

HEALTH EQUITY SERIES:
FOOD INSECURITY

DECEMBER 2015



a catalyst for change



Missouri Foundation
for **Health**

HEALTH EQUITY SERIES:

FOOD INSECURITY

DECEMBER 2015

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Missouri Foundation for Health is a resource for the region, working with communities and nonprofits to generate and accelerate positive changes in health. As a catalyst for change, the Foundation improves the health of Missourians through partnership, experience, knowledge and funding.

The Health Policy portfolio complements the Foundation's grantmaking efforts to address health issues from a systemic perspective. Health Policy supports education, advocacy and analysis on issues significant to the health of uninsured, underinsured and underserved Missourians.

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WHAT IS

HEALTH EQUITY



INTRODUCTION TO HEALTH EQUITY

Health equity should not be confused with health equality. Health equality is the differences and disparities in health achievements of individuals and groups, whereas health equity is when everyone has a fair opportunity to realize their full health potential.¹

In contrast, health disparities tend to focus on the differences in health outcomes between population groups.² There are various definitions for health disparities and the terminology has evolved. The first official definition was developed by the National Institute of Health in 1999 and was defined as “the differences in incidence, prevalence, burden of diseases and other adverse health conditions that exist among specific population groups in the United States.”³

Similar definitions acknowledge that health disparities are directly linked to disproportionate distributions of

resources that often result in poverty and poor health outcomes. There are additional definitions with small adaptations, acknowledging that health inequities often include factors such as race and ethnicity, gender, education, income, disability, geographic location, gender identification or sexual orientation.¹

In order to address health equity, it is important to acknowledge the factors that create inequitable health outcomes, such as socioeconomic factors and other inequalities related to race and gender. Although individual responsibility and personal health behaviors have an impact on health outcomes, understanding how the social determinants of health (e.g., education, housing, employment, transportation) play a significant role in both health behaviors and health outcomes is important when attempting to achieve health equity for all Missourians.

For the purpose of this report, health equity will be discussed through the examination of Missouri’s food system, including how social determinants of health impact food security and food access, as well as the connection between disparities in health outcomes and an inequitable food system.

BACKGROUND ON FOOD INSECURITY

WHAT IS FOOD SECURITY?

There are four basic necessities in life: air, shelter, water and food. Food is not only necessary to function both physically and socially, but also plays an important economic role in society. Living with little or no food is a form of deprivation that impacts one's health and well-being.⁴

Currently, there are two widely accepted definitions of food security that come from the United States

Department of Agriculture (USDA) and the United Nations Food and Agriculture Organization (FAO). The USDA defines food security as “access by all people at all times to enough food for an active, healthy life.”⁵ Whereas, the FAO defines food security as a situation that “exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.”^{6, 7, 8}

According to the USDA, the four levels of food security are: high food security (formerly known as food security), marginal food security, low food security and very low food security.⁵

FOOD SECURITY

High food security: no reported indications of food-access problems or limitations

Marginal food security: one or two reported indications—typically of anxiety over food sufficiency or shortage of food in the house. Little or no indication of changes in diets or food intake

FOOD INSECURITY

Low food security: reports of reduced quality, variety, or desirability of diet. Little or no indication of reduced food intake

Very low food security: Reports of multiple indications of disrupted eating patterns and reduced food intake

Source: United States Department of Agriculture, Economic Research Services, 2014

HISTORY OF MEASURING FOOD INSECURITY

The term food insecurity was first introduced in the early 1970s as a result of the need to address a food crisis. People were concerned about how a shortage in the global food supply could threaten political stability.⁷ The increasing amount of hunger in the 1980s prompted then President Ronald Reagan to develop a task force in an effort to find ways to assess the scale of hunger and determine methods that would help improve food assistance programs. The task force found a lack of data regarding hunger and realized there was a strong need for a reliable standard measurement tool that would define poverty-related hunger.⁷ In response, Congress passed the National Nutrition Monitoring and Related Research Act in 1990, which initiated the development of food security measures for the U.S. population.⁹

In 1996, the federal government chose the United States Census Bureau to administer the Current Population Survey, a national annual review that would measure food security.⁹ The data were analyzed by the USDA's Economic Research Service to provide annual population estimates of prevalence rates and household food security levels.¹⁰



The survey was later modified and became the Core Food Security Module, also known as the Household Food Security Survey Module, which provides a set of 18 questions for households with children and a set of 10 questions for households without children.^{8, 11, 12}

Examples of the questions asked on the survey include:

- “I worry about whether our food would run out before we got money to buy more.”
- “In the last 12 months, did you or the other adults in your household ever cut the size of your meals or skip meals because there wasn’t enough money for food?”
- “In the last 12 months, were you ever hungry but did not eat because you could not afford enough food?”
- “In the last 12 months, did a child in the household ever not eat for a full day because you could not afford enough food?”¹²

If three or more questions were answered in the affirmative, the individual or household was considered food insecure. If six or more questions were answered in the affirmative, the individual or household was considered very low food secure.^{8, 12-14}

FOOD SECURITY PREVALENCE IN THE UNITED STATES

An objective of Healthy People 2010 was to reduce the national prevalence of food insecurity to 6 percent of households.¹⁵ Despite strong economic conditions during some of the years from 2001 – 2010, food insecurity prevalence rates never dropped below 10 percent.¹²

Additionally, the USDA’s Food and Nutrition Services set goals to reduce the prevalence of food insecurity for households with incomes below 130 percent of the federal poverty line (FPL).¹⁶ Food insecurity rates remained relatively steady from 2001 – 2007 at approximately 12 percent, with very low food insecurity rates ranging from 3 to 4 percent.^{11, 12} In 2008, food insecurity rates increased nearly 35 percent (from 12.2% to 16.4%) and very low food insecurity rates increased nearly 50 percent (from 4% to 5.8%).^{11, 12}

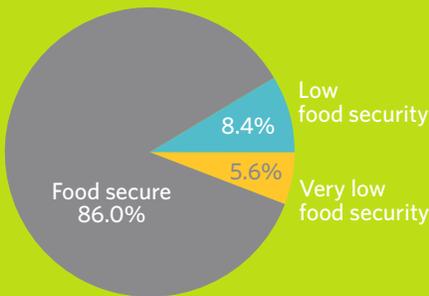
In addition, the proportion of children living in food insecure households rose more than 30 percent, with an increase of greater than 60 percent in the number of very low food secure children.¹² Increases in

Prevalence Trends of Food Insecurity and Very Low Food Security in U.S. Households, 2000 - 2013

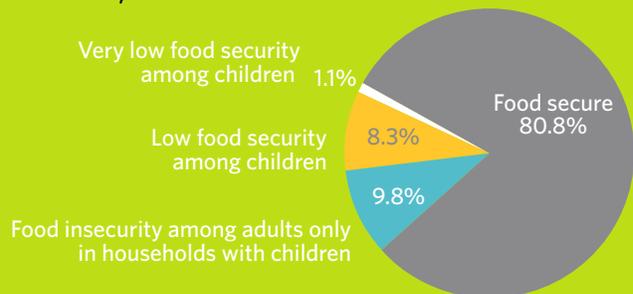


Source: USDA, Economic Research Service, Current Population Survey Food Security Supplement Data, 2014

U.S. Households by Food Security Status, 2014

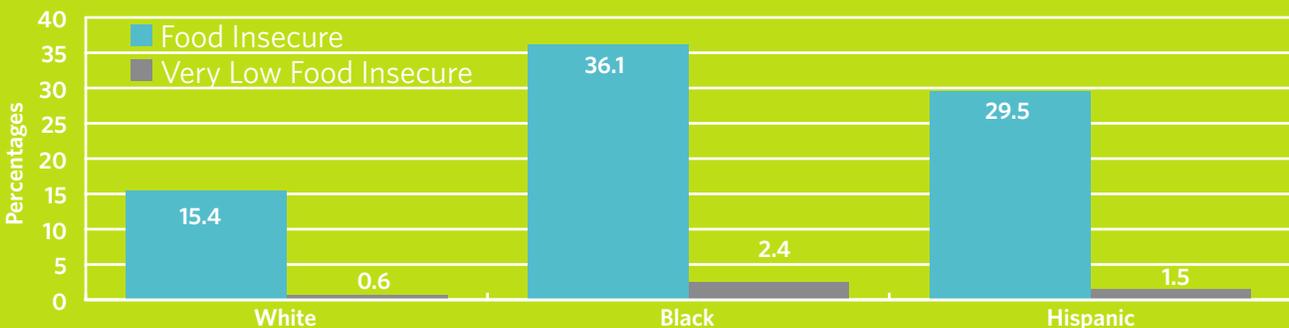


Households With Children by Food Security Status of Adults and Children, 2014



Source: USDA, Economic Research Service using data from the December 2014 Current Population Survey Food Security Supplement.

Percentage of U.S. Children 0 - 17 in Food Insecure Households by Race and Hispanic Origin, 2013



Source: Child Trends Data Bank, 2013

the rates of food insecurity were reflective of the economic downturn that occurred between 2007 and 2009.¹¹ In 2012, more than one in seven households in the United States were food insecure at some point during the year.¹⁴

According to 2013 national estimates, 49.1 million households in the United States (14% or 1 in 6 people) were considered food insecure, meaning they were either hungry or faced hunger at some point during this time. These estimates include 33.3 million adults and 15.8 million children (1 in 5). In addition to these data, eight states (including Missouri) had rates that were significantly higher than the national average.¹⁷

Nearly 6 percent (6.8 million) of households in the U.S. experienced very low food security, while 360,000 households with children under age 18 were classified as having very low food security.⁵ Despite the end of the recession, food insecurity rates have yet to return to 2007 levels.¹²

COMPONENTS OF FOOD SECURITY

In 1996, the FAO distinguished three components of food security: availability, access and utilization.^{7,18} The availability of food refers to sufficient quantities of food available on a consistent basis, whereas access to food refers to when people have sufficient resources to obtain food for a nutritious diet.¹⁹ For example, though the United States produces plenty of food, not all populations have equal access to the food that is produced. Utilization of food refers to the amount and kind of foods people consume within their households, as well as appropriate use based on knowledge of basic nutrition.^{7,19}

FOOD ACCESS

FOOD SYSTEMS

Before discussing what food access is and its impact on one's health, it is important to first understand

the food system, including how it works and how it contributes to food access and food security. Food systems emerged in the 1970s and have evolved to explain the relationships between inputs and outputs that involve all of the processes related to food: production, process, distribution, access, consumption and waste management.²⁰ In this way, the multitude of issues within our food system (e.g., diet-related chronic conditions, food marketing, food safety, food prices, greenhouse gas emissions, wages and support for farmers and food service employees) are all connected.

United States agricultural policies play a large role in the production of foods that contribute to poor health outcomes. Corporate farms obtain the greatest amount of subsidies today, leading to an increase in the production of commodity crops (e.g., corn, soybeans, wheat, rice, sugar, tobacco and cotton). Corn, soybeans and sugar, which are heavily used in processed and fast food products, have a significant impact on low-income, minority communities and the burden of disease within these communities. Conversely, subsidizing commodity crops results in a severe reduction of the number of fruits and vegetables grown due to these crops' ineligibility for government subsidies. Meanwhile, many smaller (and often family-owned) farms had total family income below the federal poverty level,²¹ leaving some to abandon their work and land.²²

In many ways, the food system promotes the oppression of minority groups through a variety of barriers, including a lack of land ownership and lending practices for minority farmers, poor working conditions and wage discrimination for minority farmers and a lack of access to healthy food in neighborhoods of color. Moreover, structural racism (a system of societal structures that work interactively to distribute generational and historic advantages to groups of people based on race and that produces cumulative race-based inequalities) is seen in our food system through housing discrimination,

employment and redlining (a discriminatory practice by which financial and insurance institutions refuse or limit loans, mortgages, insurance, etc., within specific geographic areas, especially inner-city, minority neighborhoods). This is important to note because these practices affect opportunities for minorities to have access to healthy foods that would reduce the prevalence of adverse health conditions in their communities.

