Food Insecurity
- in the Greater Charlotte Area

For more information contact: Chris Cox, linkedin.com/coxcm3
EXECUTIVE SUMMARY

Food insecurity is defined as a lack of access, at times, to enough food for an active, healthy life for all household members, and limited or uncertain availability of nutritionally adequate foods.

Food insecurity and hunger have been linked to many human related health issues including obesity (1, 7, 22), diabetes (2, 3, 4), poor health (1, 2, 3, 4, 7, 22), cognitive disorders (5, 6, 14, 22), behavioral issues (5, 22), and overall low quality of life (7, 22) for tens of thousands of individuals within the greater Charlotte area (8, 9, 10, 11). Food insecurity has been shown to support disproportionate impacts for households containing high risk individuals such as children, elderly, and pregnant women (7, 14, 18, 19). As highlighted in recent reports, food security represents a critical threat to the wellbeing of local residents which is expected to intensify along with population density, escalating costs of living, and lack of access to nutritious food sources. (8, 9, 10, 11)

The overall food security profile of Mecklenburg County is very similar to averages seen across the country. However, family members of Mecklenburg households with children have been found to be twice as likely to be food insecure when compared to the national average, and access to nutritious food sources continues to be an issue for some low-income populations within Mecklenburg County.

Food insecurity is extremely dynamic in nature and unique in its impact to the individual family. The most vulnerable populations are those in a low-income, poverty, or near poverty state for whom nutritious food availability and access are limited.

Communities are taking innovative approaches to addressing food insecurity. These approaches include incentives and capital access for local farmers, cooperative agriculture groups facilitating resource pooling, education on sustainable farming and nutritious food preparation, strategic grocery store placement, and direct local farmer to customer product sales.

In this paper we will first explore the topic of food insecurity and define some commonly used terms. Then we’ll take a look at food security’s specific impact to the greater Charlotte area. Finally we’ll explore some potential opportunities for improvement.
# TABLE OF CONTENTS

**INTRODUCTION** ................................................................................................................. 4

**BACKGROUND** .................................................................................................................... 7

Brief History  
Food Security Definition  
4 Dimensions  
National and Local Impact

**OPPORTUNITIES** .................................................................................................................. 13

Measurement  
Programs

**CONCLUSION** ....................................................................................................................... 15

**GLOSSARY** ............................................................................................................................ 16

**REFERENCES** ........................................................................................................................ 17

**PROGRAM RESOURCES** ..................................................................................................... 19
INTRODUCTION

Food insecurity is defined as a lack of access, at times, to enough food for an active, healthy life for all household members, and limited or uncertain availability of nutritionally adequate foods.

Food insecurity and hunger have been linked to many human related health issues including obesity (1,7,22), diabetes (2,3,4), poor health (1,2,3,4,7,22), cognitive disorders (5,6,14,22), behavioral issues (5,22), and overall low quality of life (7,22) for tens of thousands of individuals within the greater Charlotte area (8,9,10,11). Food insecurity disproportionately impacts households containing high risk individuals such as children, elderly, and pregnant women (7,14,18,19). Food security represents a critical threat to the wellbeing of local residents which is expected to intensify with increases in population density, escalating costs of living, and lack of access to nutritious food sources. (8,9,10,11)

Food insecurity exists when, at some time in the previous year, a member or members of a household lacked consistent, dependable access to “enough food for an active, healthy life”. (13 P.2, 17) Within the United States this tends to be episodic as opposed to chronic, or related to a situation of “limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways.” (13,17 P.29) As such, a strong factor in determining food security is a household’s resilience to destabilizing events, or potential unavailability of food supply due to a number of risk contributors such as economic instability (unemployment, cost of living increases, medical expenses, and recessions), meteorological events (droughts, hurricanes, and related climate change), and transportation disruptions (fuel shortages, vehicle repairs, diversion of key food imports). (20,22)
All economic classes are susceptible to an episodic condition related to a household’s capacity to adjust to destabilizing events. The abruptness and magnitude of a disturbance on the individual household’s food security state, and the family unit’s unique resource buffers (capacity beyond subsistence) dictate the family’s ability to maintain security. Food insecurity is often a reflection of a household’s need to make trade-off decisions amongst perceived priority for basic needs such as housing, medical attention, and nutritionally adequate foods. (12)

