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Assessing Food Insecurity in the Hudson Valley Through the Capabilities Lens

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by
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Dedicated to all who are working towards
a sustainable and just food system

Acknowledgments

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I would like to start off by thanking my family and friends (who are also my family) for holding me tight and close during this difficult time. Despite the drastic changes the world has been experiencing, your love and affirmations have radiated positivity and warmth, keeping me grounded throughout. I love you all endlessly and am deeply grateful to the moon and back.

~

Thank you to my advisor, Gautam Sethi who has challenged me throughout this process and pushed me out of my comfort zone to achieve something I can look back and be proud of. I am truly grateful to have had you as an advisor. Also thank you to my board members, Peter Klein and Peter Rosenblum. I appreciate all of you and all you do and can't thank you enough. Your knowledge and wisdom is boundless, and I am thankful for all I have learned.

~

Thank you to The Bard Farm and the people who make it possible. My love for farming began here, and my desire to do and understand more in the communities around me grew from it.

~

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Abstract

In the Hudson Valley Region in Upstate New York there is an existing conundrum in which despite all areas of the region being covered by farmland with an abundance of fresh food available in every county; there are still people going hungry and experiencing food insecurity. Low-income communities as well as low-access communities are disproportionately dealing with the inequities of the Hudson Valley food system. This project looks at past and existing frameworks towards assessing and measuring food security and discusses these approaches in relation to the methodologies being employed by local organizations to assess the prevalence of food insecurity in the region. This project finds that many barriers to food security experienced by communities include lack of sufficient income, high housing costs in conjunction with low wages, lack of transportation in conjunction with locality, access, cultural and language barriers, and race and ethnicity. This project takes a closer look at the application of Amartya Sen's Capability Approach to food security analysis, by urging policy makers and organizations to look at food security and the food system in a more holistically and integrated way. Many local organizations focus on the availability and access dimensions of food security, while excluding the utilization component, as well as individual capabilities. As agents of one's own life and future, individual's make choices on how they want to live based on the lives they choose to value. Capabilities are further dependent on a person's real freedom or opportunities to achieve the lives they value living without being constrained by systemic forces. Through this analysis we see how many issues pertaining to food security are not solely a problem of the food and agriculture sectors. The capability approach takes this into account. The approach further addresses the quality, utilization, and the social acceptability of food, while acknowledging that human well-being and development needs to be looked at from a more holistic lens as many obstacles to living healthy and fulfilling lives stem from an interconnected web of systemic issues.

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Chapter 1
Introduction

What comes to mind when you think of the Hudson Valley in Upstate New York? For many it is rolling green hills, pastoral settings riddled with barnyard red. The Hudson Valley is bursting with industries from all sectors and in regards to its food and agriculture sector, it is truly a cornucopia of abundance with thousands of farms scattered across every region of the valley. From this imagery, we may incorrectly assume that the majority of individuals in the valley live comfortable and healthy lives with the abundant availability of fresh fruits and vegetables growing around every corner. Despite the wide availability of fresh food in the valley, it is beset by significant pockets of deprivation. It is this conundrum that drives my research. In this essay, I ask: Why are some people going hungry and experiencing food insecurity in one of the most farm and food rich areas of the country?

The term 'food justice' places its attention on the inequities within a food system as a whole, and focuses on "ensuring that food system benefits and burdens are shared fairly; ensuring equal opportunities to participate in food system governance and decision making; and ensuring that diverse perspectives and the ways of knowing about the food system are recognised and respected (Midgley & Coulson, 2016)." Simply put, the term focuses on the ability for communities to exercise their right to grow, sell, acquire, and eat healthy foods. Healthy foods are considered those which are fresh, affordable as well as culturally-appropriate. Food injustice highlights a paradoxical issue present in the Hudson Valley, "agricultural abundance and stability, on one hand, and hunger and inequity, on the other (Broad, 2016)." The term food security derives from the implications of food justice. At the broadest level, food security at the individual, national, regional and global levels [is achieved] when all people, at all times, have

physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life (*1996 World Food Summit*). The academic literature goes deeper than the definition above. There are various definitions of food security that have evolved over the years, each placing increasing and relevant attention on the inequities of food insecurity.

This essay will analyze past frameworks and approaches that have been used to assess and measure food security. The purpose of this is to assess and analyze existing frameworks for measuring food security and weigh the advantages and disadvantages of each. The focal approach of this essay is the capability approach. Despite it being a human development approach focused on well-being, it has a prominent application to food security, and addresses salient variables and conditions necessary for achieving a more holistically integrated, comprehensive analysis of food security. This essay will use the applied capabilities lens of food security to assess the approaches some of the local organizations are doing in Hudson Valley to analyze and measure the prevalence of food insecurity in the valley.

The Capability Approach is inherently useful in its application to food security as it evaluates and measures a diverse set of variables and conditions often excluded in past food security frameworks. More specifically, the capability approach rejects past and existing theories and approaches focused on utilitarianism, as "they rely *exclusively* on utility and thus exclude non-utility information from our moral judgements (Robeyns, 2016)." How is this non-utility information represented? It can include a person's additional physical needs (being food secure), as well as social or moral principles (human rights). Under the utilitarian framework, "these features of life and these principles have no intrinsic value (Robeyns, 2016)." It is through this

non-utility focus in which the main difference of the capability approach is highlighted. Existing frameworks tend to focus primarily on the supply side (i.e. utilitarianism perspective). For instance, people can have adequate income and transportation and still not be able to achieve the health or well-being outcome they are seeking. The capability approach fills in this gap by placing strong emphasis on individual health, well-being, and personal development by focusing simply on what people are able to do with their lives based on the lives they choose to value.