Agriculture and the food system have long been an issue of inequity. Discriminatory practices led to loss of land and economic wealth because land ownership was one of the best ways to acquire wealth.²³ When minority populations have unequal access to land when working in the field of agriculture, disparities within our food system are the result. Wealth-building opportunities are often replaced by low-wage jobs that force families to eat the food they can afford. According to the 2012 Census of Agriculture, women farmers made up 30 percent of the total number of farmers, operating only 7 percent of the land for farming and accounting for 3 percent of sales.²⁴ Meanwhile in 2012, Hispanic farmers made up 3 percent of U.S. farmers, while African-American farmers made up only 1.4 percent. Between 1920 and 1993, there was a 96 percent decline in African-American farmland ownership. According to a USDA report, discriminatory lending practices were noted as one of the key reason for this rapid decline of African-American farmers.²⁵

WHAT IS FOOD ACCESS?

Having access to food means having access to a variety of affordable, high-quality foods within one's community. The availability of healthy foods is determined and reinforced by policy and action throughout our food system. In terms of food production, the 2006 USDA Economic Research Service report showed there was not enough domestically produced fruits and vegetables to

meet the recommended 2005 dietary guidelines. The report concluded that U.S. agriculture would have to harvest 7.4 million acres of cropland per year, a 1.7 percent increase of total U.S. cropland in 2002.²⁶ As noted earlier, agricultural policies dictate the crops that will receive direct farm subsidies, subsequently determining which food products will be made available to consumers. The results are an overabundance of convenient, processed foods that can withstand traveling far distances and have a long shelf life.²⁷

Other inequities within the food system directly affecting food access are policies related to land use and zoning, which have been known to impact opportunities for food production on both public and private land. Local government land-use regulations (i.e., either preventing or allowing the building of supermarkets or fast food restaurants in any given location)²⁸ effectively separated sub-groups according to income, race and ethnicity and caused many affluent, Caucasian residents to relocate from urban to suburban neighborhoods. Meanwhile businesses, including food retail establishments, followed these affluent residents, leaving many urban neighborhoods devoid of food retailers.²⁹

HEALTH FACTORS OF FOOD SECURITY

NUTRITION

The USDA Dietary Guidelines for Americans is a system that encourages a healthy diet and promotes the maintenance of a healthy weight and good overall health.²⁸ An advisory committee composed of experts in the field of nutrition and health are responsible for putting forth new guidelines based on current scientific data. The USDA Guidelines for Americans was first released in 1980 and continues to be released every five years.³⁰ The 2010 Dietary Guidelines for

SPOTLIGHT ON CENTRAL MISSOURI

Americans focuses on the consumption of fruits and vegetables, low-fat dairy and whole grains.⁶

A host of chronic conditions can be prevented with a healthy diet. In addition to prevention, a healthful diet can also help manage certain health conditions. Those who are food insecure lack the nutrients necessary for disease prevention and health promotion. Studies have shown an association between inadequate fruits, vegetables and other micronutrient intake and household food insecurity, especially for women and the elderly.³¹

STRESS

High levels of stress due to financial hardships and/or job-related pressure can also have an affect on obesity. Unmanaged stress can trigger anxiety and depression, causing cycles of food deprivation and overeating. These unhealthy patterns of eating have a metabolic effect that can lead to excess weight gain and obesity.³² Additionally, smoking is associated with food insecurity and is typically triggered by a stressful event.¹⁵ One study found a higher smoking prevalence among low-income food insecure families (43.6%) compared to low-income food secure families (31.9%).³³

CLINICAL

Many low-income people lack access to basic health care which prevents them from getting the proper screening, diagnosis and treatment for malnutrition and diet-related health conditions.³² Health care professionals play a vital role in discussing the importance of nutrition for leading a healthy and productive life and preventing adverse health conditions. A disproportionate number of food insecure communities are comprised primarily of people of color; therefore, cultural competency is also necessary to effectively provide appropriate guidance and resources to individuals in these communities.



TERRY ATTEBERRY AND MICHELE GRISWOLD ELDON SCHOOL/COMMUNITY

Terry Atteberry (school coordinator) and Michele Griswold (community coordinator) are collaborative partners for MFH's Childhood Obesity initiative, Healthy Schools Healthy Communities. Their target area is Eldon, Missouri, located in Miller County.

What broader opportunities exist to improve food access and insecurity?

"We have an afterschool program that provides dinner. It's a huge program. At school, they eat breakfast, lunch and dinner four days a week. Then they go home on the weekend and they have the Mustang Buddy Pack (which provides food outside of the school setting)."

"We had people who would come to the food pantry with no transportation. They were trying to get boxes of food, but they didn't have a vehicle to take it home in. So they had to be very selective of what they were taking."

COPING MECHANISMS

Underemployment, stagnant wages, high housing prices and increased costs of living are commonly reported risk factors that are associated with food insecurity.^{12,15} Many families report not being able to afford balanced meals and have to resort to cutting the size of meals, skipping meals or running out of food altogether. At severe levels, reports of hunger were due to not having enough money for food, which led to skipping meals for the entire day.¹⁰

Having few affordable options causes people to make difficult decisions and causes families to carefully prioritize where to spend their money. Individuals suffering from a lack of adequate food or inadequate access to food often resort to risky coping mechanisms.¹⁸ Food insecure families make trade-offs when considering whether to pay for utilities, gas, mortgage/rent payments, medical expenses or to purchase food.¹⁵ Some families even consider delaying or shuffling bill payments, discontinuing services, pawning possessions or sending children to other homes in order for them to eat.³¹

In 2010, almost half of those who sought emergency food assistance reported having to choose between paying their utilities or paying for food.³⁴ To avoid

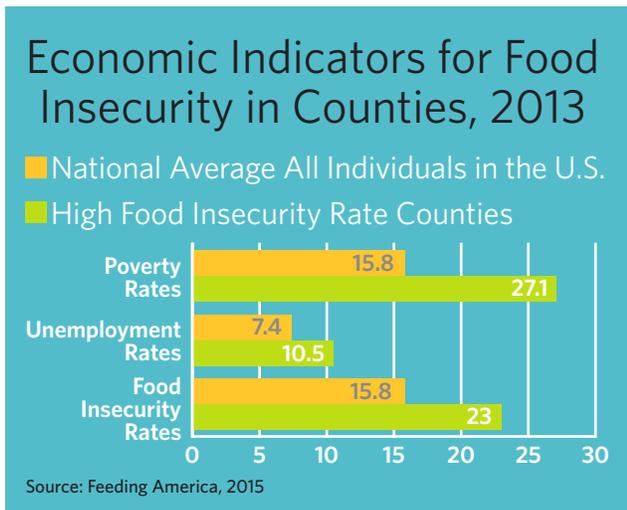
wasting resources, parents purchase foods that they know their children will eat³⁵ and provide them with more food when food is available.³⁶ When it comes to coping strategies, even older adults reported having to forgo medication in order to feed themselves or other members of their household.¹¹

SOCIOECONOMIC FACTORS OF FOOD SECURITY

There are many socioeconomic factors that can negatively impact food security. Income inequality is often the main cause for many health disparities in the U.S. and affordability of healthy foods in low-income communities are also consistently linked to such disparities.²⁷

Labor force status can be associated with food insecurity. Households who are underemployed or unemployed were 12 to 15 percent more likely to be food insecure. In terms of food insecurity and the national unemployment rate, households with an adult employed full time were 1.39 percentage points less likely to be food insecure compared to those with no other adults in the household or adults out of the labor force.¹⁴

Like unemployment, an increase in the price of food is associated with an increase in food insecurity. During the most recent recession, food prices increased and then remained unchanged when the recession ended. However, when both employment and income improved in 2012, food insecurity levels remained high, suggesting that the increased price of food and inflation are responsible for this outcome. Food prices were seen as the strongest association of food insecurity for Supplemental Nutrition Assistance Program (SNAP) recipients.¹⁴



POVERTY

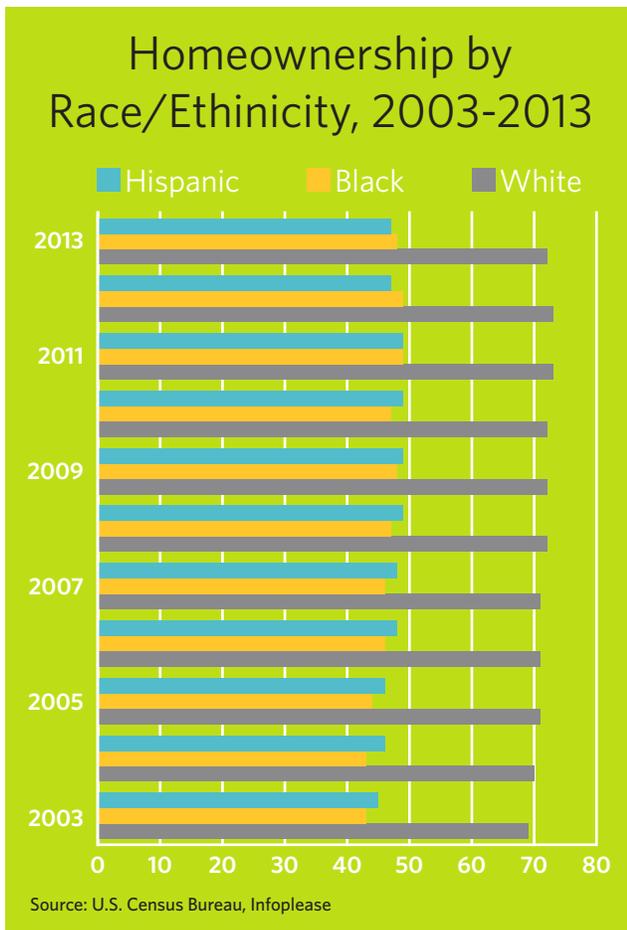
Food insecurity is also strongly related to poverty. One study showed that an increase in poverty led to a similar increase in food insecurity. According to 2012 Census data, 46.5 million people (15%) were living in poverty, which included 16 million children (22%). Concurrently, 49 million Americans were considered food insecure.¹⁷ Low-income households (at or below 185% of FPL) rose from 11.7 percent (32.9 million) in 2001 to 14.5 percent (45.3 million) in 2013.^{37,38}

Food insecurity can also have an inverse association with risk factors. For instance, food insecurity can lead to diet-related health conditions, resulting in

out-of-pocket health expenditures and ultimately poverty.¹¹ It is important to note that food insecurity and poverty can also be independent of each other. For example, food secure households can be either below or above the poverty line.¹²

HOUSING

Housing is one of the basic necessities of life and goes beyond providing basic shelter. As with access to food, housing is a key social determinant of health and has an impact on the health of individuals and families. A study performed in Canada found household food insecurity was much lower in households that owned a home (3.3%) in comparison to those that did not (17.9%).³⁹ In addition to homeownership, lack of access to affordable homes left little money to spend on food, especially nutritious food.



GEOGRAPHIC FACTORS OF FOOD SECURITY

Challenges related to food security are different in rural areas compared to urban areas. For instance, employment opportunities in rural areas are often low-wage jobs. Residents in rural areas have a harder time finding work and have a greater chance of being under or unemployed compared to urban residents. In addition, when compared to urban areas, education levels are lower in rural areas.⁴⁰ According to the U.S. Census Bureau 2008 – 2012 American Community Survey, the working age population (adults ages 25 – 64) in rural areas were 14 percent less likely to have a college degree than in urban areas.⁴¹ In 2012, there were 3 million (15%) rural households that were considered food insecure.⁴⁰ The irony of this situation is that rural areas are typically the source of the food that feeds our nation.

SPOTLIGHT ON SOUTHWEST MISSOURI



PAMELA DUITSMAN **UNIVERSITY OF MISSOURI** **EXTENSION**

Pamela Duitsman works for University of Missouri Extension, which is present in every county throughout Missouri. She works in each of these areas: Missouri Council for Activity and Nutrition, University of Missouri Family Nutrition Education Program and Regional Nutrition and Health Specialist. In addition, she serves on the Executive Committee for the Ozarks Regional Food Policy Council and chairs the Healthy People Subcommittee.

What are some of the barriers or challenges you have faced in helping to improve food access?

"Many organizations and sectors of the food system within a community tend to operate in silos, rather than connecting through meaningful dialogue and partnerships."

"Findings from our Community Food System Assessment in 2013 showed that 140,000 people in Southwest Missouri, including 50,000 children, do not have a consistent, secure source of food every day. Nearly 88 percent of adults in the region do not consume the recommended five servings of fruits and vegetables a day."

