to secure food through conventional methods. A stronger emphasis on accessible locations as well as increased availability of food products and distribution centers for rural participants would increase food insecurity in rural areas alongside the monetary and food benefits. Eligibility for participation in any of the federal food and nutrition programs is not useful to a household's ability to be food secure if they cannot reasonably utilize the benefits that are distributed.

The USDA Food and Nutrition Service (FNS) as an agency states that it is working to reduce hunger and food insecurity for Americans. FNS also seeks to provide access to healthful food for participants in the programs. Alterations to FNS programming that address food availability including grocery market consolidation and limitations of small community stores in rural as well as alterations that consider barriers to access could provide greater food security for rural households. The Food Distribution Program on Indian Reservations, for example, most closely matches the needs of rural households and a review of this program as it exists and considerations of how the program could address greater reaches of rural America would be beneficial to the individuals who reside there and face food insecurity. Adjustments to

programming could better meet the needs of rural households and close the gaps that currently exist in this area.

4.3. Results and Analysis for Research Question 3: Improving rural food security

How could the federal government better address rural food insecurity in the United States? The data collected to answer research question one and research question two will provide the opportunity for analysis of existing programs to provide recommendations for adjustments to be made to better address rural food insecurity. Based on the federal food and nutrition programs and the key components of food security, it is evident that not all of the key components are currently addressed through these programs for rural households. As such, recommendations for adjustments to programs or creation of new alternative programs will be evaluated and presented in regard to each of the UN components of food security.

4.3.1. Physical Availability

Physical availability of food retailers and food distribution sites is a barrier for rural household's food security. Consolidation of retail stores by corporations is having a significant on the rural food environment. To address physical availability of food, the USDA could create restrictions to ensure that consolidation did not diminish availability in rural areas. At the same time, the programs would need to support small rural retailers to be able to participate in SNAP or WIC programming. Rural households face barriers of using their benefits at small retail sales sites in their communities, because vendors may not be eligible to accept benefits. Small rural vendors face many barriers to offering SNAP as a purchasing method because of the USDA certification process, incentivizing vendors to accept SNAP or WIC, could create greater availability for rural households. Leung et al. (2013) suggest that the USDA could incentivize small retailers to create greater access to healthful foods in stores and to accept benefits.

Incentivizing small retailers in rural areas could be especially beneficial in increasing retail grocery locations in the rural environment, and decreasing the distance in which rural households need to travel to acquire food. Leung et al. suggest that incentives could come to retailers from the USDA by providing refrigeration units and setting up wholesale deals with suppliers specifically for small rural businesses. Currently, the USDA requirements for a store to be an eligible vendor require the store to be able to consistently stock at least 36 staple food items, including at least one perishable food item from two of the staple food categories (United States Department of Agriculture 2018a). The alternative method of determining eligibility would be for the retailer to calculate their total gross retail sales and show that more than 50 percent of that total comes from staple food products (United States Department of Agriculture 2018a), which includes fruits and vegetables, animal protein sources, dairy products, and grains. This process can act as a barrier to small stores in any region from attempting to navigate the application and become SNAP eligible vendors. However, incentivizing rural stores to stock these products is especially important because there is a greater likelihood in rural food environments that small and mid-size retailers are the prominent food retail source for households, especially when travel capabilities are limited (Bardenhagen et al. 2017). Incentives for retailers from the USDA to encourage participation in being an eligible retailer by providing the necessary resources to stock USDA staple foods and perishable foods, would increase the number of small stores in rural areas that households could purchase more healthful, less processed foods from using benefits. Rural participants in the SNAP and WIC program would not have to travel as far to purchase food if this strategy was implemented.

4.3.2 Access

Transportation is one of the major barriers facing rural households. Not only do rural communities generally lack public transportation, but high costs of personal transportation, including fuel and maintenance for a personal vehicle are prohibitive. Initiatives for rural development could focus on putting together public transportation to shopping centers and encouraging businesses to establish themselves in locations that are readily accessible for their customers. The USDA could also support increased access to food stores through a program that defrays the cost of travel to food stores by providing stipends to individuals who must use personal transportation to access food stores. The stipends could be provided to participants based on a mapping of the food environment and a calculation of distance from an individual's home to a USDA benefit eligible food store.