For that reason, value plays a crucial role in our analysis of capabilities. How do we determine a person's values? Who defines needs? This approach addresses these interpersonal evaluative questions through two prominent metrics, 'functionings' and 'capabilities.' Functionings are a person's actual 'beings' and 'doings' (i.e. being well nourished; taking care of a child), while their capabilities are, "the real opportunities they have to realize those functionings (Robeyns, 2016)." Because of this, agency and freedom play critical roles in the evaluation of capabilities. While people have the agency to choose the lives in which they value living, their capabilities are ultimately dependent on the freedom in which they have to exercise their agency. In many cases we see systemic barriers being an obstacle for individuals to achieve their valued functionings as their capabilities to do so are limited by a lack of agency and freedom to make the choices in which they value.

By placing the focus at the individual level, the capability approach urges policy makers to recognize the disparity of individuals by considering *all valued functionings*. Therefore, "the capability approach, fully developed, could appreciate *all* changes in a person's quality of life: from knowledge to relationships to employment opportunities and inner peace, to self-confidence and the various valued activities made possible by the literacy classes (Alkire, 2005)." Many

issues pertaining to food security are not solely a problem of the food and agriculture sectors. The capability approach acknowledges that human well-being needs to be looked at from a more holistic lens as many obstacles to living healthy and fulfilling lives stem from an interconnected web of systemic issues.

This essay will further look at three reports done locally in the Hudson Valley. The first report: Poughkeepsie Plenty: A Community Food Assessment and the second report: Food Insecurity in Ulster County, were done through the Center for Research, Regional Education and Outreach. This organization, "conducts studies on topics of regional interest, brings visibility and focus to these matters, fosters communities working together to better serve citizenry, and advances the public interest in our region (Nevarez, Grove, Tobin, & Simons, 2014)." Other organizations that contributed to these reports were The State University of New York at New Paltz, and The Power of SUNY, which is the State University of New York's Strategic Plan adopted in 2010, with the focus of reinforcing SUNY's role as an, "enduring, enriching presence in communities" across the state. Additionally, the Poughkeepsie Plenty Food Coalition contributed to the Poughkeepsie Plenty report on food security. This coalition is composed of individuals and organizations who, "have envisioned Poughkeepsie as a food city where everyone can secure, prepare, enjoy and benefit from healthy food (Nevarez, Grove, Tobin, & Simons, 2014)." Poughkeepsie Plenty Food Coalition further works to organize their communities and create a diverse movement for change within their communities to, "ensure the right for all residents of the City of Poughkeepsie to secure sufficient and nutritious food (Nevarez, Grove, Tobin, & Simons, 2014)." The final report was done by the Hudson Valley Farm Hub and focuses on Elements of Access within the Farm Hub Region. This report was

prepared by Joshua Simons, who is a Senior Research Associate at the Benjamin Center for Public Policy Initiatives. He also served on the United Way ALICE Research Advisory Committee for the State of New York. The Benjamin Center aids to connect local governments, businesses, and not-for-profit organizations in the Hudson Valley by offering services that aid towards applied research, evaluation, and policy development. Moreover, United for ALICE focuses on identifying, assessing, and measuring financial hardships experienced by people at the local level to further enhance existing local, state, and national poverty measures (*ALICE Methodology*, n.d.).

This essay will begin by diving into a comprehensive but brief journey through the Hudson Valley. It will illustrate the geography, demographics, and an economic overview within the valley as well as offer a brief but insightful historical background on farming in the valley and how that has evolved over time. From there, the types of farms will be highlighted to show which crops are typically grown and moreover, which groups within the Hudson Valley are feeling the brunt of food insecurity. The following chapter will transition into discussing a comprehensive literature review on the issue of food insecurity by highlighting the ways in which past and existing frameworks and approaches of food security have been perceived, assessed, measured, and analyzed paying particular attention to the Capability Approach. The essay will then move on to analyze three reports done locally in the Hudson Valley: 1) Poughkeepsie Plenty: A Community Food Assessment; 2) Food Insecurity in Ulster County; and 3) Elements of Access within the Farm Hub Region. This chapter will give the reader a sense of the state in which food insecurity is prevalent in different regions of the valley. The following chapter will combine the findings (and methodologies) of the literature review with that of the