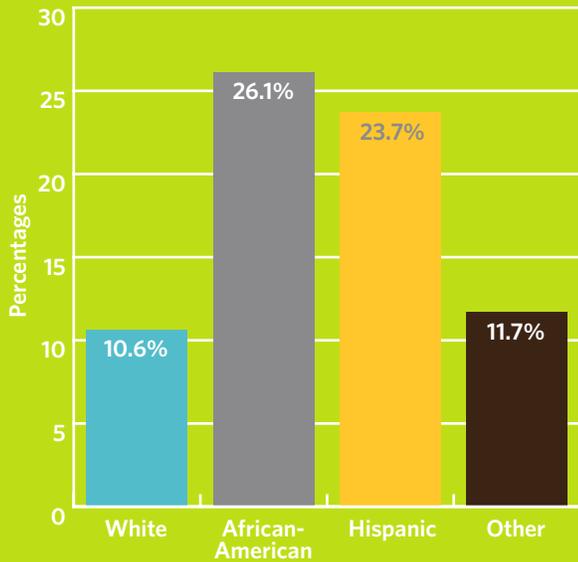
DISPARITIES IN FOOD SECURITY

Common characteristics of those who are food insecure include: low-income households, households headed by a single parent, households headed by an African-American or Hispanic person, households living in a principal city of a metropolitan area, individuals who are renters, individuals who are younger in age and individuals who are less educated.^{8, 11, 14, 15, 36} Households that contain an elderly person were less likely to be food insecure than households without an elderly person. Moreover, those households with an adult who had a four-year college degree were less likely to be food insecure than those without a four-year degree.¹⁴

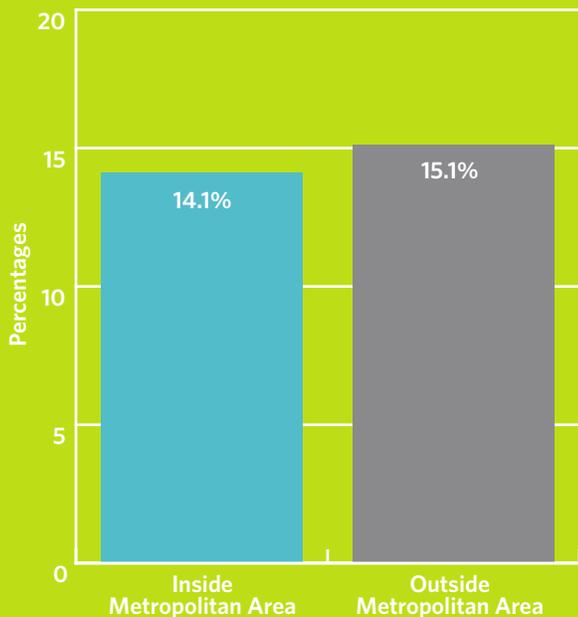
Food insecurity does not discriminate, but certain subpopulations are impacted at a disproportionate rate. In 2013, one in four Hispanic households (23%) and African-American households (26%) experienced food insecurity. The rate for both of these populations was almost twice that of the national average (14%). Very low food insecurity rates for these same subpopulations did not fare any better, with 17 percent of Hispanic households and 15 percent of African-American households experiencing very low food insecurity. A quarter of Hispanic households with children were considered food insecure, whereas 32 percent of African-American households with children were considered food insecure. There were also differences seen among rural and urban populations. Households in rural areas experienced slightly greater rates of food insecurity (15%), compared to urban areas (14%).^{42, 43}

The face of hunger is changing and the usual stereotype of who is food insecure is no longer accurate. The economic downturn of 2007 to 2009 brought a new face to hunger, which includes many in the middle class

Food Insecurity Prevalence Among Race/Ethnicity, 2013



Food Insecurity Prevalence Rates by Area of Residence, 2013



Note:

- Households with children in complex living arrangements, e.g. children other relatives or unrelated roommate or boarder.
- Hispanic may be of any race.
- Metropolitan-area residence is based on 2003 Office of Management and Budget delineation. Prevalence rates by area of residence are for 2004 and later years but are not precisely comparable with those of earlier years.
- Households within incorporated areas of the largest cities in each metropolitan area. Residence inside or outside of principal cities is not identified for about 17 percent of households in metropolitan statistical areas.

Source: Economic Research Service Current Population Survey, 2013

(working poor and underemployed). This introduces new problems because their incomes are often too high to be eligible for food assistance programs but too low to obtain enough nutritious food.¹¹

HEALTH FACTORS OF FOOD ACCESS

FOOD ACCESS AND NUTRITION

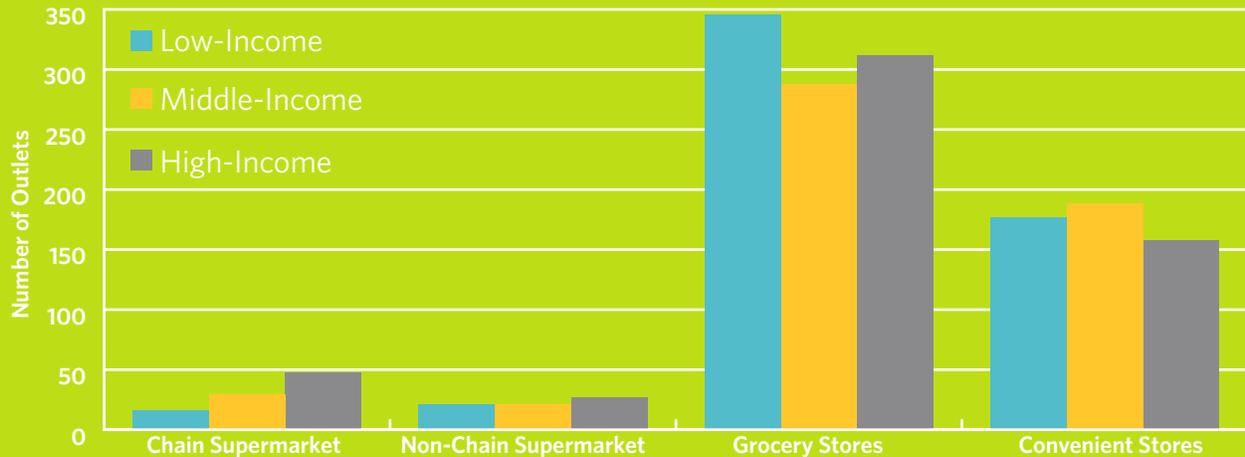
Research shows there are positive associations between healthy foods available in neighborhoods and increased consumption of those foods, along with better nutrition and health.^{44, 45} However, food store availability and location are often dependent on certain factors, such as socioeconomic and racial status. Studies show that neighborhoods with low socioeconomic status had fewer stores containing quality food, yet had greater amounts of stores that had low quality foods.⁴⁴

FOOD DESERTS AND FOOD SWAMPS

Food access is an important factor of food security. Many studies that measured retail food store availability found disparities in food access for low-income and minority communities, qualifying these areas as food deserts. According to the USDA, a food desert is considered an urban or rural area without ready access to fresh, healthy, affordable food. Indicators used to determine what constitutes a food desert were residents living greater than one mile away from a supermarket for urban areas and 10 miles away from a supermarket for rural areas. Additional indicators include a poverty rate of 20 percent or greater.⁴⁶

A study by the USDA in 2009 found that 23.5 million Americans lacked access to supermarkets that were within one mile of their home.⁴⁶ Another study found

Availability of Food Store Outlets by Store Type and Income, 2000



Source: USDA, Economic Research Service, Current Population Survey Food Security Supplement Data, 2014

that only 8 percent of African-Americans lived within a census tract that contained a supermarket. Conversely, low-income ZIP codes have 30 percent more convenience stores than higher-income ZIP codes.⁴⁷

While food deserts have been noted as reasons for a lack of access to supermarkets, the term “food swamps” describes the increased amount of unhealthy inexpensive foods located in particular neighborhoods and may better explain the increase in obesity rather than food deserts.⁴⁸

PROXIMITY AND AFFORDABILITY

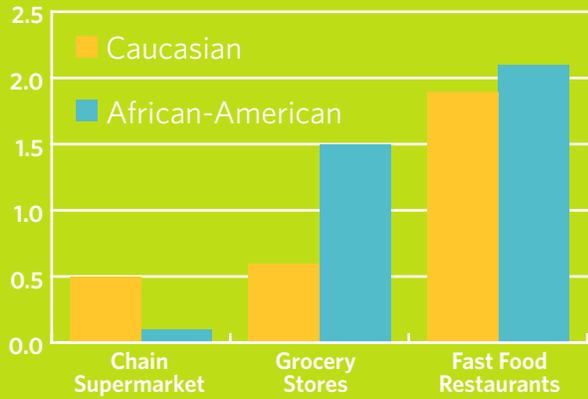
Supermarkets are used as a proxy for access because studies show that they are the most reliable source of attaining healthy food items. Access to a variety of healthy, high-quality food products at low cost are found at most supermarkets and supercenters,⁴⁹ rather than smaller, non-chain grocery stores.⁵⁰ There are fewer chain supermarkets and grocery stores located in low-income and minority neighborhoods, resulting in less opportunity for residents in these

areas to have access to healthy foods. Multiple studies have found that supermarkets typically carry fresh, healthy foods that are lower in price when compared to smaller food stores and convenience stores.⁵¹ The volume of food sold can have an impact on the price of food. Stores with higher volume can spread that fixed cost over more people. The result is higher food prices for low-income areas and lower prices for high-income areas.⁵² The price of healthy foods is seen as a

Housing Discrimination and Food Access

It is worth noting that housing market discrimination prevented minorities from moving to locations where access to healthy foods was available. Until the Fair Housing Act of 1968, housing and lending market discrimination was considered legal. Since then, illegal housing and lending market discrimination has persisted, causing disparities in the availability of supermarkets in low-income minority neighborhoods.⁵²

Mean Number of Food Stores and Food Service Places by Race, 2002



Source: Morland et al, 2002

barrier for low-income households, and these families are usually forced to purchase cheaper, higher calories foods.³³

Research finds that the close proximity of a supermarket has a positive impact on fruit and vegetable consumption, including the selection of healthier options.^{48,50,51} Studies also show that in stores where fruits and vegetables had a dedicated space, or when this space was increased at food retail establishments, consumption of these items also increased. Fruit consumption by SNAP participants also increased when there was an increase in supermarket access.⁵³

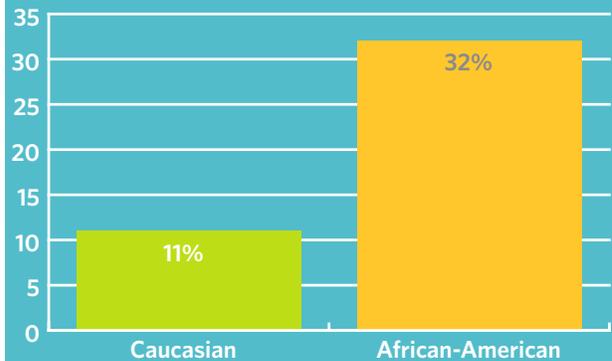
DISPARITIES IN FOOD ACCESS

Multiple studies have found that race and income play a role in the number and proximity of supermarkets within a neighborhood. One study in particular found that both race and income were associated with the

location of supermarkets and available selection of food in the market. In addition, the study's data suggest that both mixed race neighborhoods with high poverty and predominately African-American neighborhoods were likely to have less access to supermarkets than predominantly Caucasian, higher-income neighborhoods.⁴⁸

A recent study found that African-American neighborhoods had four times fewer supermarkets than that of their Caucasian counterparts. Another study found that despite adjusting for income, African-American neighborhoods still had fewer supermarkets.⁵¹ With less availability and access to supermarkets, low-income and African-American communities have difficulty meeting the recommendations of the 2010 Dietary Guidelines for Americans.⁶ When supermarkets were located in African-American neighborhoods, consumption of fruit and vegetables increased.⁵⁴ One study found that for every supermarket within a census tract, African-Americans consumed one-third more fruits and vegetables.⁵⁵

Percentage Increase of Fruits and Vegetable Consumption With One Supermarket in Census Tract by Race, 2002



Source: Morland et al, 2002

Neighborhoods without access to supermarkets have higher risks for obesity and other diet-related diseases. Fast food restaurants are more likely to be located in minority and low-income neighborhoods, providing greater access and consumption of less healthy food items and contributing to a higher prevalence of obesity. A 2007 study showed that the association with food retail availability and body mass index (BMI) was three times higher among African-Americans compared to Caucasians and that food store availability was the most important factor for higher rates of obesity in African-American adolescents.⁵⁰