Another strategy that could be utilized to reduce the barrier of transportation, would be to take the idea of mobile markets from urban areas and apply them to rural regions. Mobile markets bring food into areas where there are limited food markets available. Mobile markets would allow rural households to purchase more fresh foods in these rural areas just the same as urban regions use them. Urban areas have increasingly used mobile markets and food vendors to bring healthful foods into areas in which retail locations are limited. These mobile markets set up at places that households may already frequent, including doctors' offices and schools, which can help to decrease travel burdens for rural households. While the USDA does not currently operate a food and nutrition program that functions similar to a mobile market, there may be opportunity for a pilot program through the Rural Development and Rural Prosperity programs, working with existing retail businesses, to test the functionality of a mobile market program in rural settings.

The Food Distribution Program for Indian Reservations provides the opportunity for direct to home delivery of food products, or for the pick-up of products from a warehouse or remote site as needed by the household. But this program is limited only to Native American families or individuals living on or near reservations. Adopting methods similar to the distribution of FDPIR, but including more fresh and unprocessed goods in the distributed packages, would not be outside of the scope of the federal food and nutrition programs. The program recognizes that living on reservations has unique challenges because of their remote location. FDPIR as an existing program already addresses a lot of the limitations and barriers that need to be addressed for rural households. This includes the paper applications that recognize rurality comes with limited infrastructure including access to the internet. FDPIR also allows for delivery to houses, pick up at remote distribution locations, or pick up at a centralized warehouse. These different options for a rural household would allow the individuals to choose which option best meets their needs and lifestyle. Offering a similar method of product distribution to rural households beyond Native Americans could be a beneficial method of increasing food security for rural households. Because the USDA already operates a program of this nature, it is within their capabilities to adjust this program to include a wider range of participants or to create a new program that supports rural households in the same manner as Native American reservations. In the Rural Prosperity initiatives through the USDA, one of the goals is improving quality of life (United States Department of Agriculture 2017), while food access is not currently one of the approaches being considered, it would be advantageous for improving quality of life. Through the Rural Prosperity taskforce, and in coordination with the existing FNS FDPIR program, a review of program operation and expansion could be done to

understand feasibility of providing food to more regions in this manner. Direct delivery programs could increase food security while reducing transportation barriers for rural households.

4.3.3 Food Utilization

Food utilization is not largely a targeted portion of the current programs, as such a revision of the food utilization components of the USDA food and nutrition programs across all communities is necessary prior to specifically addressing rural households. However, expanded and sustained funding for these programs would allow for more classes to take place and could specifically target rural areas. Funding approaches that do not focus heavily on a “numbers” based approach, which encourages the educators to focus programming in areas with a greater population density would expand the reach of the educational programs to more rural communities. If these programs were able to target rural areas directly, programming could provide guidance in utilizing benefits and strategies for stretching benefits that are more directly relevant to rural households.

4.3.4 Stability over time

The federal food and nutrition programs discussed in this research provide monetary assistance, commodity food items or free and reduced priced meals to participants. Monetary distribution programs distribute a specified amount of money onto EBT cards during the first few days of the month. Leung et al. (2013) presents the idea of adjusting distribution timing, by changing to a biweekly distribution schedule rather than monthly on a national scale. Biweekly distribution would minimize or eliminate some of the cyclical patterns of food insecurity seen in individuals who utilize SNAP benefits. Research done by Hamrick and Andrews (2016), reviewed SNAP use nationally, and acknowledged that 59 percent of participants expended all of their benefits within the first half of the month. Participants who receive a lump sum of benefits

currently must be very conscious of their budget to distribute benefits across the month and often struggle, while this would still be necessary with biweekly distribution it is less severe. The USDA has full control over the distribution schedule, and making this adjustment may be a strategy to increase stability for rural households as well as urban households. This change would have an impact on all participants not just rural households and would likely require adjustments to how a household thinks and interacts with their food which could be a challenge. For rural households, this change may not be beneficial unless transportation barriers are also addressed. However, rural households with the modifications to transportation and food store availability discussed earlier, this change in benefit distribution cycles would support rural households be able to more evenly distribute their benefits across the month for food, with a greater likelihood that they could acquire fresh rather than processed products with their benefits.