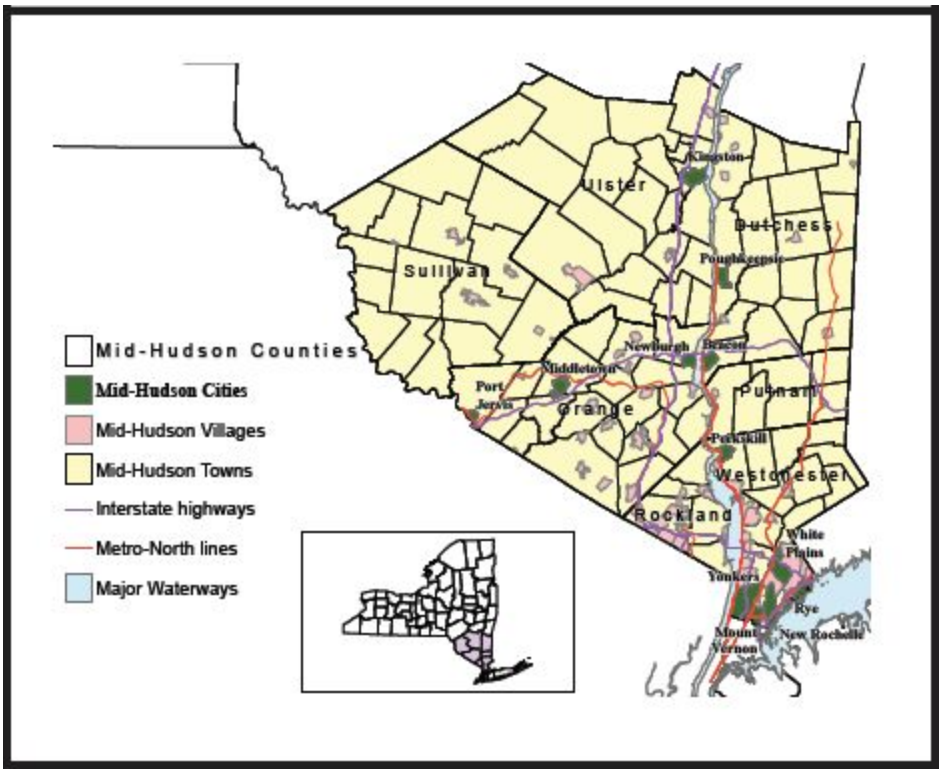
local reports to analyze the relationship between what is going on at the ground level versus in academia. The final chapter will conclude by filling in the gaps between what local organizations are doing and where they could possibly benefit from adopting a greater focus on individual capabilities when assessing and measuring food insecurity in the Hudson Valley.

Chapter 2
"A Hudson Valley Snapshot"
History of Farming in the Valley

The Mid-Hudson Valley Region contains some of the state's largest cities, a multitude of urban centers, rural and suburban villages, and extensive farmlands and forests. This region is comprised of seven counties which include Westchester, Rockland, Putnam, Orange, Dutchess, Ulster and Sullivan county. The majority of the counties in the mid or lower Hudson Valley region are suburban, with the majority of development occurring near the Hudson River, Metro-North railroad stations and major roadways that go to New York City. The predominantly suburban counties are further south and include Westchester, Rockland, Putnam and Orange. Within Westchester county, development tends to be denser near commuter rail lines and highways; these areas are more urban than suburban and include densely populated villages scattered within well-developed urban areas. The affluent communities in Westchester tend to be less dense and further away from the common commuter areas (P. DiNapoli, 2016).

On the north end of the Mid-Hudson Valley Region we can find the more sparsely populated counties of Dutchess, Sullivan and Ulster; with the exclusion however of the southwest area of Dutchess County and the cities of Kingston and Poughkeepsie. An essential geographical aspect of this area are the Catskill Mountains, which runs through the northern parts of both Sullivan and Ulster counties as well as the Catskill and Delaware Watersheds. These watersheds provide New York City with around 90 percent of the City's drinking water supply (P. DiNapoli, 2016).

Map 1. of New York State's Mid Hudson Region



(P. DiNapoli, 2016)

Demographics

The demographic make-up of the Mid-Hudson Region varies by county. In 2015, over 2.3 million people resided in the region. From 2000 to 2018 there was a 5.2% increase in population within the region (*mhvcommunityprofiles.org*). Westchester County being one of the larger counties has a population of 976,000 while the population in Sullivan County is just under 75,000. The majority of growth in population has taken place in Westchester, Rockland and Orange county. The population of people over 65 years old has the largest growing population in all counties, as well the Hispanic and Latino populations. Moreover, the percentage of white

people in these counties has been declining. (U.S. Census Bureau, 2000 Census, 2010 Census and the 2014 Annual Estimate).

Figure 1. Demographic Indicators, Mid-Hudson

	New York State	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester
Population (2015)*	19,795,791	295,754	377,647	99,042	326,037	74,877	180,143	976,396
Population growth 2000-2010**	2.1%	6.2%	9.2%	4.1%	8.7%	4.8%	2.7%	2.8%
Population growth 2010-2015*	2.0%	-0.7%	1.1%	-0.8%	4.3%	-3.3%	-1.2%	2.7%
Persons per square mile*	420	372	465	430	1,879	77	160	2,268
Median age	38.1	40.8	36.8	42.6	36.4	41.8	42.9	40.3
White persons	65.0%	79.0%	75.4%	89.6%	71.5%	81.1%	87.1%	66.5%
Black persons	15.6%	10.1%	10.2%	2.0%	12.5%	8.8%	5.7%	14.3%
Asian persons	7.8%	3.9%	2.6%	2.3%	6.3%	1.6%	1.8%	5.6%
Persons reporting two or more races	2.8%	2.9%	3.3%	2.4%	2.1%	3.4%	3.6%	3.1%
Persons of Hispanic or Latino origin	18.2%	11.0%	18.8%	12.3%	16.4%	14.3%	9.3%	22.8%
White persons not Hispanic	57.3%	73.5%	67.1%	81.7%	64.2%	73.9%	80.8%	56.1%
Foreign-born persons	22.3%	11.7%	11.2%	12.9%	21.7%	9.9%	7.4%	25.2%
Languages other than English spoken at home	30.2%	15.2%	23.8%	18.8%	37.6%	15.4%	12.0%	33.0%
Median household income	$58,687	$72,471	$70,794	$96,262	$85,808	$49,388	$58,592	$83,422
Bachelor's degree or higher	33.7%	33.4%	28.6%	38.2%	40.7%	21.1%	30.1%	46.0%
Owner-occupied housing units	53.8%	69.5%	69.6%	82.7%	69.0%	65.1%	69.5%	61.9%
Housing units in multi-unit structures	50.7%	28.3%	28.6%	15.3%	32.9%	17.8%	22.1%	49.3%
Persons per household, average	2.62	2.61	2.90	2.85	3.16	2.51	2.45	2.73
Median value of owner-occupied housing units	$283,700	$282,100	$268,500	$362,400	$424,400	$168,800	$226,600	$509,200
Owner costs exceeding 30% of income	32.8%	37.0%	38.9%	37.9%	40.1%	35.4%	35.3%	38.8%
Renters costs exceeding 30% of income	50.8%	50.7%	55.0%	51.1%	56.9%	48.8%	54.2%	53.0%
Child poverty rate	22.1%	10.5%	19.7%	5.7%	23.9%	26.0%	12.9%	12.3%