Malnutrition, poverty, food insecurity, and their related impacts to human health are deeply interrelated aspects of each other; locking households in a cycle that is difficult to break without targeted services and strategic intervention that works to build resiliency and dampen potentially destabilizing events. (14,16)

Food Security Defined
1996 World Food Summit definition - “Food security exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.” (16)

To help reduce complexity in examining relationships, streamline measurement, and focus analysis, the 1996 World Food Summit definition of food security was grouped into four dimensions; the first three of which are hierarchically related, where each dimension is necessary but not necessarily sufficient to ensure achievement of the next level.

1. **Availability (Level 1)**: Food availability addresses the “supply side” of food security and is determined by the level of food production, stock levels and net trade. In the FAO definition it refers to the term “sufficient”. For a long time food availability had been considered a synonym for food security, translating easily to a linear supply and demand relationship, and making it challenging to educate the public on the more nuanced and dynamic underpinnings.

2. **Access (Level 2)**: Referred to in the FAO definition as “have physical, social, and economic access”. To support this dimension food has to be geographically and logistically available, physical, financially affordable, economic, and socially supported at the inclusion of all socio-cultural groups who need it.
3. **Utilization (Level 3):** Seen expressed in the FAO definition as “safe and nutritious food which meets their dietary needs”. Utilization is defined by sufficient energy and nutrient intake by individuals is the result of good care and feeding practices, food preparation, diversity of diet and intra-household distribution of food. By extension food utilization is also related to clean water, sanitation and health care.

4. **Stability:** Seen in the FAO definition as “all people, at all times”. Even if your food intake is adequate today, you are still considered to be food insecure if you have inadequate access to food on a periodic basis, risking a deterioration of your nutritional status. The family’s food security status may be vulnerable to adverse weather conditions, political instability, or economic factors such as unemployment or rising food prices.

The diagram below illustrates the relationship of each dimension and characteristics that influence their successful achievement.

A combination of charts from reference 15, 20 and 21 showing the inherently hierarchical relationship between the three dimensions, availability, access, and utilization; and the integral multi-directional dependency of the stability dimension to support overall food security. Inherently hierarchical, with availability necessary but not sufficient to ensure access, which is, in turn, necessary but not sufficient for effective utilization.
BACKGROUND

Food security has been a complex topic of study for more than two centuries. As early as 1798 Thomas Malthus documented his concerns in his Essay on the Principle of Population, hypothesizing that population growth would unavoidably surpass food production. Technology and process advancements in agriculture since Malthus’ declaration have managed to keep the pace of production well above population growth, but for how long? Challenges to maintaining this relative level of agricultural production continue to grow in the midst of resource limitations. Agriculture is becoming more centralized and homogeneous, climate change and human development is shifting species habitats, natural landscapes continue to be converted for food production, competing agricultural demands shift biologic resources to energy production, and geographical boundaries and competing political interests challenge logistical access.

Establishing a Framework for Action
The Universal Declaration of Human Rights, as adopted by the United Nations General Assembly in 1948, affirmed the right of everyone to adequate food. At the World Food Summit in Rome in 1996, supported by the Food and Agriculture Organization (FAO) of the United Nations, a unanimously agreed on definition was established stating that “food security exists when all people, at all times, have physical, and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life.” Building on this momentum, the 2000 Extraordinary Meeting of the United Nations General Assembly, and resulting Millennium Development Goals (MDGs), established freedom from hunger as a human right, and expressed 2015 targets for aspects of improved food security.

The issue of food security was brought to global attention with riots in in over 30 developing countries from a destabilizing 2008 world food crisis, which was caused largely by droughts and rising oil prices impacting key food producing areas, and spiking world food prices. Projections for growing populations, demand for food resources, and an evolving understanding of food related health issues,
drove representatives of the largest industrialized nations across the G8 to act in declaration and resource commitment to attain global food security. Shortly after, global food prices subsided, but they soon rebounded and established new highs continuing to pressure price sensitive populations.