4.3.5 Analysis

Eliminating the gaps and barriers faced by rural households in regards to accessing food and the other components of food security may be possible with the recommendations made through this research for adjustments to and creation of additional programs from the USDA to improve programming to address the specific needs of rural communities. Rural communities would benefit from not just monetary benefits for food, but from increased infrastructure for transportation, or for stipends for the use of personal transportation. Alternatively, programming that provided food distribution sites closer to the homes of rural individuals would provide greater access over all. Modification of the distribution patterns and timing for all benefit programs would help support stability in food security for rural households, regardless of the type of benefit, more frequent distributions rather than once a month would increase the likelihood of a household's ability to keep stable and consistent food security.

The Food Distribution Program on Indian Reservations already provides benefits to participants who experience very similar limitations as those living in rural areas, but is restricted to Native American households. Modifying this program in a way that allows it to reach other rural areas of the United States and service food insecure rural households would be a step towards solving the issues of rural food insecurity.

This research reviews US federal food and nutrition programs and evaluates how these programs address the key components of food security for rural households. This research shows that the current structure and implementation of these food and nutrition programs does not fully address all of the key components through any one program. Since rural households face alternative barriers to food security this review has identified gaps in programmatic coverage for rural households and allowed for the ability to provide suggestions for changes to increase the success of the food and nutrition programs for alleviating rural food insecurity. The results of this research indicate that there is opportunity to close gaps in programming to overcome the barriers to food security faced by rural households. By utilizing federal resources to address barriers to access and food availability as well as to provide additional resources to rural communities to acquire food, would increase food security in rural areas by making food more easily accessible to rural households.

4.4. Contribution

This research focuses on rural food insecurity in the United States to learn how federal food and nutrition programs address the problem and explore new or alternative ways to close the gaps between food insecurity and food security for rural households. By comparing the information gathered from the federal food and nutrition programs with the key components of food security this research acknowledges that rural residents would benefit from additional

services not currently provided through the federal food and nutrition programs. This research shows that there are gaps programming that supports food security and suggests opportunities to increase food security in rural households by adjusting the methods of food assistance programs that are available to rural participants. Adjusting distribution intervals to be more frequent for program benefits would increase stability of food security over time. This adjustment would decrease the period of time between each distribution date would mean households could not spend one large lump sum all at once, and instead would balance out benefits for use later in the month. This would contribute to food security for rural households because they would be at a lower risk of having a steep drop off in the amount of food available to them as the month progresses and would likely provide the ability for them to increase the amount of fresh food they acquire. At the same time, providing delivery services that decrease or eliminate the distance that rural households need to travel to acquire food may be the best strategy for increasing rural food security.

This research suggests ideas that could be used to better serve rural households facing food insecurity in the US through the federal food and nutrition programs. In order for the USDA Food and Nutrition Service to succeed in ending hunger and food insecurity, a shift in focus from broad policy meant to cover all households to policies and programs that target specific demographic needs is necessary. Rural households face unique barriers compared to other populations and to end hunger and food insecurity for this population will require a targeted effort by the USDA to make changes to programs in order to better address rural food insecurity.

Chapter Five

Conclusion:

This research shows that the federal food and nutrition programs currently do not address all of the key components of food security outlined by the United Nations, these components include: physical availability of food, economic and physical access to food, food utilization as well as stability of the other three components over time. It is important to recognize that food should be a basic human right and these criteria for food security are set to help individuals achieve that right. Rural households in the United States have barriers to achieving food security that are unique to the nature of living in rural areas, including isolation and limited infrastructure. Access is one of the major problems faced by rural populations that is not addressed in the current programs. Transportation to and from food distribution sites is one of the largest problems that rural households face in being able to meet their food needs. In order to increase accessibility, the USDA should support individual transportation options, including subsidies for personal transportation or increasing public transportation. Alternative to providing transportation solutions, food distribution sources should bring food closer to rural households. Strategies for creating greater accessibility for rural households in closer proximity to their home include incentivizing small rural stores to participate in benefit programs and mobile markets that bring food items into areas without stores, or food delivery programs.