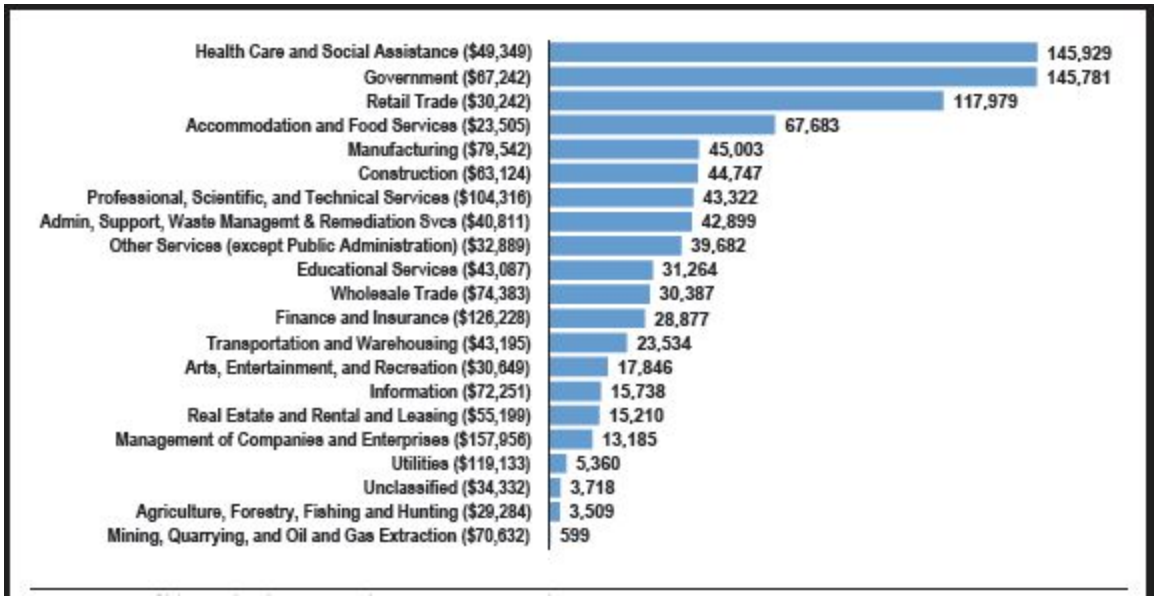
Region Counties and New York State (P. DiNapoli, 2016)

Economic Overview

From an economic perspective, the Hudson Valley is rich in varying types of industry and employment. The Mid-Hudson Valley region employed an average of 882,253 people as of 2014, with employers making an average annual wage of $56,647. Employers in this region of the Hudson Valley earn a wage higher than any other region in the state, aside from New York City (P. DiNapoli, 2016). In 2014, the largest private employers included hospitals, health care providers, large grocery retailers, and higher education institutions such as Home Depot, IBM,

Marist College, Orange Regional Medical Center, ShopRite, Stop & Shop Supermarkets, Target, Vassar Brothers Medical Center, Walmart and White Plains Hospital Association (*NYS Department of Labor, New York State and Labor Market Regions – Largest Private Sector Employers*). The Figure below shows the average wages and employment numbers by each major industry sector for the region in 2014. These statistics were reported by the New York State Department of Labor.

Figure 2. Industry Sectors in Mid-Hudson Region by Number of Employees (with Average Wages), 2014



(P. DiNapoli, 2016)

As shown in figure 2, throughout the state, the health care and social assistance sectors are some of the largest industries in the region and account for the majority of the region's employment. The average wage in this economic sector is relatively low at an annual wage of $49,349, which can be attributed to the fact that the average wage accounts for highly-paid individuals as well as low-wage individuals who make up the majority of the sector (P. DiNapoli, 2016). Furthermore,

the government sector is virtually equal in terms of employment to that of the health care and social assistance sector. Employment in the government sector includes public elementary and secondary school teachers, administrators and employees of the State University of New York (SUNY) including SUNY New Paltz and Purchase and six community colleges (Dutchess, Orange County, Rockland, Sullivan County, Ulster County and Westchester Community Colleges) (P. DiNapoli, 2016).

The two other larger sectors in the region are the retail trade and accommodation and food services. These sectors employ many people in the region, however the professions within those sectors tend to be far less compensated than other jobs in the industries apart from the arts, entertainment and recreation and agriculture, forestry, fishing and hunting sectors. Retail trade and accommodation and food services in conjunction with arts, entertainment and recreation are a prominent component of the regional tourism and cultural landscape of the Hudson Valley and cater towards local as well non-local residents (P. DiNapoli, 2016). This booming trend of "agri-tourism" has aided towards the lure of the Hudson Valley and has attracted people both local and non-local to the area for activities including winery and brewery tours. The majority of this lure is centered around the agrarian ideal and food culture of the Hudson Valley, with farmers markets accessible in every county, people come from all over the country to experience local, high quality fresh food and buy artisanal products that reflect the beauty and agricultural richness of the region (Gray, 2014). Many artists are also lured to the area due to the history of the 19th Century Hudson River School Painters. In her book *Labor and the Locavore*, Margaret Gray writes, "world-famous for the achievements of Hudson River School painters such as Thomas Cole and Frederic Edwin Church, it was one of the first American regions to establish

tourism by taking advantage of the combination of natural beauty, relative proximity to New York City, and ease of transportation." This artistic aspect helped to create the "pastoral rural vernacular that defines the region as a whole" (Gray, 2014).