URBAN VS. RURAL

As discussed above, access to healthy food for low-income residents in urban areas is difficult because retail food sources are limited,⁵⁶ which leaves convenience stores as the sole source of food for many residents. These stores lack similar selections found in larger grocery stores and supermarkets. Urban areas were found to have fewer supermarkets when neighborhoods had higher proportions of African-Americans,⁴⁴ leaving these neighborhoods to be deemed food deserts.²⁸

By contrast, residents in rural areas have different challenges when accessing food. With fewer people in rural areas, supermarkets are sparser, which causes families to travel longer distances to get to food retail establishments.^{28, 40}

Residents of both urban and rural areas have found transportation to be a major challenge when accessing food and have reported few available options when setting out to do their shopping. Low-income households were six to seven times more likely to not own cars when compared to other households, creating a major barrier in accessing supermarkets. Rural residents without reliable transportation often have to depend on others to take them shopping,

Availability of Food Stores in Rural and Suburban Areas by Store Type, 2000



Source: USDA, Economic Research Service, Current Population Survey Food Security Supplement Data, 2014

while urban residents frequently resort to cabs, public transportation or walking for their shopping trips.²²

HEALTH OUTCOMES RELATED TO HEALTHY EATING

It is important to have good nutrition and a healthy diet because it aids in growth and development and decreases the risk for chronic conditions.⁶ Food insecure households are known to have lower nutrient intake, which leads to deficiencies in essential nutrients, poorer overall health, greater risks for chronic conditions and mental health problems, higher levels of depression, poorer management of health conditions and increased hospitalizations.^{9,11,31}

THE OBESITY HUNGER PARADOX

Obesity is a major public health problem in the United States. According to National Health and Nutrition Examination Survey, over a third of the U.S. population is obese, with approximately 16 percent of children considered obese as well.³⁵ There are many factors that contribute to obesity, including food insecurity, emotional eating and disordered eating, which often occur when households are low on, or without, food supplies.¹⁸ From 2011 to 2012, one-third of adults and 17 percent of children were considered obese.

In children ages 2 to 19 years old boys (32%) had slightly higher prevalence rates for being overweight compared to girls (31%); however, girls (17.2%) had slightly higher rates of obesity compared to boys (16.7%). In the same age range, Hispanic children (22.4%) had higher rates of obesity compared to Caucasians (14.1%), African-Americans (20.2%) and Asian children (8.6%).

For adults age 20 years and older, men had higher prevalence rates of being overweight compared to women; however, women had higher rates of obesity. When adjusted for age, African-Americans (47.8%) had higher rates of obesity compared to Caucasians (32.6%), Hispanics (42.5%) and Asians (10.8%).⁵⁷ If this trend continues, it is projected that 75 percent of Americans will either be overweight or obese by 2018.²⁸

Hunger may be difficult to recognize in America because the perception of someone who is struggling with hunger is usually someone who is thin and frail. Therefore, it seems counter intuitive to suggest that those who struggle with hunger or food insecurity would also struggle with being overweight and obese. However, food insecurity and obesity are often two sides of the same coin because they stem from the same shared food systems.³⁵ The link between food insecurity and obesity occurs for a number of reasons. A lack of money to purchase foods at some point within the year can lead to individuals purchasing less

Overweight vs. Obese

- **Body mass index (BMI) is a calculation of an individual's weight-to-height ratio, used as an indicator of obesity and overweight.**
- **Overweight: If your BMI is in the 25.0 – 29.9 range.**
- **Obese: If your BMI is 30.0 or higher.**

expensive foods that are filling, but high in calories, fats, sodium and sugar. Food insecure individuals may also overeat when food becomes available, contributing to excess weight gain.

There are extensive disparities related to obesity and food insecurity in the U.S. that affect socioeconomic, age, gender and racial sub-populations.³⁵ Food insecurity and obesity outcomes are often related to being low income and lacking access to healthy food items.⁵⁸

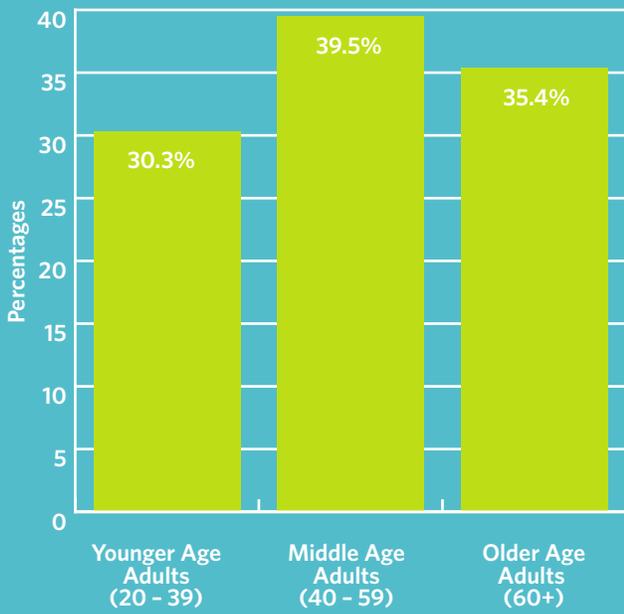
Those who struggle with obesity place themselves at greater risks for other health conditions, including Type 2 diabetes, hypertension, coronary heart disease, stroke, certain forms of cancers, asthma and reproductive issues.⁵⁹

DIABETES AND CO-MORBIDITIES

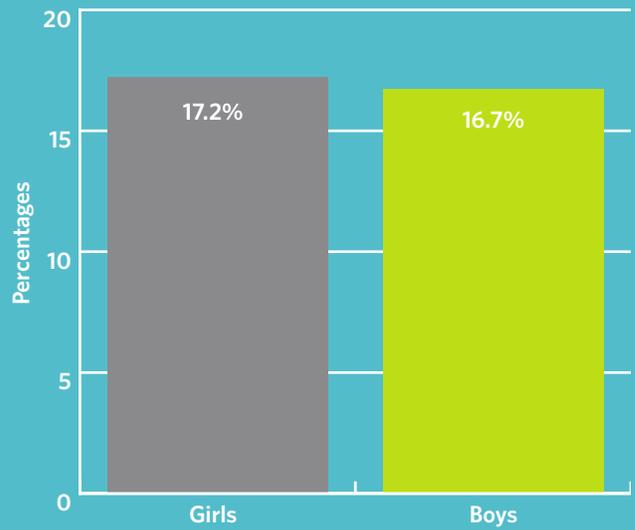
Food insecurity has significant associations with Type 2 diabetes, especially among low-income, food insecure families.^{10,31} In addition to prevalence, poor management of diabetes is also associated with food insecure households. Food insecure adults with medical conditions often struggle with the decision of whether to pay for medication or pay for food, which can have implications on their blood sugar. However, putting off purchasing medication also leads to negative health consequences that often leave individuals and families in a no-win situation.

Cyclical and episodic eating can also have negative consequences for food insecure diabetics, resulting

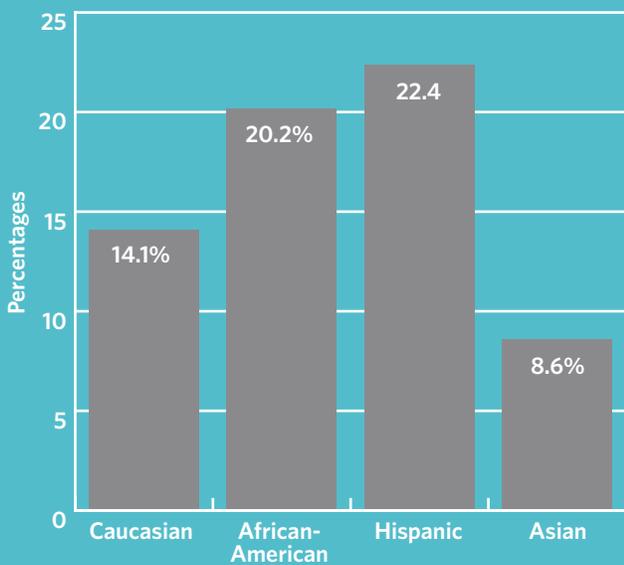
Obesity Prevalence Rate by Age



Obesity Prevalence Rates for Children ages 2 - 19 by Gender, (2011 - 2012)



U.S. Obesity Prevalence Rate for Children Ages 2 - 19 by Race, (2011 - 2012)



Obesity Prevalence Rates for Age 20 and Over by Race, (2011 - 2012)



Source: Odgen et al, The Journal of American Medical Association, 2014

in mismanagement of their condition and causing hypo- and hyperglycemia reactions.³¹ Hypertension is also strongly associated with low-income food insecure households.¹⁰ According to a 2010 study, food insecure adults had a 20 to 30 percent greater risk for hypertension.⁶⁰ This is most likely due to the consumption of foods that are less expensive but high in sodium.

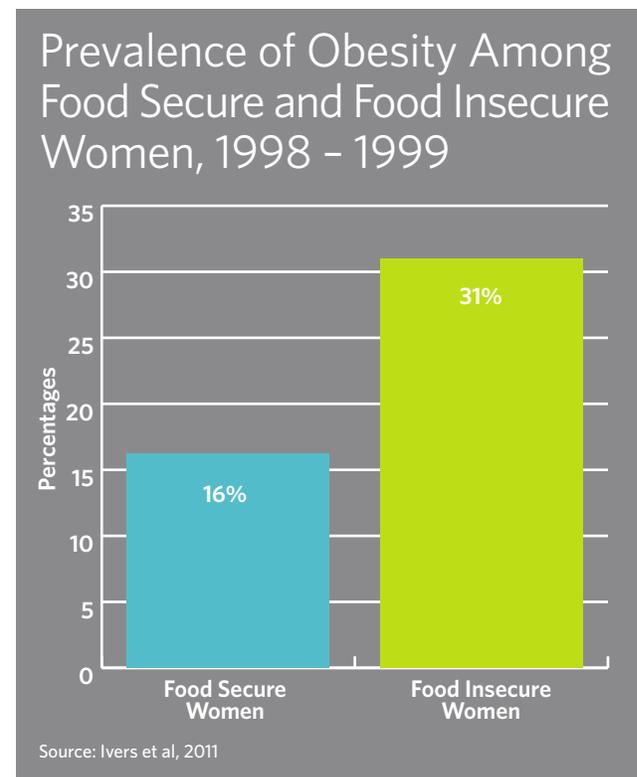
POPULATION-SPECIFIC DISPARITIES

RACE/ETHNICITY

African-Americans are disproportionately affected by poverty, unemployment and food insecurity. In 2013, African-Americans were more than twice as likely to be food insecure compared to their Caucasian counterparts. When comparing African-Americans to both Caucasian and Hispanic households, African-Americans had the highest percentage of food insecurity. One in four (26%) African-Americans households are food insecure, compared to one in 10 Caucasian households (11%) and one and four Hispanic households (24%). For the same year, median income for African-American households (\$34,600) was significantly lower compared to both Hispanic households (\$41,000) and Caucasian households (\$58,300). However, Hispanics are at a greater risk for obesity and diabetes compared to other racial and ethnic groups. Hispanic children and adolescents are at greater risk for being overweight and obese compared to Caucasian and African-American children.^{42, 43}

WOMEN

In addition to disparities among socioeconomic and racial sub-populations, several studies find strong evidence that food insecure women are at greater risk for obesity. A study in California showed that obesity was more prevalent in women who were food insecure (31%) compared to women who were food secure (16%) with the greatest risk falling on those who were non-white.¹⁸



Women of childbearing age are at particular risk for poor health due to malnutrition resulting from food insecurity, including deficiencies in micronutrients.⁶¹ A study of 3,744 women found that food insecure women had two-thirds below the recommended daily allowances for calcium, iron, vitamin E, magnesium and zinc. Additionally, multiple studies found

associations between women who are food insecure and overweight or obese, with the greatest risk among women of color.^{18,32} Women who are food insecure also face higher rates of depression, anxiety and stress, which can play a negative role in their parenting.⁶¹