This research has illustrated that there are particular barriers faced by rural households to achieving food security and provides recommendations for ways to improve food security by addressing these barriers. This research has shown that there is opportunity to change programming and provided suggestions for changes that are within the scope of the federal government to address rural food insecurity. Much of the existing research focuses on anecdotal

information from personal experiences with food insecurity in rural communities which has resulted in much of this research providing speculative information on how to better serve rural populations. The limitations of anecdotal data make it challenging to know if the conclusions and recommendations made are based in sufficient evidence to make programmatic changes. Future research should aim to collect more precise information through quantitative data that would be more useful to make specific recommendations for changes to federal programming that would increase rural food insecurity. Future work focused on addressing rural food insecurity should seek to develop transportation infrastructure, provide additional stipends to households requiring funding for personal transportation and examine the validity and efficiency of programs that bring food closer to those in need, rather than having them travel independently. A study of the Food Distribution Program on Indian Reservations (FDPIR) program and a pilot expansion of the program to reach rural regions off reservations that struggle with the same food access problems cited in FDPIR would be useful to acknowledge if a similar program would be beneficial for rural households.

In order to better support rural communities and enact social change to achieve social justice for the members of the rural communities that experience food insecurity adjustments to food security initiatives need to be made, which may be possible through FNS programming. Making adjustments to the existing federal food and nutrition programs to better support rural households in need of food assistance can improve the health and well-being of rural residents. Food insecurity affects the health of not just the individuals experiencing the problem but of the entire US population. Food insecurity also negatively effects the ways in which individuals interact with society, by striving to improve food security initiatives and creating increased food

security for rural households, households will be better able to attain education, sustain employment and meet their personal needs.

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Appendix

Appendix A.

U.S. HOUSEHOLD FOOD SECURITY SURVEY MODULE: THREE-STAGE DESIGN, WITH SCREENERS Economic Research Service, USDA September 2012

Revision Notes: The food security questions are essentially unchanged from those in the original module first implemented in 1995 and described previously in this document.

September 2012:

- Corrected skip specifications in AD5
- Added coding specifications for “How many days” for 30-day version of AD1a and AD5a.

July 2008:

- Wording of resource constraint in AD2 was corrected to, “...because there wasn’t enough money for food” to be consistent with the intention of the September 2006 revision.
- Corrected errors in “Coding Responses” Section

September 2006:

- Minor changes were introduced to standardize wording of the resource constraint in most questions to read, “...because there wasn't enough money for food.”
- Question order was changed to group the child-referenced questions following the household- and adult-referenced questions. The Committee on National Statistics panel that reviewed the food security measurement methods in 2004-06 recommended this change to reduce cognitive burden on respondents. Conforming changes in screening specifications were also made. NOTE: Question numbers were revised to reflect the new question order.
- Follow up questions to the food sufficiency question (HH1) that were included in earlier versions of the module have been omitted.
- User notes following the questionnaire have been revised to be consistent with current practice and with new labels for ranges of food security and food insecurity introduced by USDA in 2006.

Transition into Module (administered to all households):

These next questions are about the food eaten in your household in the last 12 months, since (current month) of last year and whether you were able to afford the food you need.

Optional USDA Food Sufficiency Question/Screeners: Question HH1 (This question is optional. It is not used to calculate any of the food security scales. It may be used in conjunction with income as a preliminary screener to reduce respondent burden for high income households).

HH1. [IF ONE PERSON IN HOUSEHOLD, USE "I" IN PARENTHETICALS, OTHERWISE, USE "WE."]

Which of these statements best describes the food eaten in your household in the last 12 months: —enough of the kinds of food (I/we) want to eat; —enough, but not always the kinds of food (I/we) want; —sometimes not enough to eat; or, —often not enough to eat?

- [1] Enough of the kinds of food we want to eat
- [2] Enough but not always the kinds of food we want
- [3] Sometimes not enough to eat
- [4] Often not enough to eat
- [] DK or Refused

Household Stage 1: Questions HH2-HH4 (asked of all households; begin scale items).

[IF SINGLE ADULT IN HOUSEHOLD, USE "I," "MY," AND "YOU" IN PARENTHETICALS; OTHERWISE, USE "WE," "OUR," AND "YOUR HOUSEHOLD."]

HH2. Now I'm going to read you several statements that people have made about their food situation. For these statements, please tell me whether the statement was often true, sometimes true, or never true for (you/your household) in the last 12 months—that is, since last (name of current month).