At the 2015 United Nations Sustainable Summit aggressive continuing international action was agreed upon transforming the MGD’s beyond the original 2015 targets. 17 new Sustainable Development Goals (SDGs) and 169 related targets were adopted, advancing the original MGD agenda and directly addressing food insecurity. SDG number two, Zero Hunger, seeks to “end hunger, achieve food security and improved nutrition and promote sustainable agriculture” by 2030.

Recent studies at both a national and local level shed some light on dynamic relationships that most directly impact the Mecklenburg area population. Looking at the most recent national food security study annually conducted by the USDA we see trends amongst US households that suggest a continuing recovery from food insecurity highs seen in 2011. At just over 12%, 2016 levels of food insecurity are continuing to trend down having dripped approximately 3% across the country since 2011.

Annual USDA assessment of household food security supported by survey responses about behaviors, conditions, and experiences that are related to food access. The questions cover a wide range of severity of food access problems, from worrying that food will run out to not eating for a whole day. Each question specifies a lack of money as the reason for the behavior or condition in question so that reduced food intake due to voluntary fasting or dieting does not affect the measure. Based on the number of food-insecure conditions it reports each household is categorized into either high food security, marginal food security, low food security, or very low food security. Households with low food security report primarily conditions indicating anxiety about their food situation and reduced quality, variety, or desirability of their diets. Most report little or no reduction in food intake. Households with very low food security also report those conditions and, in addition, report multiple indications of disrupted eating patterns and reduced food intake. (13)
The overall food security profile of Mecklenburg County is very similar to that seen at the national level. Mecklenburg has food insecurity levels of approximately 13% across its population in 2015, as compared with the 2016 national average at 12.3 (down 1.7% from 2014). However, when comparing local and national averages in food securities impacting children, Mecklenburg county shows a significant disparity.

Family members of Mecklenburg households with children are twice as likely to be food insecure than the national average. Amongst households with children across the U.S. approximately 16.5% were found to be food insecure (8.5% adults only within the household, and 8% both children and adults within the household) as compared to 35% across Mecklenburg county (19% adults only within the household, and 16% both children and adults within the household). This disparity is largely attributed to annual increases in the number of Mecklenburg county residents living in poverty, suggesting that additional pressures related to non-income generating dependents within low income households stresses family resources which might otherwise contribute to food security. Only a fraction of eligible children are taking advantage of the Free and Reduced Meal Program with even lower comparable participation in the Summer Food Service Program. Identified potential reasons for this disparity include lack of education on the respective programs (eligibility and access), and a perceived stigma from being associated with the programs.
The 2015 State of the Plate report released by the Mecklenburg County Food Policy Council identified a growth in food desert conditions in low-income household areas impacting over 87,000 residents. \(^8,9,10\) Food deserts are areas that lack access to affordable fruits, vegetables, whole grains, low-fat milk, and other foods that make up a full and healthy diet \(^1\). This number represents an increase in Mecklenburg County since 2010 of over 20% in the number of people under-served for healthy choices. This condition doesn’t mean that there isn’t available food in these areas; there was also a substantial increase in the number of non-full service food stores, but these are stores void of the healthy options that define food deserts. Filling the void, these non-full service food outlets increase exposure of residents to energy-dense, processed foods containing high concentrations of fat, sugar and sodium, leading to poorer health outcomes compared to a diet high in complex carbohydrates and fiber. \(^23,24\)
Residents involved in the 2015 study expressed concern about the increase in fast food restaurants and non-full service food stores. The residents asked for options that will lead to more healthy, affordable, and convenient choices in their neighborhoods. (8)

Surveys and focus group discussions conducted in support of the 2015 Mecklenburg County State of the Plate research reinforce findings that suggest income and poverty are closely linked to food insecurity, though not exclusively. People reporting periods of food insecurity include small numbers of those with college degrees, as well as households indicating income above median levels. Insecure households reported that cost, rather than distance to stores, is the primary barrier to access, but to a lesser extent they were also interested in freshness, health and nutrition. (8)