PREGNANT WOMEN

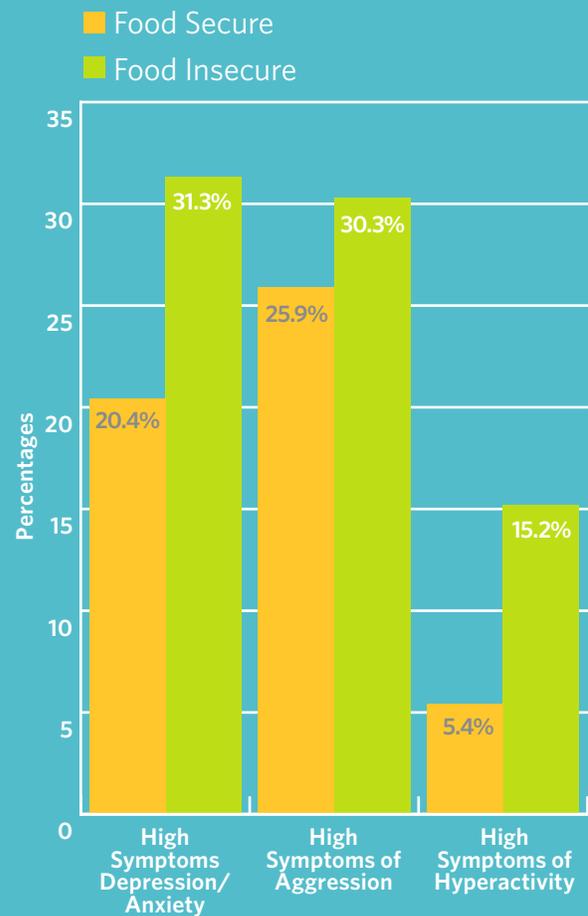
Food insecurity is also associated with poor pregnancy outcomes. Food insecure pregnant women are at greater risk for gestational diabetes and have higher levels of stress, anxiety, depression and low self-esteem.⁶² They are more likely to have low birth weight babies. In addition, their infants are more likely to have delayed development and birth defects. Permanent cognitive deficiencies due to smaller head circumference are also associated with mothers who were malnourished.⁶¹ According to a 2013 study, women who are both pregnant and food insecure have a greater risk of their offspring developing obesity and metabolic syndrome during adolescence.⁶² Pregnant women who are food insecure are also at greater risk for obesity themselves. Pregnant women who live in food insecure households are more likely to experience greater weight gain during their pregnancy than pregnant women who are food secure.³¹

CHILDREN

Food insecurity and lack of access to food not only impacts adults, but can have long-lasting consequences for children. In 2013, 15.8 million U.S. children lived in food insecure households.⁶³

Nutrition is crucial in the first three years of life and children who are food insecure are at greater risk for poor health and quality of life. Food insecure children are vulnerable and have stunted development in the earliest stages of their lives. Additionally, they are more likely to be hospitalized, are at higher risk for asthma and anemia and have more oral health problems.^{8, 11, 36, 64} Children who experience food

Children’s Behavioral Characteristics Among Food Secure and Food Insecure, (1997 - 1998)



Source: Melchior et al, 2012

insecurity are also at greater risk for behavioral, social and cognitive problems. Studies have shown an association between children who are food insecure and academic problems, school tardiness, high aggression, hyperactivity, anxiety, depression, mood swings and bullying.^{8, 11, 64, 65}

OLDER ADULTS

Advances in medical technology and health care have lengthened life expectancy, and older adults are projected to greatly increase as a percentage of the population. By 2040, it is expected that there will be 79.7 million older adults in the U.S., twice as many as there were in 2000. The change in demographics will impact nutrition services that are culturally inadequate for the increasing older minority populations.⁶⁶

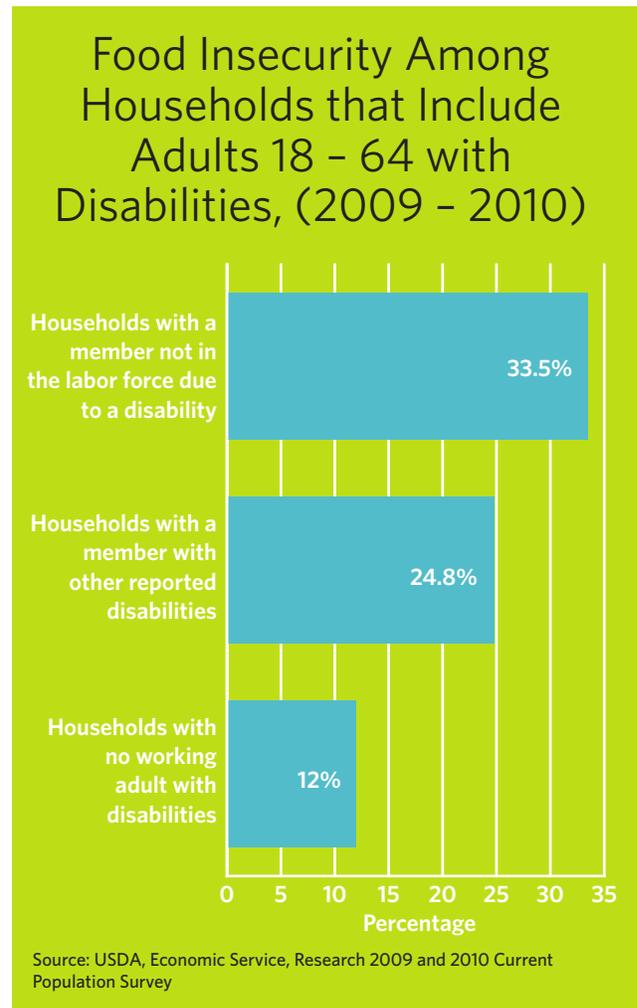
Food insecurity is becoming increasingly problematic among older adults and is affecting them at disproportionate rates, especially those who are low income, less educated and racial or ethnic minorities.⁶⁷ Food insecurity among older adults has more than doubled between 2001 and 2011. In 2013, 2.9 million households with seniors experienced food insecurity, with 1.1 million of them living alone. Moreover, in the same year, 4.2 million seniors (10%) lived below the poverty line. One study found that although some food insecure seniors had enough money, they were unable to access food due to lack of transportation, health problems and/or a lack of physical mobility.

Food insecure seniors are more likely to have lower nutritional intake, as well as higher risks for chronic conditions when compared to food secure seniors. Food insecure older adults face higher rates of depression (60% more likely), asthma (52% more likely), heart attack (53% more likely) and congestive heart failure (40% more likely). In addition, seniors are 22 percent more likely to have limited Activities of Daily Living (ADLs), prohibiting them from performing normal activities independently, such as bathing, dressing and eating.⁶⁶

PERSONS WITH DISABILITIES

Households with working adults with disabilities had a high prevalence rate of food insecurity.⁶⁸ Prior research found food insecurity is common among households with a disabled adult. The individual's

disability may affect the amount of work they can do, or it may prevent them from entering the labor force altogether. High medical expense is an additional factor that increases the risk of food insecurity among individuals who are disabled. Moreover, there are cases where non-disabled adults are the primary caregiver of a disabled adult, which prevents full-time employment and adds to the issue of food insecurity within the household.⁶⁸ Food insecurity rates impact one-third of households containing an adult who is out of the labor force due to a disability and a quarter of households containing an adult who is working.⁶⁹



VETERANS

The Public Health Nutrition Journal found that veterans of U.S. wars in Afghanistan and Iraq had food insecurity rates that are nearly double (27%) the national average (14.5%). The study also found that those veterans who were married, had higher incomes, had fewer children or got more hours of sleep per night had increased odds of being food secure.⁷⁰



ECONOMIC AND PRODUCTIVITY LOSS FROM FOOD INSECURITY

At the 2012 G8 Summit, President Barack Obama called food security an “economic imperative.” He explained that food insecurity is a concern for everyone because

of its damaging impact on the economy due to increased health care spending and loss of productivity.⁷ Health care costs associated with food insecurity are both direct and indirect. Direct costs include medical expenditures for care and hospitalizations, while indirect costs include loss of resources and productivity due to morbidity and mortality.⁷¹

According to the Center for American Progress, the economic downside to food insecurity is that it costs the nation at least \$167.5 billion dollars a year (\$542 per citizen) from a combination of economic productivity losses, rising costs of education due to poor educational outcomes, the cost of charity for hunger issues and the cost of health care. This cost, known as “America’s Hunger Bill” does not include the cost of the SNAP, formerly known as the Food Stamp program, which costs roughly \$94 billion a year.³⁴ Furthermore, the annual health care costs attributed to obesity accounted for \$75 billion dollars, paid mostly by the Medicaid and Medicare programs. Spending on obesity alone accounted for more than a quarter of the rise in health care spending from 1987 to 2001.⁶

NUTRITION ASSISTANCE PROGRAMS

Federal nutrition programs provide a necessary safety net that targets the most vulnerable citizens in times of need and helps put food on their tables. Studies have shown that participation in nutrition programs helps to provide resources for low-income communities to address the issues of food access and food insecurity. There are numerous federal nutrition programs available, with nearly one out of four individuals utilizing one of these programs directed by the USDA. The largest of the USDA-administered nutrition programs include SNAP; Supplemental

SPOTLIGHT ON SOUTHEAST MISSOURI

Nutrition Program for Women, Infants and Children (WIC); the National School Lunch Program; the National School Breakfast Program and the Child and Adult Care Food Program.³⁵

SUPPLEMENTAL NUTRITION ASSISTANCE PROGRAM

SNAP is considered the largest food assistance program and the first line of defense against hunger.⁷² It originated in the 1960s to address the increasing rates of poor nutrient intake. In 2014, SNAP served an average 46 million people per month⁷³ through the use of Electronic Debit (EBT) cards that can be used to purchase groceries at authorized retailers nationwide. Individuals and families with a gross income up to 130 percent of FPL are eligible for SNAP.⁷⁴ Of those receiving SNAP benefits, 92 percent have incomes below the poverty line, one-third are households with a senior or person with a disability and three-quarters are households with children.⁷² Reports from both the U.S. Census Bureau and USDA Food and Nutrition Service found that SNAP benefits helped to bring 4.8 million adults and 2.1 million children out of poverty in 2013. Additionally, SNAP boosts the economy due to each SNAP-funded dollar generating \$1.79 in economic activity.⁷²

SUPPLEMENTAL NUTRITION PROGRAM FOR WOMEN, INFANTS AND CHILDREN

WIC, a preventative program which originated in 1974, provides supplemental foods, nutrition education (along with breastfeeding support), preventative screenings and health care referrals for low-income, at-risk, pregnant women, new mothers, infants and children. WIC currently serves 8 million people nationwide.⁷⁵



KAREN GREEN SOUTHEAST FOOD BANK

Southeast Food Bank was founded in 1985 to provide charitable disaster relief programs in Southeast Missouri. Southeast Food Bank serves 16 counties and is affiliated with Feeding America and Feeding Missouri. Karen Green serves as chief executive officer.

What are some of the barriers that you have faced?

"The biggest barrier at the community level is trying to change the public's perception of food insecurity. It's not necessarily always people in poverty or seniors. It's struggling young couples that are working and having trouble. We see a lot of young couples at these mobiles, getting food. There's a lot of good hardworking people out there."



SPOTLIGHT ON CENTRAL MISSOURI

ELIZABETH BLAU DEPARTMENT OF HEALTH AND SENIOR SERVICES (DHSS)

Elizabeth Blau works for Missouri DHSS as the Community Planner for Nutrition Programs within the Bureau of Community Food and Nutrition Assistance.

On the topic of food access during the summer...

"Hunger is very important and it needs to be addressed, however it should never be an awareness that a child possesses. Children should never have to worry about the topic of hunger. It is not a child's problem to solve. It doesn't need to register with them, it needs to register with every adult."

"Our goal with schools is always to encourage them to extend their meal service beyond just the scope of the summer school program, because most summer school programs are only four weeks long. Then there is all of July and part of August to consider with kids."

"Summer food is also fun because it is our opportunity to get in the trenches with a child's time as well. It is our intent to build community partnerships in all areas of the state, where children have activities and oh-by-the-way we're going to feed you a meal. Then the focus is more on the activity and having their time occupied in a productive way and enriching and engaging them intellectually, and by activity."