The first statement is "(I/We) worried whether (my/our) food would run out before (I/we) got money to buy more." Was that often true, sometimes true, or never true for (you/your household) in the last 12 months?

- [] Often true
- [] Sometimes true
- [] Never true
- [] DK or Refused

HH3. "The food that (I/we) bought just didn't last, and (I/we) didn't have money to get more." Was that often, sometimes, or never true for (you/your household) in the last 12 months?

- [] Often true
- [] Sometimes true
- [] Never true
- [] DK or Refused

HH4. "(I/we) couldn't afford to eat balanced meals." Was that often, sometimes, or never true for (you/your household) in the last 12 months?

- [] Often true

- ☐ Sometimes true
- ☐ Never true
- ☐ DK or Refused

Screener for Stage 2 Adult-Referenced Questions: If affirmative response (i.e., "often true" or "sometimes true") to one or more of Questions HH2-HH4, OR, response [3] or [4] to question HH1 (if administered), then continue to ***Adult Stage 2***; otherwise, if children under age 18 are present in the household, skip to ***Child Stage 1***, otherwise skip to ***End of Food Security Module***.

NOTE: In a sample similar to that of the general U.S. population, about 20 percent of households (45 percent of households with incomes less than 185 percent of poverty line) will pass this screen and continue to Adult Stage 2.

Adult Stage 2: Questions AD1-AD4 (asked of households passing the screener for Stage 2 adult-referenced questions).

AD1. In the last 12 months, since last (name of current month), did (you/you or other adults in your household) ever cut the size of your meals or skip meals because there wasn't enough money for food?

- ☐ Yes
- ☐ No (Skip AD1a)
- ☐ DK (Skip AD1a)

AD1a. [IF YES ABOVE, ASK] How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?

- ☐ Almost every month
- ☐ Some months but not every month
- ☐ Only 1 or 2 months
- ☐ DK

AD2. In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money for food?

- ☐ Yes
- ☐ No
- ☐ DK

AD3. In the last 12 months, were you every hungry but didn't eat because there wasn't enough money for food?

- ☐ Yes
- ☐ No

☐ DK

AD4. In the last 12 months, did you lose weight because there wasn't enough money for food?

☐ Yes

☐ No

☐ DK

Screeners for Stage 3 Adult-Referenced Questions: If affirmative response to one or more of questions AD1 through AD4, then continue to *Adult Stage 3*; otherwise, if children under age 18 are present in the household, skip to *Child Stage 1*, otherwise skip to *End of Food Security Module*.

NOTE: In a sample similar to that of the general U.S. population, about 8 percent of households (20 percent of households with incomes less than 185 percent of poverty line) will pass this screen and continue to Adult Stage 3.

Adult Stage 3: Questions AD5-AD5a (asked of households passing screener for Stage 3 adult-referenced questions).

AD5. In the last 12 months, did (you/you or other adults in your household) ever not eat for a whole day because there wasn't enough money for food?

☐ Yes

☐ No (Skip AD5a)

☐ DK (Skip AD5a)

AD5a. [IF YES ABOVE, ASK] How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?

☐ Almost every month

☐ Some months but not every month

☐ Only 1 or 2 months

☐ DK

Child Stage 1: Questions CH1-CH3 (Transitions and questions CH1 and CH2 are administered to all households with children under age 18) Households with no child under age 18, skip to ***End of Food Security Module***.

SELECT APPROPRIATE FILLS DEPENDING ON NUMBER OF ADULTS AND NUMBER OF CHILDREN IN THE HOUSEHOLD.

Transition into Child-Referenced Questions:

Now I'm going to read you several statements that people have made about the food situation of their children. For these statements, please tell me whether the statement was OFTEN true, SOMETIMES true, or NEVER true in the last 12 months for (your child/children living in the household who are under 18 years old).

CH1. "(I/we) relied on only a few kinds of low-cost food to feed (my/our) child/the children) because (I was/we were) running out of money to buy food." Was that often, sometimes, or never true for (you/your household) in the last 12 months?

- ☐ Often true
- ☐ Sometimes true
- ☐ Never true
- ☐ DK or Refused

CH2. "(I/We) couldn't feed (my/our) child/the children) a balanced meal, because (I/we) couldn't afford that." Was that often, sometimes, or never true for (you/your household) in the last 12 months?