Farming in the Hudson Valley

The farming community in the Hudson Valley is deeply rooted in agrarian ideals. "The agrarian ideal, also referred to as agrarianism, romantic agrarianism, and the agrarian myth, encompasses three main beliefs: farmers are economically independent and self-sufficient; farming is intrinsically a natural and moral activity; and farming is the fundamental industry of society (Gray, 2014)." This notion of agrarianism has become the prominent ideology of agriculture in the Hudson Valley. It was during the late nineteenth and early twentieth century that the agrarian ideal became the predominant ideology of Hudson Valley agriculture, even though the foundation of this ideal rests on subsistent family farms rather than modern, commercial farms. As farms began to shift their focus away from the small family farm, and became more mechanized, this notion still prevailed and reflected agriculture as a whole in the region (Gray, 2014).

Not only is the agrarian ideal still embraced, whether explicitly or not by all types of farmers including small, local, organic, or corporate farms, it also has become deeply rooted in the public mind itself (Gray, 2014). The ideal farmer, according to Wendell Berry, is "a subsistence grower who does not rely on external labor and is more interested in sustainability rather than profit (Gray, 2014)." However, this ideal farmer shifted in the nineteenth century as the agricultural atmosphere shifted with the introduction of new markets and agricultural

practices. The Hudson Valley began seeing less subsistent small scale family farming and more larger farms focusing on profit. This made it difficult for the small scale farmer to uphold the same agrarian values, yet these values and ideologies were still embedded in the region as a whole and served to be beneficial to agricultural endeavors in the region (Gray, 2014).

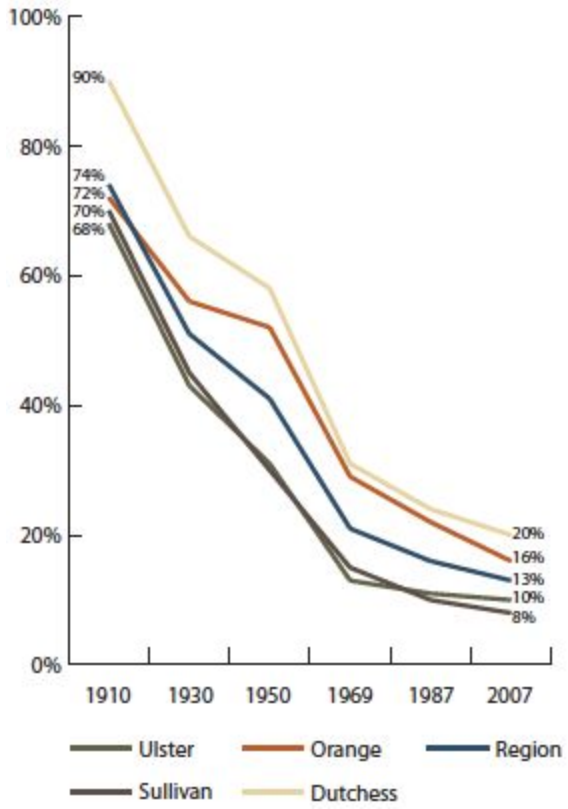
Over the past century, the Mid-Hudson Valley Region has experienced a decline in the number of farms and amount of land used for cultivation due to the bulk of the United States's agricultural production becoming concentrated in the midwest and west. Despite agriculture being deeply rooted in the Mid-Hudson Valley's way of life with some farmers playing crucial leadership roles in their communities, the region recently has been subject to industry changes and development pressures, threatening the agricultural sector. Productive farmland across the region has been sold for housing, commercial, and industrial uses and the cost to sustain these lands for local farmers has increased (Obach & Tobin, 2011).

> "This has challenged our agricultural economy, altered and damaged the natural environment, diminished the vitality of our cities and villages and threatened the rural character of our communities...farming brings with it not just economic and environmental benefits, but also strengthened community ties and increased civic engagement (Obach & Tobin, 2011)."

As of 1910, the State of New York had over 200,000 farms, which occupied 73 percent of state land. However, by 2007, less than 40,000 farms remained and only 24 percent of the state's land was used for agricultural purposes (Obach & Tobin, 2011). The Mid-Hudson Valley region experienced an even steeper decline in comparison to the entirety of the state. A century ago, 74 percent of the region's land was devoted to farming with over 16,000 farms in the region, yet as of 2007 this number has been reduced to 13 percent and there are less than 2,200 farms remaining (Obach & Tobin, 2011).

Dutchess County in particular experienced the greatest decrease in the amount of farmland utilized for agriculture with a decline from 90 percent to 20 percent. Sullivan County showed a decrease from 70 percent to 8 percent, Ulster County from 68 percent to 10 percent, and Orange County from 72 percent to 16 percent (Obach & Tobin, 2011). Although the region has been experiencing a sharp decrease in acreage of land under cultivation, New York State's agricultural products have actually been increasing in economic value within recent years. Illustrating how farming is still a relevant and vital element in the statewide and regional economy (Obach & Tobin, 2011).