THE NATIONAL SCHOOL LUNCH AND THE SCHOOL BREAKFAST PROGRAM

The National School Lunch Program (NSLP) was first established under the National School Lunch Act of 1946 under President Harry Truman. This federally funded program provides daily, nutritionally balanced lunches to children at low or no cost and is operated in public and nonprofit private schools, as well as some child care facilities. In fiscal year 2012, NSLP served nearly 32 million children each day.⁷⁶ The School Breakfast Program was first established as a pilot program in 1966 and was made permanent in 1975. It operates much like the National School Lunch Program, providing free or reduced cost breakfast for eligible children. School districts that choose to participate receive cash subsidies from the USDA. In fiscal year 2011, 12 million children participated in the School Breakfast Program.⁷⁷

THE CHILD AND ADULT CARE FOOD PROGRAM

The Child and Adult Care Food Program (CACFP) provides nutritious meals and snacks for child care and adult care settings. CACFP serves over 3 million children and 120,000 adults.⁷⁸

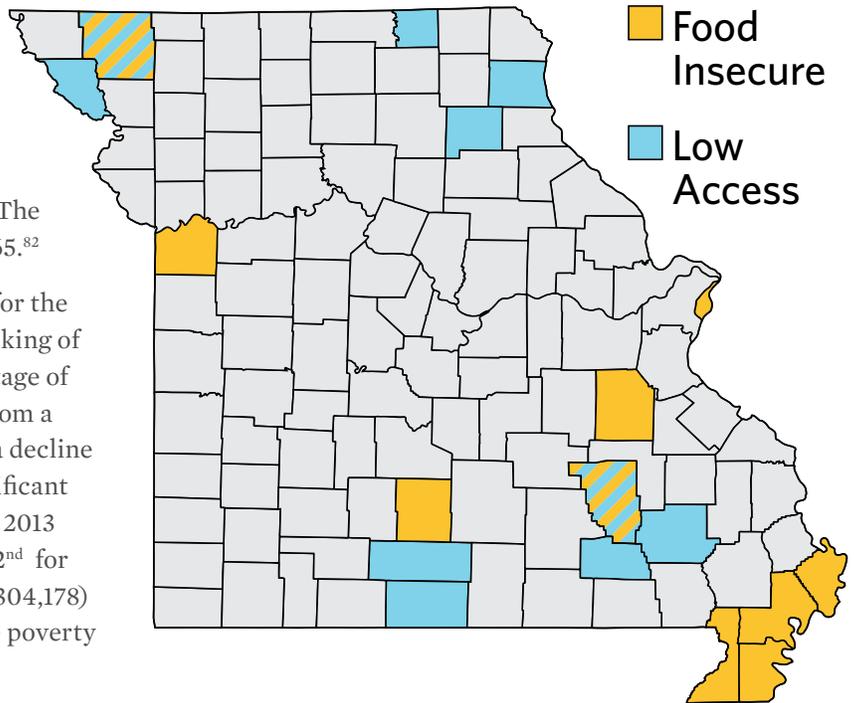
SPOTLIGHT ON MISSOURI

DEMOGRAPHICS AND ECONOMIC INDICATORS

Currently, Missouri has a population of approximately 6 million people. This includes 1.5 million children under the age of 18, 3.5 million adults between the ages of 18 and 64 and more than 800,000 seniors age 65 and over. The median age in Missouri is 38 years, which is slightly older than the national median age

of 37 years.⁷⁹ Median household income in the state is \$46,931, about \$5,319 less than the national median income.⁸⁰ From 2009 – 2013, 15.6 percent (about 935,000) of people in Missouri lived below the federal poverty level, compared to 15.4 percent nationally.⁸¹ The minimum wage in Missouri is currently \$7.65.⁸²

In 2013, Missouri ranked 23rd among states for the percentage of people living in poverty (a ranking of first means the state has the highest percentage of people living in poverty). This is a decline from a ranking of 25th in 2011. Although there was a decline in rankings among states, there was no significant difference in the poverty rate in Missouri in 2013 (15.9%) and 2011 (15.8%). Missouri ranked 22nd for children living in poverty, with 22 percent (304,178) living in a household with income below the poverty level in 2013.⁸³



FOOD INSECURITY AMONG HOUSEHOLDS

Food insecurity rates have been rising in Missouri for the last 10 years. A study conducted from 2011 to 2013 ranks United States food security. On a scale of 1 – 50, where one is the most food insecure and 50 is the most food secure, Missouri ranked sixth for food insecurity and second behind Arkansas for hunger.⁸⁴ Currently one in six Missourians do not have enough to eat.⁸⁵ In 2012, the state had an overall food insecurity rate of 17 percent (1,030,030), with 21.6 percent (304,810) of children living in a food insecure household.^{86, 87} Over 408,000 Missouri households were food insecure between 2011 and 2013, with nearly 200,000 households experiencing very low food security.⁸³ In a 2015 report, 16.6 percent of Missourians over the age of 60 were marginally food insecure, ranking Missouri 40th out of all states (with 50th being the state with the highest percentage of food insecurity).⁸⁸ Of Missouri’s eight congressional districts, district one (25%) and district five (18.3%) have the highest food insecurity rates.⁸⁶

TOP 10 FOOD INSECURE COUNTIES

There are wide variations in Missouri’s food insecurity rates among its 115 counties. The 10 counties in Missouri with the highest food insecurity rates are St. Louis City, Pemiscot, Mississippi, Dunklin, New Madrid, Reynolds, Jackson, Nodaway, Washington and Wright. Counties in the southeast region of Missouri have the highest food insecurity rates (17%), while counties in the northeast region have the lowest food insecurity rates (14.8%). St. Louis City has the highest percentage of household food insecurity rates (26%), followed by Pemiscot County (23%).⁸⁹

TOP 10 LOW ACCESS TO FOOD COUNTIES

Limited access to healthy food indicates the proportion of the population that is considered low-income and do not live in close proximity to a grocery store. Much like counties which represent the highest levels of food insecurity, more rural counties make up higher percentages of the population which lack access

to food. The top 10 counties in Missouri that rank the worst in terms of access to healthy food are Holt, Schuyler, Ozark, Carter, Nodaway, Reynolds, Wayne, Douglas, Lewis and Shelby.⁸⁹

FOOD BANKS

Many food insecure households seek assistance through food banks. There are six food banks located within the state of Missouri helping to serve those in need: Second Harvest Community Food Bank, Harvesters, the Food Bank for Central and Northeast Missouri, Ozark's Food Harvest, St. Louis Area Food Bank and Southeast Missouri Food Bank. These food banks operate as distribution centers, providing food to agencies such as food pantries, soup kitchens and other charitable sources.

FOOD ACCESS AND SUPERMARKET RETAIL

A study of St. Louis conducted between 2003 and 2004 used information gathered from the in-person audits of 81 community supermarkets and 355 fast food restaurants, as well as Census Bureau data collected in 2000 to determine racial distribution and the percentage of individuals living below the federal poverty level. Spatial scanning was used to determine the amount of supermarkets and fast food restaurants located within a neighborhood cluster. The results show that the location of both fast food restaurants and supermarkets differed so much that their location could be predicted based solely on two variables: race and poverty status.

Individuals and families residing in high-poverty areas were more likely to lack supermarkets regardless of race. However, predominantly African-American neighborhoods had fewer supermarkets, regardless of income. Out of 81 supermarkets, 22 were in predominantly Caucasian neighborhoods, while zero were in predominantly African-American neighborhoods.⁴⁸

DIET-RELATED HEALTH DISPARITIES IN MISSOURI

OBESITY

In 2003, Missouri had an obesity rate of 23.6 percent. Ten years later, the obesity rate in Missouri increased almost 30 percent to 30.4 percent, which is higher than the national rate of 29.4 percent. Missouri had the 16th highest adult obesity rate in 2013. Populations in Missouri with higher rates of obesity include those between the ages of 45 and 64, those with incomes less than \$25,000, those with some college education, African-Americans, men and those who reside in rural areas.⁹⁰ According to Trust for America, the projected obesity rate for 2030 is 61.9 percent, with projected obesity-related health care costs expected to increase by 13.9 percent. A 5 percent reduction in BMI could result in a savings of 7.9 percent in health care costs.⁹¹

DIABETES

In 1995, Missouri's diabetes prevalence rate was 5.7 percent.⁹¹ By 2013, the rate had almost doubled to 9.6 percent, ranking Missouri 26 out of 51 states (including Washington, D.C.), with the lowest ranking state having the highest percentage of residents with diabetes.⁹⁰ Diabetes prevalence in Missouri increased as the population has aged. Households with incomes of less than \$15,000 had significantly higher rates of diabetes than any other household income level. According to the American Diabetes Association, the direct medical costs of the disease was \$3.24 billion in 2012, with indirect costs of \$1.24 billion.

Estimated Percentage of Missouri's Feeding America Household Clients: Health, 2014

Diabetes	32%
Hypertension	59%
Unpaid Medical Bills	60%
Purchase Unhealthy Food in the Last 12 Months	80%

Source: Feeding America, Hunger in America: Missouri, 2014

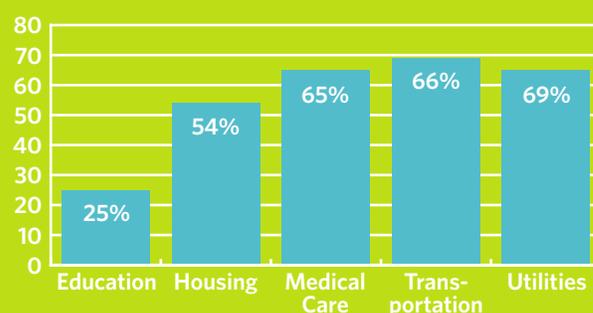
Current Cases and Projected Cases of Diet-Related Health Conditions in Missouri, 2010 and 2030

	2010	2030
Diabetes	535,793	843,420
Hypertension	1,221,011	1,585,199
Heart Disease	383,542	1,760,591
Arthritis	1,207,427	1,016,888
Obesity-Related Cancer	96,772	241,389

Source: The State of Obesity, 2015

Percentage of Missouri's Feeding America Client Households Who Had to Choose Between Food and Other Competing Necessities, 2014

Source: Feeding America, Hunger in America, 2014



MISSOURI'S PARTICIPATION IN FEDERAL NUTRITION PROGRAMS

SNAP AND WIC

Missouri ranks 19th in the country in SNAP participation. The state's average monthly individual participation rate was over 929,000 persons in 2013, with participation rates among working poor eligible individuals at 83 percent. Missouri's participation in SNAP has seen a 10 percent decrease in the last five years.⁸³ By contrast, monthly participation in the WIC program has increased in Missouri over the last

10 years. In 2013, children (71,993) had the highest participation, followed by infants (37,635) and women (36,272).

NATIONAL SCHOOL LUNCH PROGRAM (NSLP), SCHOOL BREAKFAST PROGRAM (SBP) AND THE SUMMER NUTRITION PROGRAM

During the 2013 – 2014 school year over 2,400 Missouri schools participated in the NSLP, with an average of more than 596,000 students participating daily. Of those participating, more than 380,000 receive free and reduced lunch. Comparatively, the SBP had over 2,200 schools participating in the state. Missouri is ranked 14th among participating states (with 1st being the state with the highest participation), with an average of more than 268,000 students participating daily. Of those participating, over 216,000 students receive free or reduced breakfast. The state would

receive an additional \$12.7 million federal dollars if participation in the program reached 70 percent, serving an additional 49,705 students. During the 2013 – 2014 school year, student participation for free and reduced breakfast was 56.9 percent.⁸³

In 2013, Missouri ranked 45th among states participating in the Summer Nutrition Program (with 1st being the state with the highest participation). The state averaged more than 28,000 students participating daily in the program. The low-income participation rate was at 7.9 percent. If the participation rate reached 40 percent, approximately 114,000 additional students would be served, with the state receiving an additional \$8.5 million in federal funds.

FOOD SECURITY AND ACCESS POLICIES

CURRENT POLICIES

This section focuses on current local, state and federal policies that address the issue of disparities related to food security and access. Policy and legislation can work to improve the quality and availability of healthy foods in all communities.

Missouri Senate Bill 727

This law creates sales and use tax exemptions on food items sold at farmers markets and requires implementation of a pilot program to allow SNAP participants access to affordable fresh foods at farmers markets. In addition, the law allows SNAP participants to receive a dollar for dollar match for every SNAP purchase at participating farmers markets. The pilot is to be established in one rural and one urban area within the state of Missouri.

Missouri House Bill 1184

This law expands the Farm to School program to the Farm to Table to include schools, correctional facilities, hospitals, nursing homes and military bases. It requires the Missouri Department of Agriculture to establish program goals, including that participating institutions must purchase at least 5 percent of their food locally by December 2018.