Largely because of their relative ease of measurement, causes and potential solutions to food insecurity are most often associated with supply-side indicators of availability, access limitations attributed to household economics and geographic availability of healthy food alternatives. (13,14) However, most researchers believe that the relationships which contribute to food insecurity are much more dynamic, multi-dimensional and nuanced. “Food security is more about the lived experience of households” (8 p.2 , 22), and the additional responsibilities of caring for household dependents such as children, elderly, and those with costly medical conditions shift the priority considerations associated with acquisition of basic needs.
Research across houses with similar incomes and geographical access to food resources shows sensitivity to households containing members who are unemployed but looking for work, or have special needs such as a disability. On the other hand, elderly members were found to be more financially stable and as such increased the households likelihood of being food secure. Food insecurity was found to be more prevalent in areas with low average wages, high housing rents, low participation in the National School Lunch Program and Summer Food Service Programs, high unemployment rates, residential instability, low participation in the Supplemental Nutrition Assistance Program (SNAP – food stamps), and high tax burdens on low-income households. (22)

GIS imagery from Charlotte-Mecklenburg Food Policy Council 2015 State of the Plate report. (8) a. Made-to-order meal restaurants by census block grouping. b. Fast food restaurants by census block grouping. c. Stores offering fresh fruits and vegetables by census block group. d. Three communities, highlighted in green, categorized as High-Risk due to their limited offering of non-full-service stores, and drive time in excess of five minutes to a full-service store and to a store that sells fresh produce (fruits & vegetables). A: Brookshire Blvd. Corridor (NC16) between I85 and I485, B: West Blvd Corridor (NC160) between Billy Graham Pkwy & I485, C: Albemarle Rd Corridor (NC 27) between I485 and Mecklenburg County boundary line.
OPPORTUNITIES

Measurement:
Effective, direct food security interventions depend on effective targeting of the vulnerable subpopulation(s) and of the causes of insecurity, as well as prompt responses. (14)

The USDA supports the most comprehensive rigorously tested evaluation and measurement methods on food insecurity within the United States. Through surveys, they attempt to measure a household’s exposure to levels of food security across the previous twelve month period. These tools are made freely available to researchers and policy makers to support scientific analysis and comparability of data for examining scaled relationships.

Additional development is needed to support predictive models for food insecurity that utilize a standardized protocol for consistent longitudinal monitoring at the household and individual level. (14) Focused on food security, a regular and repeated study at these levels could potentially add to the understanding of the more nuanced, cyclical and dynamic variables impacting affected populations.

Programs:
Food security is impacted by a diverse set of industries that support household stability, resilience, and prosperity, but none more directly than food and nutrition. Global trends in these two industries are focused on adapting to climate change while minimizing the impact of production on the environment, reaching and educating vulnerable communities, and increasing food safety and security. (26)

Food insecurity is extremely dynamic in nature and unique in its impact to the individual family. The most vulnerable populations are those in a low-income, poverty, or near poverty state where resources are limited with respect to nutritious food availability, and access. Innovative food security programs include incentives and financial access for local farmers, resource pooling through cooperative agriculture groups, education on sustainable farming and nutritious food preparation, grocery store positioning to eliminate food deserts, and vehicles for facilitating and enhancing local farmer-to-customer relationships.

Government and charitable services are making the largest impact on food security through successful programs that focus on offsetting the cost of nutritious foods for low income households, providing education to farmers and consumers, providing workforce development, and food distribution to food insecure populations. That said the seemingly large disproportionate impact to households with children, and low participation in supporting programs for children, suggests that a concentrated outreach effort to support increased participation in the Universal Free Breakfast and Free and Reduced Meal...
Programs as well as the Summer Food Service Program would be beneficial to these families. Funding for these programs comes largely from grants, tax exempt charitable donations, and government funded programs.

Impact investors are looking for entrepreneurial opportunities that make a difference. With this type of investing there is value to be gained in the social "good" that a venture can achieve, however, competitive and quantifiable returns are still necessary to attract investment dollars. Unless there is a competitive revenue generating component to the value added entrepreneurial venture it is difficult generate investment returns. (25) This need for competitive investment returns creates a challenging situation for solutions to food insecurity where the target population is extremely price sensitive, and increases in any one of a multitude of contributors to the cost-of-living create stress to the household food security state.