Figure 3. Regional Land in Farms: Century Long Trends

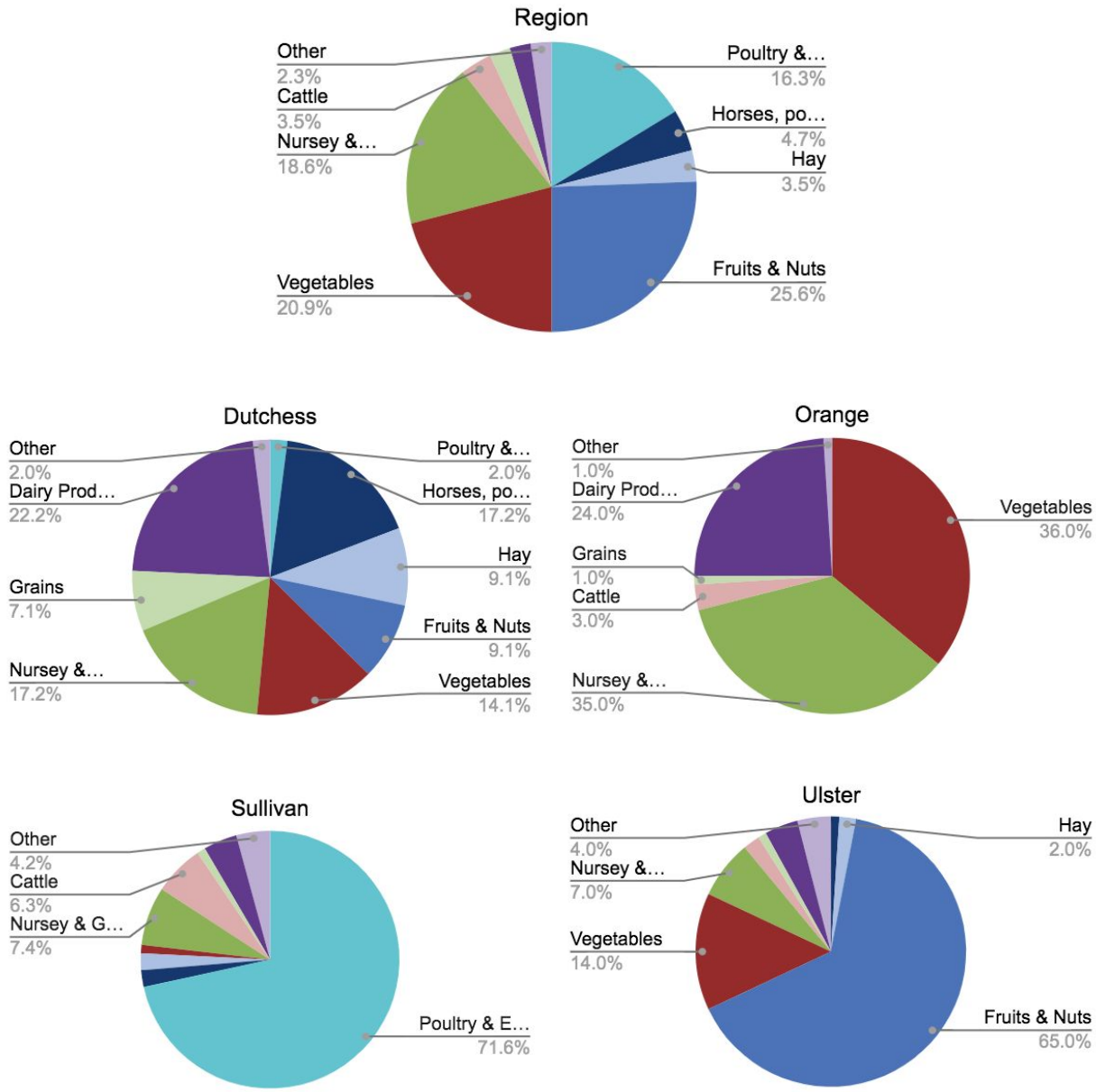


(Obach & Tobin, 2011: USDA Census of Agriculture)

What Types of Farm are in the Hudson Valley?

In the Mid-Hudson Valley region, in 2007, sales of agricultural goods earned the region over $226 million (USDA, 2007). The figure below illustrates different types of farms and which sectors of agriculture are represented within each county and the region as a whole.

Figure 4. Agricultural Products



(Obach & Tobin, 2011) Source: USDA Census of Agriculture 2007. Percentages based on values of sales by commodity group.

In the mid-twentieth century, production in the dairy sector had the largest economic impact, aggregating more than half of all agricultural products sold; currently, the dairy sector only makes up 16 percent of agricultural sales. As shown in figure 4, each county has its own specializations within different agricultural sectors. Ulster County's main agricultural enterprise focuses on the production of apples, fruits, nuts, and berries which makes up around two-thirds of its entire agricultural output (Obach & Tobin, 2011). Sullivan County's leading agricultural enterprise specializes in poultry and egg production, also representing two-thirds of its agricultural products. Orange County has two larger sectors (around 35 percent each) focusing in vegetable production as well as nursery and greenhouse. Furthermore, the dairy sector also makes up 24 percent of production in Orange County. Lastly, Dutchess County reflects the most diversity in terms of its agricultural sectors, with its leading sectors being dairy, nursery and greenhouse products, vegetables, and horse farms (Obach & Tobin, 2011).