Agriculture Act of 2014

The Agriculture Act of 2014, also known as the 2014 Farm Bill, was signed into law by President Obama on February 7, 2014. This law provides farmers and ranchers credit to continue their farm work, as well as additional safety nets. The new Farm Bill allows more flexibility so that loans may be extended for farm ownership, including to urban youth. The law also includes several programs that address hunger and help improve access to healthy produce for participants in federal nutrition programs. Additional programs in the Farm Bill include the Commodity Supplemental Food Program, Seniors Farmers Markets, USDA Snack Program, Community Food Project Grants, Food Distribution Programs, Natively Grown Food Support, Urban Agriculture and Urban Food Enterprise Development Center, Bill Emerson National Hunger Fellowship Program, The Mickey Leland International Hunger Fellowship Program, The Hunger-Free Communities Collaborative Grant Program, The Hunger-Free Communities Infrastructure Grant Program, The Emergency Food Assistance Program and SNAP. This law did cut funding to SNAP by \$8.6 billion over a 10-year period, impacting 850,000 households which include children and infants.⁹²

Healthy Food Financing Initiatives (HFFI)

HFFI was established in the 2014 Farm Bill as a means to improve access to healthy foods for low-income communities across the country. The USDA authorizes spending up to \$125 million for public-private

partnerships which help finance projects in urban and rural communities. The projects include development and expansion of grocery stores, food hubs, farmers markets, mobile markets, corner stores, co-ops, urban farms, kitchen incubators and other healthy food retailers.⁹³ This initiative is an opportunity to bolster local economies and revitalize communities.

Food Insecurity Nutrition Incentive Program (FINI)

FINI was also established in the 2014 Farm Bill and provides funding to programs that provide incentives to increase the purchase of fruits and vegetables among low-income consumers participating in SNAP at the point of purchase. Government agencies and nonprofit organizations that participate in the program must provide a dollar-for-dollar match.

The Child Nutrition Act

This act was signed into law by President Obama on December 14, 2010, and ensures that low-income children have the ability to participate in school nutrition programs, including SBP, NSLP, Child and Adult Care Food, Summer Food Service, Afterschool Meal programs, the Fresh Fruit and Vegetable program and WIC.

Community Eligibility Provision (CEP)

CEP is one of the newest programs included in the Healthy, Hunger-Free Kids Act of 2010. The 2014 – 2015 school year was the first year that all schools that met the 40 percent identified student threshold could be eligible to participate. CEP helps schools with high percentages of low-income students provide free breakfast and lunch to all students, reduces labor costs for schools and increases federal revenue. In addition, the law eliminates paperwork because students are identified through participation in other similar programs such as foster care, Head Start, SNAP and Temporary Assistance for Needy Families.

Seniors Farmers Market Program

The Seniors Farmers Market program provides

coupons to low-income seniors that can be exchanged for fresh fruits and vegetables through authorized food retail stores, including farmers markets. The purpose of this program is to increase access to local foods that are nutritious for low-income seniors.

POLICY RECOMMENDATIONS

Policy changes at the local, state and federal levels can continue to address the issues of food insecurity and lack of access to healthy foods. The following policy recommendations are a few ways to move toward combatting this issue.

Social and Economic

- Increase outreach and education to assist those who are eligible to participate in the SNAP program
- Build and improve existing retail food stores through the Healthy Food Financing Initiative
- Increase minimum wages for low-income workers in order to decrease poverty and increase household food security

Environmental

- Implement zoning and land use policies in order to designate areas for farmers markets and community gardens, in addition to placing limitations on how many fast food restaurants can be located in a given space
- Improve transportation and other environmental barriers that cut off access to food outlets.
- Expand programs that provide transportation options to and from fresh food outlets, such as supermarkets and farmers markets

Education

- Expand outreach efforts to increase participation in the Summer Food Service Program, which continues to provide meals to low-income children when school is out of session

- Increase outreach and participation in the Community Eligibility Provision program throughout the state of Missouri
- Implement policies to help prevent or eliminate stigma and marginalization of low-income children who receive meals provided through school nutrition programs; encourage all students to participate and do away with special cafeteria lines

Health Behaviors

- Increase outreach to farmers markets to build education and awareness of SNAP-based incentive programs similar to the “Double Bucks for Farmers Market Program,” and work to increase SNAP beneficiaries’ participation
- Encourage state agency participation in programs such as the Senior Farmers Market Nutrition Program and the WIC/Farmers Market Nutrition Program, which encourage healthy eating habits and increase consumption of fruits and vegetables
- Establish collaborative programs that combine food assistance and tobacco control work in order to assist low-income individuals with tobacco cessation and stress management

Health Outcomes

- Provide screening for food insecure individuals who utilize nutrition programs because these individuals are at high risk for obesity, diabetes and hypertension. Screenings for these individuals will help prevent and/or diagnose diet-related health conditions. In cases of diabetes and/or hypertension diagnosis, incorporate nutrition counseling and education and provide appropriate resources to help treat and manage health conditions
- Provide screenings for patients who are overweight/obese, have diabetes, repeated episodes of hypoglycemia or hyperglycemia and/or hypertension at clinical settings to determine their risks for food insecurity

CONCLUSIONS

Food insecurity and a lack of access to healthy food affects the health and wellbeing of vulnerable low-income Missourians. However, it is not solely a problem for low-income residents, but a concern for all Missourians. Food insecurity and a lack of access to healthy foods affects every part of our society, including education, health care, national security and our state and national economies. As one of the richest countries in the world, we must address this basic necessity of life. In this land of plenty, no American or Missourian should go without food. As a community and a state, we must push for action and work toward strengthening our food systems and making them more equitable for all Missourians.

ENDNOTES

1. Centers of Disease Control and Prevention, "Health Disparities," 2014. <http://www.cdc.gov/healthyouth/disparities/>
2. The Center for Health Equity and Social Justice. "What is Health Equity," 2015. <http://www.bphc.org/chesj/about/Pages/WhatisHealthEquityDisparities.aspx>
3. National Cancer Institute-Center to Reduce Cancer Health Disparities. "Cancer Health Disparities Definition", 2015. <http://www.cancer.gov/about-nci/organization/crchd/about-health-disparities/definitions>
4. Shariff, Z., & Khor, G. "Household Food Insecurity and Coping Strategies in a Poor Rural Community in Malaysia," *Nutrition Research and Practice*. 2(1), 26-26. Shepard, D., <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2815312/>
5. United States Department of Agriculture-Economic Research Survey. (2014). "Overview. United States Department of Agriculture-Economic Research Survey," 2014. <http://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us.aspx>
6. Azétsop, J., & Joy, T. (2013). "Access to Nutritious Food, Socioeconomic Individualism and Public Health Ethics in the USA: A Common Good Approach.", *Philosophy, Ethics, and Humanities in Medicine*, 8(16), 1-13.
7. Jones, A., Ngure, F., Pelto, G., & Young, S. (2013). What Are We Assessing When We Measure Food Security? A Compendium and Review of Current Metrics. *Advances in Nutrition: An International Review Journal*, 4, 481-505.
8. Eisenmann, J., Gundersen, C., Lohman, B., Garasky, S., & Stewart, S. (2011). "Is Food Insecurity Related To Overweight And Obesity In Children And Adolescents?", *A Summary of Studies, 1995-2009. Obesity Reviews*, (12), 73-83.
9. Cook, J., Black, M., Chilton, M., Cutts, D., Ettinger de Cuba, S., Heeren, T., Frank, D. (2013). "Are food insecurity's health impacts underestimated in the U.S. Population? Marginal Food Security also Predicts Adverse Health Outcomes in Young U.S. Children and Mothers," *American Society for Nutrition*, 4, 51-61.
10. Seligman, H., Laraia, B., & Kushel, M. (2009). "Food Insecurity Is Associated with Chronic Disease among Low-Income NHANES Participants", *Journal of Nutrition*, 304-310
11. Gundersen, C., Kreider, B., & Pepper, J. (2011). "The Economics of Food Insecurity in the United States. *Applied Economic Perspectives and Policy*", 33(3), 281-303.
12. Gundersen, C. (2013). "Food Insecurity Is an Ongoing National Concern", *Advances in Nutrition: An International Review Journal*, 4, 36-41.
13. Troy, L., Miller, E., & Olsen, S. (2011). "Hunger and obesity understanding a food insecurity paradigm: Workshop Summary", (pp. 1-240). Washington, D.C.: National Academies Press.
14. Nord, M., Coleman-Jensen, & Gregory, C. (2013). "Prevalence of U. S. Food Insecurity is Related to Changes in Unemployment, Inflation, and the Price of Food", *United States Department of Agriculture: Economic Research Services*, 1-18.
15. Journal of American Dietetic Association. "Position of the American Dietetic Association: Food Insecurity in the United States," 2010. http://gfbf.org/_pdf/mission/ADA_Position.pdf
16. Wilde (2007). "Measuring the Effect of Food Stamps on Food Insecurity and Hunger: Research and policy considerations", *The Journal of Nutrition*, 137, 307-310.
17. Feeding America. "Hunger and Poverty Fact Sheet," 2015. <http://www.feedingamerica.org/hunger-in-america/impact-of-hunger/hunger-and-poverty/hunger-and-poverty-fact-sheet.html>
18. Ivers, L., & Cullen, K. (2011). "Food insecurity: Special Considerations for Women", *American Journal of Clinical Nutrition*, 94.
19. Hodgson, K. (2012). "Planning for Food Access and Community-Based Food Systems: A National Scan and Evaluation of Local Comprehensive and Sustainability Plans", *American Planning Association*. 1-175.
20. Harmon, A. H. & Gerald, B. (2007). "Position of the American Dietetic Association: Food and Nutrition Professionals Can Implement Practices to Conserve Natural Resources and Support Ecological Sustainability", *Journal of the American Dietetic Association* 107:1033-1043.
21. National Center of Farmworker Health. "Facts about Farmworkers. National Center of Farmworker Health," 2012 <http://www.ncfh.org/docs/fs-Facts%20about%20Farmworkers.pdf>
22. Vallianatos, M., Shaffer, A., & Gottlieb, R. (2002). "Transportation and Food: The Importance of Access", *Center for Food and Justice, Urban and Environment Policy Institute*. 1-8.
23. Dyer, J.F., Bailey, C., & Tran, N.V. (2009). "Ownership Characteristics of Heir Property in a Black Belt County: A Quantitative Approach", *Southern Rural Sociology*, 24(2), 192-217. <http://www.ag.auburn.edu/auxiliary/srsa/pages/Articles/SRS%202009%2024/2/SRS%202009%2024%202%20192-217.pdf>
24. United States Department of Agriculture. "2012 Census of Agriculture Highlights," 2014. http://www.agcensus.usda.gov/Publications/2012/Online_Resources/Highlights/Women_Farmers/Highlights_Women_Farmers.pdf
25. PBS.org. "Homecoming: Black Farming and History". n.d. www.pbs.org/homecoming/history1.htm
26. Buzby, J.C., Wells, H.F., & Vocke. (2006). "Possible Implications for U.S. Agriculture from Adoption of Select Dietary Guidelines. United States Department of Agriculture. http://www.ers.usda.gov/media/860109/err31_002.pdf
27. Story, M., Hamm, M.W., & Wallinga, D. (2009). "Food Systems and Public Health: Linkages to Achieve Healthier Diets and Healthier Communities," *Journal of Hunger and Environmental Nutrition*. 4, 219-224.
28. Public Health Law Center. "Access to Healthy Foods: Challenges and Opportunities," 2012. <http://publichealthlawcenter.org/sites/default/files/resources/PHLC%20Access%20to%20Healthy%20Food%20-%20Challenges%20and%20Opportunities%202012.pdf>
29. Arnold, C. (2007). "Fair and Healthy Land Use: Environmental Justice and Planning. Planning advisory service report," 549/550. Chicago American Planning Association.
30. Office of Disease Prevention and Health Promotion. "Dietary Guidelines for Americans, 2015. <http://health.gov/dietaryguidelines/>