- ☐ Often true
- ☐ Sometimes true
- ☐ Never true
- ☐ DK or Refused

CH3. "(My/Our child was/The children were) not eating enough because (I/we) just couldn't afford enough food." Was that often, sometimes, or never true for (you/your household) in the last 12 months?

- ☐ Often true
- ☐ Sometimes true
- ☐ Never true
- ☐ DK or Refused

Screeners for Stage 2 Child Referenced Questions: If affirmative response (i.e., "often true" or "sometimes true") to one or more of questions CH1-CH3, then continue to ***Child Stage 2***; otherwise skip to ***End of Food Security Module***.

NOTE: In a sample similar to that of the general U.S. population, about 16 percent of households with children (35 percent of households with children with incomes less than 185 percent of poverty line) will pass this screen and continue to Child Stage 2.

Child Stage 2: Questions CH4-CH7 (asked of households passing the screener for stage 2 child-referenced questions).

NOTE: In Current Population Survey Food Security Supplements, question CH6 precedes question CH5.

CH4. In the last 12 months, since (current month) of last year, did you ever cut the size of (your child's/any of the children's) meals because there wasn't enough money for food?

- ☐ Yes
- ☐ No
- ☐ DK

CH5. In the last 12 months, did (CHILD'S NAME/any of the children) ever skip meals because there wasn't enough money for food?

- ☐ Yes
- ☐ No (Skip CH5a)
- ☐ DK (Skip CH5a)

CH5a. [IF YES ABOVE ASK] How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?

- ☐ Almost every month
- ☐ Some months but not every month
- ☐ Only 1 or 2 months
- ☐ DK

CH6. In the last 12 months, (was your child/were the children) ever hungry but you just couldn't afford more food?

- ☐ Yes
- ☐ No
- ☐ DK

CH7. In the last 12 months, did (your child/any of the children) ever not eat for a whole day because there wasn't enough money for food?

- ☐ Yes
- ☐ No
- ☐ DK

END OF FOOD SECURITY MODULE

User Notes

(1) Coding Responses and Assessing Household Food Security Status:

Following is a brief overview of how to code responses and assess household food security status based on various standard scales. For detailed information on these procedures, refer to the *Guide to Measuring Household Food Security, Revised 2000*, and *Measuring Children's Food Security in U.S. Households, 1995-1999*. Both publications are available through the ERS Food Security in the United States Briefing Room.

Responses of “yes,” “often,” “sometimes,” “almost every month,” and “some months but not every month” are coded as affirmative. The sum of affirmative responses to a specified set of items is referred to as the household’s raw score on the scale comprising those items.

- Questions HH2 through CH7 comprise the U.S. Household Food Security Scale (questions HH2 through AD5a for households with no child present). Specification of food security status depends on raw score and whether there are children in the household (i.e., whether responses to child-referenced questions are included in the raw score).
 - For households with one or more children:
 - Raw score zero—High food security
 - Raw score 1-2—Marginal food security
 - Raw score 3-7—Low food security
 - Raw score 8-18—Very low food security
 - For households with no child present:
 - Raw score zero—High food security
 - Raw score 1-2—Marginal food security
 - Raw score 3-5—Low food security
 - Raw score 6-10—Very low food security

Households with high or marginal food security are classified as food secure. Those with low or very low food security are classified as food insecure.

- Questions HH2 through AD5a comprise the U.S. Adult Food Security Scale.
 - Raw score zero—High food security among adults
 - Raw score 1-2—Marginal food security among adults
 - Raw score 3-5—Low food security among adults
 - Raw score 6-10—Very low food security among adults
- Questions HH3 through AD3 comprise the six-item Short Module from which the Six-Item Food Security Scale can be calculated.
 - Raw score 0-1—High or marginal food security (raw score 1 may be considered marginal food security, but a large proportion of households that would be measured as having marginal food security using the household or adult scale will have raw score zero on the six-item scale)
 - Raw score 2-4—Low food security
 - Raw score 5-6—Very low food security

- Questions CH1 through CH7 comprise the U.S. Children’s Food Security Scale.
 - Raw score 0-1—High or marginal food security among children (raw score 1 may be considered marginal food security, but it is not certain that all households with raw score zero have high food security among children because the scale does not include an assessment of the anxiety component of food insecurity)
 - Raw score 2-4—Low food security among children
 - Raw score 5-8—Very low food security among children

(2) Response Options: For interviewer-administered surveys, DK (“don’t know”) and “Refused” are blind responses—that is, they are not presented as response options, but marked if volunteered. For self-administered surveys, “don’t know” is presented as a response option.