In comparison with the national average, farms in New York State are typically smaller. As of 2007, an average farm in New York was around 197 acres while an average farm in the nation was around 418 acres (Obach & Tobin, 2011)." In the mid-to-late twentieth century, as stated prior, farms in the region grew in size as they began industrializing them further, with the average farm in New York being around 223 acres. However, in the past twenty years or so, farms have actually been decreasing in size. Moveover, the median farm size in New York went from 131 acres in 1997 to 95 acres in 2007 (Obach & Tobin, 2011). However, it is important to note that, "despite an increase in the small farm sector, the increase in acreage was mostly concentrated in very large farms. Thus, overall, nationwide, agricultural production continues to be further concentrated in large agricultural enterprises (Obach & Tobin, 2011)."

Typical Hudson Valley Crops

As discussed prior, there are a multitude of agricultural sectors that are represented in the region. In terms of food security, this section is going to focus on the sectors of poultry and eggs, fruits and nuts, vegetables, dairy products, and meat production. Dairy products are New York's leading agricultural product, with milk sales accounting for one half of the total agricultural receipts (*nass.usda.gov*). Meat production focuses on cattle and calves ($183 million), hogs and pigs ($9.7 million), and sheep and lambs ($4.4 million). The poultry sector as of 2010 had receipts for eggs, ducks, broilers, turkeys, and chickens totalling $111 million, with eggs making up $66.2 million of the total sum (*nass.usda.gov*).

Transitioning to field crops, fruits and vegetables made up $2.05 billion in receipts as of 2010. Within that sector, one of the most common fruits grown in the region are apples, with the Lower Hudson Valley region being one of the largest and most important areas for apple production in New York State (*Crops from Eastern New York Commercial Horticulture—Cornell University—Cornell Cooperative Extension*, n.d.). According to the National Agricultural Statistics Service, other fruits typically grown in the state include grapes, tart cherries, pears, and strawberries (*nass.usda.gov*). Moreover, raspberries, blackberries, and blueberries are commonly grown in the region as well as popular stone fruits including apples, apricots, nectarines, peaches, pears and plums (*Crops from Eastern New York Commercial Horticulture—Cornell University—Cornell Cooperative Extension*, n.d.).

As for vegetables, some of the most popular and commonly grown vegetables in the state are sweet corn, which has a value of $71.1 million (concentrated in the Lower Hudson Valley) cabbage, onions, snap beans, tomatoes, pumpkins, potatoes, cucumbers, squash, and cauliflower

(*nass.usda.gov*). Many other common vegetables are grown but those are the most predominant in the region. Furthermore, fields crops including soybeans, wheat, and hay made up a large portion of production within New York State.

Who are the Vulnerable Groups in the Hudson Valley?

The Mid-Hudson Valley region has been gaining residents since 2000 until 2020, with the majority of population growth coming from people over the age of 65 (U.S. Census Bureau, 2000 Census, 2010 Census and the 2014 Annual Estimate) while the population of people under 40 has been declining (including the under 20 group and the 20-39 age group). In terms of diversity, the region is still predominantly white, with this demographic representing 80 percent of total residents. The Hispanic demographic is the largest and fastest growing group, having experienced an 89 percent increase from the year 2000. In particular, Putnam County had the largest increase in its Hispanic population, at 138 percent with Dutchess County at a 99 percent increase. Moreover, second to the Hispanic demographic, the Asian population had a 69 percent growth rate.

In terms of income, as of 2014–2018, Black and Hispanic residents of the region experienced the highest rates of poverty, both at 17 percent. The Asian and White residents of the region had poverty levels each at 10% (*Smithwick*, n.d.). A special report done on food insecurity in the Mid-Hudson Valley Region found that households headed by single parents, single women, Black and Hispanic adults, and people living in rural areas and large cities, had an increased risk for experiencing food insecurity. If the individuals within these groups experience unemployment/underemployment, low and stagnant wages and a rising cost of living, then they

become more susceptible to being food insecure (*Community Foundations of the Hudson Valley Special Report: Food Security.* n.d.). Furthermore, people living in food deserts were considered to be at greater risk as well.

> "People who live in "food deserts" – impoverished urban and rural areas considered both low-income and low access – lack money and easy transportation to a supermarket. Their food choices are often limited to packaged convenience foods available at walkable mini-marts, bodegas and fast food restaurants (*Community Foundations of the Hudson Valley Special Report: Food Security.* n.d.)."

Oftentimes, within the demographic groups listed prior, individuals who experience higher levels of poverty are more vulnerable to experiencing varying degrees of food insecurity.

Despite this understanding, food insecurity is not solely contingent upon income. Oftentimes food insecurity is thought to be primarily a low-income issue and while this is true in many cases; there are many variables and conditions beyond income that can cause an individual or household to experience varying degrees of food insecurity. The following chapter will explore these conditions further by analyzing how past and existing frameworks have approached the issue of food insecurity; and from this, a more comprehensive analysis will formulate.

Chapter 3
Literature Review

In order to understand food insecurity, three main facets need to be addressed: availability, access, and utilization. Is food actively available within a given country, region or county? Within that region, do all people have access to adequate and nutritious food? If people have access to adequate food, do they utilize it in a healthy and beneficial way? These three questions make up the pillars for understanding and assessing food insecurity. Furthermore, the implications of measuring food insecurity can be difficult as the methodologies and metrics used to assess food insecurity oftentimes tend to be transient in their endeavors. Being relevant and useful for a period of time before they become outdated and inaccurate. This chapter compares different methodologies that have been applied to food security and will examine the continuities and discrepancies, as well as the strengths and weaknesses between the approaches and methodologies used. From this, we can distinguish which elements and metrics are most effective in assessment of food insecurity at the individual and household levels.