31. Laraia, B. (2013). "Food Insecurity and Chronic Disease," *Advances in Nutrition: An International Review Journal*, (4), 203-212.
32. Food Research and Action Center. "Food Insecurity and Obesity: Understanding the Connections," 2011. http://frac.org/pdf/frac_brief_understanding_the_connections.pdf
33. Armour BS, Pitts MM, & Lee CW. (2008). "Cigarette Smoking and Food Insecurity Among Low-Income Families in the United State: 2001. *American Journal of Health Promotion*. 22(6), 386-392.
34. Shepard, D.S., Setran, E., & Cooper, D. (2011). "Hunger in America: Suffering We All Pay For," Center for American Progress. 1-24.
35. Rutten, L., Yaroch, A., Patrick, H., & Story, M. (2012). "Obesity Prevention and National Food Security: A Food Systems Approach," *ISRN Public Health*, 2012(539764), 1-10.
36. Gundersen, C., Garasky, S., & Lohman, B. (2009). "Food Insecurity Is Not Associated with Childhood Obesity as Assessed Using Multiple Measures of Obesity," *Journal of Nutrition*, 139(6), 1173-1178.
37. United States Census Bureau (2002). "Poverty in the United States: 2001," *Current Population Reports*. <http://www.census.gov/prod/2002pubs/p60-219.pdf>
38. United States Census Bureau. "Income and Poverty in the United States: 2013", *Current Population Reports*. 2014. <https://www.census.gov/content/dam/Census/library/publications/2014/demo/p60-249.pdf>
39. McIntyre, L., Wu, X., Fleisch, V., & Emery, J. (2015). "Homeowner Versus Non-Homeowner Differences in Household Food Insecurity in Canada," *Journal of Housing and the Built Environment J House and the Built Environ*. doi:10.1007/s10901-015-9461-6
40. Feeding America. "Rural Hunger Fact Sheet," 2015. <http://www.feedingamerica.org/hunger-in-america/impact-of-hunger/rural-hunger/rural-hunger-fact-sheet.html>
41. Marre, A. (2012). "Rural Areas Lag Urban Areas in College Completion," *United States Department of Agriculture-Economic Research Services*. http://www.ers.usda.gov/amber-waves/2014-december/rural-areas-lag-urban-areas-in-college-completion.aspx#.Vd92Npfw_n0
42. Feeding America. "Latino Hunger Fact Sheet," 2015 <http://www.feedingamerica.org/hunger-in-america/impact-of-hunger/latino-hunger/latino-hunger-fact-sheet.html>
43. Feeding America. "African American Fact Sheet," 2015 <http://www.feedingamerica.org/hunger-in-america/impact-of-hunger/african-american-hunger/african-american-hunger-fact-sheet.html>
44. Bower, K., Thorpe, R., Rohde, C., & Gaskin, D. (2013). "The Intersection of Neighborhood Racial Segregation, Poverty, and Urbanicity and its Impact on Food Store Availability in the United States", *Preventive Medicine*, 58, 33-39.
45. Cheadle A, Psaty BM, Curry S, Wagner E, Diehr P, Koepsell T, Kristal A. (1991). "Community-Level Comparisons between the Grocery Store Environment and Individual Dietary Practices", *Preventive Medicine*. 1991;20(2):250-61.
46. USDA. "Food Deserts", 2015. <http://apps.ams.usda.gov/fooddeserts/fooddeserts.aspx>
47. S. Treuhaft and A. Karpyn, (2010). "The Grocery Gap: Who Has Access to Healthy Food and Why It Matters.," PolicyLink, http://thefoodtrust.org/uploads/media_items/grocerygap.original.pdf
48. Baker, E., Schoolman, M., Barnidge, E., & Kelly, C. (2006). "The Role of Race and Poverty in Access to Foods That Enable Individuals to Adhere to Dietary Guidelines", *Preventing Chronic Disease Public Health Research, Practice, and Policy*, 3(3), 1-11
49. Robert Wood Johnson Foundation. "Do All Americans have Equal Access to Healthy Foods?", 2012. <http://www.rwjf.org/en/library/research/2012/12/do-all-americans-have-equal-access-to-healthy-foods-.html>
50. Powell, L., Slater, S., Mirtcheva, D., Bao, Y., & Chaloupka, F. (2007). "Food Store Availability and Neighborhood Characteristics in the United States", *Preventive Medicine*, 44, 189-195.
51. Galvez, M. P., Morland, K., Raines, C., Kobil, J., Siskind, J., Godbold, J., & Brenner, B. (2008). "Race and Food Store Availability in an Inner-City Neighbourhood", *Public Health Nutrition*. doi:10.1017/S1368980007001097measuring
52. Ver ploeg, M., Breneman, V., Farrigan, T., Hamrick, K., Hopkins, D., Kaufman, P., . . . Tuckermanty, E. (2009). "The Economics of Supermarket and Grocery Store Location," *In Access to Affordable and Nutritious Food Measuring and Understanding Food Deserts and their Consequences: Report to Congress*, ([Rev. Sept. 3, 2009] ed.). Washington, D.C.: U.S. Dept. of Agriculture, Economic Research Service.
53. Bodor, J. N., Rose, D., Farley, T. A., Swalm, C., & Scott, S. K. (2008). "Neighbourhood Fruit and Vegetable Availability and Consumption: the Role of Small Food Stores in an Urban Environment", *Public Health Nutrition*. doi:10.1017/S1368980007000493
54. PolicyLink. "Equitable Development Toolkit: Access to Healthy Food", 2001. <http://www.policylink.org/sites/default/files/access-to-healthy-food.pdf>.
55. Block, J., Scribner, R., & DeSalvo, K. (2004). "Fast Food, Race/Ethnicity, and Income: A Geographical Analysis", *American Journal of Preventive Medicine*, 27(3), 211-217.
56. Laska, M., Borradaile, K., Tester, J., Foster, G., & Gittelsohn, J. (2009). "Healthy Food Availability in Small Urban Food Stores: A Comparison of Four US Cities", *Public Health Nutrition*, 13(7), 1031-1035.
57. Ogden, C., Carroll, M., Kit, B., & Flegal, K. (2014). "Prevalence of Childhood and Adult Obesity in the United States, 2011-2012", *Journal of the American Medical Association*, 311(8), 806-814.
58. Food Research and Action Center. (2010). "Why Low-Income and Food Insecure People are Vulnerable to Overweight and Obesity", Food Research and Action Center.
59. National Institute of Health. "What Are the Health Risks of Overweight and Obesity?" 2012. <http://www.nhlbi.nih.gov/health/health-topics/topics/obe/risks>
60. Seligman HK, Schillinger D. (2010). "Hunger and Socioeconomic Disparities in Chronic Disease", *New England Journal of Medicine*, 363(1):6-9.
61. Berg, J. (2010). "Feeding Opportunity: Ending Child Hunger Furthers the Goal of Cutting U.S. Poverty in Half Over the Next Decade", http://www.nokidhungry.org/sites/default/files/feeding_opportunity.pdf
62. Stewart, R., Korth, M., Langer, L., Rafferty, S., Silva, N., & Rooyen, C. (2013). "What Are the Impacts of Urban Agriculture Programs on Food Security in Low and Middle-Income Countries?", *Environmental Evidence*, 2(7), 1-13.

63. Feeding America. "Child Hunger Fact Sheet". 2015. <http://www.feedingamerica.org/hunger-in-america/impact-of-hunger/child-hunger/child-hunger-fact-sheet.html>
64. Feeding America. "Child development", 2015. <http://www.feedingamerica.org/hunger-in-america/impact-of-hunger/child-hunger/child-development.html>
65. Melchior, M., Chastang, J., Falissard, B., Galera, C., Tremblay, R., Cote, S., & Bolvin, M. (2012). "Food Insecurity and Children's Mental Health: A Prospective Birth Cohort Study. *PLOS*, 7(12), 1-7.
66. Feeding America. "Senior Hunger Fact Sheet", 2015. <http://www.feedingamerica.org/hunger-in-america/impact-of-hunger/senior-hunger/senior-hunger-fact-sheet.html>
67. Lee, J., & Frongillo, E. (2001). "Nutritional and Health Consequences Are Associated with Food Insecurity Among U.S. Elderly Persons", *The Journal of Nutrition*, 131, 1503-1509.
68. Coleman-Jensen, A., & Nord, M. (2013). "Disability Is an Important Risk Factor for Food Insecurity", United States Department of Agriculture, http://www.ers.usda.gov/amber-waves/2013-may/disability-is-an-important-risk-factor-for-food-insecurity.aspx#.Vc0GuZfw_n0.
69. Food Research and Action Center. "SNAP Matters for People with Disabilities", 2015. http://frac.org/pdf/snap_matters_people_with_disabilities.pdf
70. Widsome R, Jensen A, Bangertner A, Fu SS. (2014). "Food Insecurity among Veterans of the US Wars in Iraq and Afghanistan", *Public Health Nutrition*.
71. Lee, J. (2013). "Food Insecurity and Healthcare Costs: Research Strategies Using Local, State, and National Data Sources for Older Adults", *Advances in Nutrition: An International Review Journal*, 4, 42-50.
72. Food Research and Action Center. "FRAC facts: Why Congress Must Protect and Strengthen SNAP", 2015. http://frac.org/pdf/leave_behind_2015_snap_protect_strengthen.pdf
73. Centers on Budget and Policy Priorities. "Chart book: Snap Helps Struggling Families Put Food on the Table". Center on Budget and Policy Priorities. 2015. <http://www.cbpp.org/cms/?fa=view&id=3744>
74. Feeding America. "Supplemental Nutrition Assistance Program (SNAP): What is SNAP?", 2015. <http://www.fns.usda.gov/snap/supplemental-nutrition-assistance-program-snap>
75. Oliveira, V., & Frazao, E. (2015). "The WIC Program: Background, Trends, and Economic Issues", 2015 edition. USDA. http://www.ers.usda.gov/media/1760740/eib134_report-summary.pdf
76. Food and Nutrition Services. "National School Lunch Program (NSLP)", United States Department of Agriculture. 2015. <http://www.fns.usda.gov/nslp/national-school-lunch-program-nslp>
77. Food and Nutrition Services. "School Breakfast Program (SBP)", United States Department of Agriculture. 2015. <http://www.fns.usda.gov/sbp/school-breakfast-program-sbp>
78. Food and Nutrition Services. "Child and Adult Care Food Program". United States Department of Agriculture. 2014. <http://www.fns.usda.gov/cacfp/child-and-adult-care-food-program>
79. United States Census Bureau. "Missouri Age-Groups and Sex," American FactFinder. 2012
80. United States Census Bureau. "Selected Economic Characteristics, American Community Survey 1-year estimates," American FactFinder, 2013.
81. United States Census Bureau. "Income and Poverty in the United States: 2013", Current Population Reports. 2014 <https://www.census.gov/content/dam/Census/library/publications/2014/demo/p60-249.pdf>
82. United States Department of Labor. "Minimum Wage Laws in the States-January 1, 2015", 2015. <http://www.dol.gov/whd/minwage/america.htm>
83. Food Research and Action Center. "Profile of Hunger, Poverty, and Federal Nutrition Programs: Missouri", 2015. <http://frac.org/wp-content/uploads/2010/07/mo.pdf>
84. Coleman-Jensen, A., Gregory, C., & Singh, A. "Household Food Security in the United States in 2013", United States Department of Agriculture. 2014. <http://www.ers.usda.gov/media/1565415/err173.pdf>
85. Feeding America. "Hunger in Missouri", 2015. <http://www.feedingamerica.org/hunger-in-america/impact-of-hunger/states/missouri/>
86. Feeding America. "Map the Meal Gap", 2015: Overall Food Insecurity in Missouri by County in 2013", 2015. http://www.feedingamerica.org/hunger-in-america/our-research/map-the-meal-gap/2013/MO_AllCounties_CDs_MMG_2013.pdf
87. Feeding America. "Map the Meal gap 2015: Child Food Insecurity in Missouri by County", 2015. http://www.feedingamerica.org/hunger-in-america/our-research/map-the-meal-gap/2013/MO_AllCounties_CDs_CFI_2013.pdf
88. America's Health Rankings. "Missouri State Data", 2014. <http://www.americashealthrankings.org/Senior/MO>
89. County Health Rankings and Roadmaps. "Missouri: Food insecurity", 2015. <http://www.countyhealthrankings.org/app/missouri/2015/measure/additional/139/data?sort=sc-2>
90. State of Obesity. "The State of Obesity in Missouri", The Trust for America's Health & Robert Wood Johnson Foundation. 2014. <http://stateofobesity.org/states/mo/>
91. Trust for America's Health. (2012). "F as in fat: How obesity threatens America's future 2012. Trust for America's Health and the Robert Wood Johnson Foundation", <http://healthyamericans.org/report/100/>
92. Rosenbaum, D., Dean, S., Greenstein, R. (2013). "Cuts Contained in SNAP Bill Coming to the House Floor Would Affect Millions of Low-Income Americans", Center on Budget and Policy Priorities. 1-19.
93. The Food and Agriculture Policy Collaborative. (n.d.). "Building Healthy Communities", Food Research and Action Center. http://frac.org/pdf/food_ag_policy_collab_brochure.pdf



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