These investment dollars have found some traction on the production side in the form of sustainable farming loans targeted at both small to mid-size local farmers supporting cooperative models for the sharing of capital investments, and agro-specific financing that is structured to suit the shorter term and seasonally specific needs of farmers. (26)

Progress is being made in the area of food distribution and ecommerce access that facilitates farmer to consumer and farmer to business relationships such as Local Harvest (www.localharvest.org), Harvest Hand (http://www.harvesthand.com/), and Barn 2 Door (https://www.barn2door.com/). These implemented solutions do not have wide adoption on food insecure populations due to limited online resource availability, prohibitive delivery costs and related product markups, and inconsistent availability of the farm products. Other potential ventures focus on food access and availability, with community models focusing on integrated agriculture and full service grocery stores which specifically target the elimination of food desert areas and food insecure populations. Local examples include Sow Much Good, Seeds for Change Project, and the Healthy Corner Store Initiative (See the Program Resources section for more details and contact information).
CONCLUSION

Growing evidence indicates that food insecurity can have major effects on an individual’s nutrition, health, and wellbeing; as well as negative impacts to child psychosocial development and learning. Within the United States food insecurity is seen largely as an episodic occurrence for households based on their level of resilience to destabilizing events, or lack thereof.

Although income level is a strong predictor food security for large groups of households, individual households are affected by many factors that make them substantially more or less likely to be food insecure than would be inferred from their income alone. (22) That said, income, and factors affecting a household’s income, continue to be the leading indicator of a household’s potential to be food insecure. Financially stressed households are more susceptible to disruptions such as increases in the cost of living, unemployment, and medical expenses; which also increases their vulnerability to food insecurity.

The issue of food insecurity is further compounded by its rigidity in historically established linear agricultural practices, which tend to group agriculture into large unsustainable monoculture crops with distribution controlled by large store fronts. There is a need to rethink the model in support of localized food production that economically connects local sustainable farming with consumers, and targets incentives focused on availability for unreserved or impoverished populations focused on increasing access to full-service nutritious resources and eliminating food deserts.

Impact investing is relatively new to the area of food security without much proof of concept to draw on for model implementation. Achieving investment returns with programs that target financially challenged populations is a daunting prospect, but there are initiatives beginning to gain traction to include cooperative pooling of assets amongst local small to mid-sized farmers and financing vehicles that are structured to suit their unique needs, innovative technology that increases access to nutritious food sources by enabling more direct farm-to-consumer commerce, and shared community ownership of solutions that empower those impacted toward long-term change.

Economic-assistance, food-assistance, education, and job training programs help reduce vulnerability to food insecurity by providing a safety net and building resiliency toward future potential disruptions, but the largest impact on long-term reductions in food insecurity for Mecklenburg county will most likely come from targeted policies and programs that improve employment, the promotion of education supporting healthy diets and proper food preparation, and increased earnings opportunities for households most vulnerable to food insecurity.
Glossary

Food Security:
1996 World Food Summit - “Food security exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.” (16)

USDA – “Food security means access by all people at all times to enough food for an active, healthy life.”

Food Insecurity:
A lack of access, at times, to enough food for an active, healthy life for all household members, and limited or uncertain availability of nutritionally adequate foods.

Low food security (old label=Food insecurity without hunger): is a USDA designation given to households reporting reduced quality, variety, or desirability of diet with little or no indication of reduced food intake. That is they were at times unable to acquire food for one or more household members because they had insufficient money and other resources for food.

Very low food security (old label=Food insecurity with hunger): a sub-class of low food security, represents households reporting multiple indications of disrupted eating patterns and reduced food intake. Households without children were classified as very low food security if they reported six or more food insecure conditions, and households with children were classified as very low food security if they reported eight or more food-insecure conditions, including conditions among both adults and children.

Food desert: Food deserts are areas that lack access to affordable fruits, vegetables, whole grains, low-fat milk, and other foods that make up a full and healthy diet (1). Many Americans living in rural, minority, or low-income areas are subjected to food deserts and may be unable to access affordable, healthy foods, leaving their diets lacking essential nutrients. CDC (https://www.cdc.gov/features/fooddeserts/)

Full-Service Food Store: Stores that sell fresh fruit, fresh vegetables, fresh meat, fresh dairy, and processed foods; typically, what many would consider a grocery store or supermarket, but also includes food warehouse and discount stores.
References


14) Barrett, C.; Measuring Food Insecurity. Science 327 (5967), 825-828. DOI:10.1126/science.1182768. February 2010


Program Resources

USDA Local Food Security Measurement Tools
Standardized modules and procedures to strengthen validity and reliability of resulting measures and assure maximum comparability with national statistics on food security and hunger.