(3) Screening: The two levels of screening for adult-referenced questions and one level for child-referenced questions are provided for surveys in which it is considered important to reduce respondent burden. In pilot surveys intended to validate the module in a new cultural, linguistic, or survey context, screening should be avoided if possible and all questions should be administered to all respondents.

To further reduce burden for higher income respondents, a preliminary screener may be constructed using question HH1 along with a household income measure. Households with income above twice the poverty threshold, AND who respond <1> to question HH1 may be skipped to the end of the module and classified as food secure. Use of this preliminary screener reduces total burden in a survey with many higher-income households, and the cost, in terms of accuracy in identifying food-insecure households, is not great. However, research has shown that a small proportion of the higher income households screened out by this procedure will register food insecurity if administered the full module. If question HH1 is not needed for research purposes, a preferred strategy is to omit HH1 and administer Adult Stage 1 of the module to all households and Child Stage 1 of the module to all households with children.

(4) 30-Day Reference Period: The questionnaire items may be modified to a 30-day reference period by changing the “last 12-month” references to “last 30 days.” In this case, items AD1a, AD5a, and CH5a must be changed to read as follows:

AD1a/AD5a/CH5a [IF YES ABOVE, ASK] In the last 30 days, how many days did this happen?

_____ days

[] DK

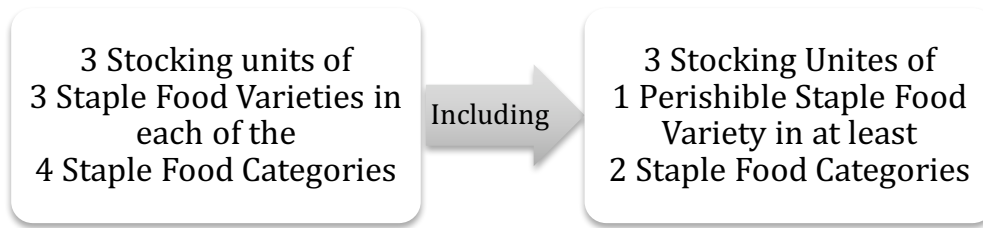
Responses of 3 days or more are coded as “affirmative” responses.

Appendix B.

Program Name	Program Abbreviation	Year Established	State level Operation	Approximate Yearly Monetary Appropriations	Approximate Annual Participation
Supplemental Nutrition Assistance Program	SNAP	1961	Department of Social Services	\$63 Billion	42 Million individuals
Supplemental Nutrition Assistance Program for Women, Infant and Children	WIC	1974	State agencies, health clinics, Tribal organizations		7.3 Million individuals including 3.76 million children and 1.79 million infants
The Emergency Food Assistance Program	TEFAP	1981	State and local emergency food providers	\$375.4 Million, \$316 for food purchase, \$59.4 for administrative support	
Commodity Supplemental Food Program	CSFP	1969	State agencies, including Dept. of Public Health, and Dept. of Social Services	\$238.10 million	630,000 individuals
Child and Adult Care Food Program	CACFP	1968	Public and non profit private schools, Private residential care facilities		3 Million children and 120,000 adults

National School Lunch Program	NSLP	1946	Public and non profit private schools		31.8 Million students
School Breakfast Program	SBP	1966	Public and non profit private schools		
Summer Food Service Program	SFSP	1968	Schools, summer camps, and community organizations		
Food Distribution Program for Indian Reservations	FDPIR	1976	Tribal organizations and state agencies	\$151 million	90,083 individuals
WIC Farmers' Market Nutrition Program	WIC FMNP	1992	State agencies, health clinics, Tribal organizations	\$18.548 million	1.7 million individuals
Senior Farmers' Market Nutrition Program	SFMNP	2001	Social services and housing agencies	\$29.178 million	811,809 million individuals

Appendix C.



Criterion A Requirements for Vendor Participation (United States Department of Agriculture 2018a)



Criterion B Calculation and Requirements (United States Department of Agriculture 2018a)