Programs having an impact on food security:
The following programs support Mecklenburg populations by protecting them from disruption and destabilizing events, as well as building resiliency to support growth in food security.

Community gardens building to support a locally owned and operated grocery store.
West Boulevard Neighborhood Coalition
Rickey Hall, president

Healthy corner store initiative (http://www.wbtv.com/story/33809438/tackling-charlottes-food-desert)
Elliott Royal, Mecklenburg County Food Access Coordinator
443-534-1394

Sow Much Good, Inc.
Committed to growing healthy communities in underserved neighborhoods by Providing direct access to fresh, affordable food, educating and engaging residents to adopt healthy eating habits, and advocating for the right of every person to have real food security. Working to transform neighborhoods that suffer from food insecurity into well-served communities.
Robin Hill-Emmons, Founder and Executive Director
http://www.sowmuchgood.org/
Education
Food Policy Council
The Charlotte-Mecklenburg Food Policy Council exists to advocate for policies that build a sustainable, equitable and healthy local food system. The goals of the council are to enhance the health of our citizens, strengthen local economies and market opportunities, and reduce hunger and food insecurity. The Food Policy Council exists to address local food issues primarily through advocacy and education.
http://www.charlottefoodpolicy.org/
Erin Brighton, Director

Food Corps
FoodCorps is a nationwide team of AmeriCorps leaders who connect kids to real food and help them grow up healthy by teaching hands-on lessons about food and nutrition, building and maintaining school gardens and teaching cooking lessons so kids can taste the fresh food they’ve grown, partnering with school cafeterias to integrate locally grown healthy food from local farms.
https://foodcorps.org/

North Carolina Cooperative Extension Services
NC State University community education to support Mecklenburg County and surrounding areas with agriculture, food safety and processing, health and nutrition.
https://mecklenburg.ces.ncsu.edu/
Nelson McCaskill, County Director
704-336-2082

Employment
Goodwill Industries of the Southern Piedmont
Career development and employment training services for enablement and self-sufficiency.
https://goodwillsp.org/
704-372-3434

NCWorks / CharlotteWorks
Provide job-seekers with a variety of no-cost resources, including career advising and (depending on eligibility) training support for career and job placement.
http://www.charlotteworks.com
980-201-3256

Relief Programs
Supplemental Nutrition Assistance Program (SNAP)
Food and Nutrition Services Program (FNS)
Provides assistance to households with limited income and resources.
https://www.mecknc.gov/dss/esd/Pages/FoodandNutrition.aspx
Women Infants and Children (WIC) - USDA
WIC provides basic nutrition services to eligible pregnant, breastfeeding, and postpartum women, as well as infants and children
https://www.mecknc.gov/HealthDepartment/ClinicServices/WIC/Pages/Default.aspx
704-336-4700

Free and Reduced Meal Program - USDA
Charlotte-Mecklenburg Schools
http://www.cms.k12.nc.us/cmsdepartments/cns/Pages/FreeandReducedMeals.aspx

Summer Food Service Program - USDA
Summer program to provide nutritious meals at no cost to help children (ages 1-18) in low-income areas get the nutrition they need to learn, play, and grow throughout the summer months when they are out of school.
http://www.cms.k12.nc.us/cmsdepartments/cns/Pages/SummerFoodServiceProgram.aspx

Universal Free Breakfast - USDA
Breakfast is offered daily in all Charlotte-Mecklenburg county schools before the start of the school day at NO CHARGE to students. All students are allowed one breakfast each school day during breakfast serving times.
http://www.cms.k12.nc.us/cmsdepartments/cns/Pages/UniversalFreeBreakfast.aspx

Food banks and Soup kitchens
Second Harvest Food Bank of Metrolina and Feeding America
Provides regional distribution of food and grocery items training, technical assistance and hunger education to charitable agencies that assist people in need across 19 counties in the greater Charlotte, NC area.
500-B Spratt Street, Charlotte, NC 28206
704-376-1785
https://www.secondharvestmetrolina.org

© 2017 SP3 All Rights Reserved