Food Security Concepts and Definitions

The most commonly used definition of food security was comprised at the 1996 World Food Summit which states that, "Food security, at the individual, household, national, regional and global levels [is achieved] when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life." The purpose of the conference was to set a goal to eradicate hunger, food insecurity, and malnutrition within a decade (*fao.org*). This goal, clearly has not been met. There

are many reasons for this, a couple being a lack of (or inadequate) funding towards food security initiatives as well as ineffective policy making.

A crucial distinction to make is that being food insecure does not necessarily mean an individual or household is hungry. Hunger, defined by the American Institute of Nutrition, is "the uneasy or painful sensation caused by a lack of food (Jones et al., 2013)." Moreover, "hidden hunger" is relevant when discussing food insecurity as it is used to refer to (roughly 2 billion) people who suffer from micronutrient deficiencies (Jones et al., 2013)." Therefore, food insecurity ultimately occurs when one of the conditions in the food security definition above is absent for an individual or household. Food insecurity is ultimately the, "limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways (*Measuring Food Insecurity and Hunger*, 2005)."

While people may have access to food, they may lack access to adequate food that supplies them with the necessary micronutrients making them food/nutrient insecure. On the contrary, an individual or household may lack access to an adequate amount of food entirely constituting them as undernourished meaning that their caloric intake is below the minimum dietary energy requirement (Jones et al., 2013), placing them in the category of undernourished, or more explicitly, food insecure with hunger.

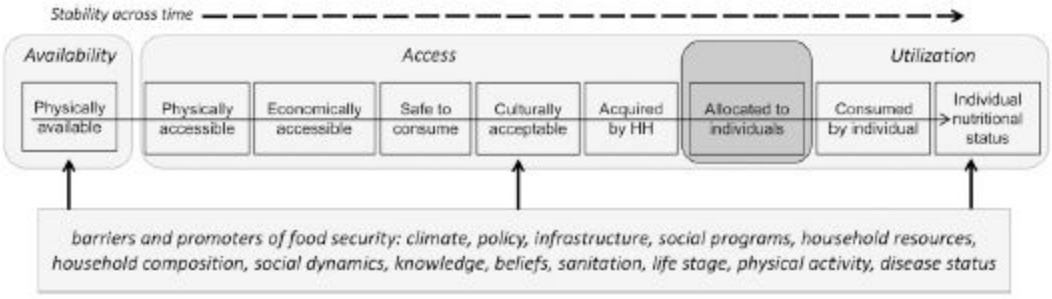
The definition of hunger, however, can be precarious as it is not always clearly defined or it is used interchangeably with food insecurity, which is inaccurate. "An inadequate amount of food intake due to a lack of money or resources," might make an individual or household food insecure, but that does not necessarily make them hungry (Jones et al., 2013). Food insecurity, ultimately is complex in its definition, as it encompasses multiple facets including availability,

access and utilization. A person can have food readily available, but have a difficult time accessing it making them either food insecure or food insecure with hunger, depending on how readily they consume food and their daily caloric intake. Utilization is reflective of a person's ability to use the food they access in a way that offers them the vital micronutrients necessary to be healthy and meet their dietary needs.

Approaches and Metrics used to Measure Food Insecurity

The main metrics used to measure food insecurity may draw from data at national, regional, household, and/or individual levels. They aim to measure food availability, access, and utilization. Food security definitions and metrics should also aim to encapsulate the importance of the idea that is the ability to be able to acquire socially and culturally acceptable foods and to be able to do so in socially acceptable ways (Jones et al., 2013).

Figure 5. The Food Security Conceptual Pathway



(Jones et al., 2013)

As it has been conceptualized, food security is commonly known to rest on three pillars: availability, access, and utilization. Barrett (2010), discusses these pillars being ultimately hierarchical, "with availability necessary but not sufficient to ensure access, which is, in turn,

necessary but not sufficient for effective utilization." While food might be available it does not ensure that an individual will have access to sufficient, safe, and nutritious food. Availability reflects the supply side of food security while access reflects the demand side of food security. The access lens allows one to see how food security is closely related to poverty and socioeconomic adversities. Barret states that since access is inherently a multidimensional concept, measurement then becomes much more difficult than with availability (Barrett, 2010).

Utilization refers to how individuals and households use and consume their food. If an individual or household has access to food, is that food then made good use of? Within their budget, are the foods consumed nutritious and essential or are they consuming unhealthy food? Are the foods safe and prepared in a nutritious way, under sanitary conditions? Utilization ultimately focuses on "fostering greater attention to dietary quality, especially micronutrient deficiencies associated with inadequate intake of essential vitamins and minerals (Barrett, 2010). This chapter is going to move on to highlight five traditional approaches that have been used to assess and measure food security: the Food Availability Approach, the Income-Based Approach, the Basic-Needs Approach, The Sustainable Livelihoods Approach, and The Entitlement and Capability Approach.

The Food Availability Approach

Historically, the lens of food security has been focused on availability at the national level. Does a country have an adequate supply of food available to meet the caloric and nutritional needs of all people in the country? One of the oldest approaches to food security is the "food availability approach." The food availability approach takes the Malthusian view and focuses on physical

food availability relative to food demand. The main emphasis is on the (dis)equilibrium between population and food. For the equilibrium to remain constant, the growth of readily available food should never be lower than the rate of population growth. Food security, thus, becomes simply a matter of how much aggregate food is available (per capita). The emphasis, therefore, is ultimately placed on food availability (Burchi & Muro, 2012).

For this approach, the demand side focuses on the "need" of population reduction through appropriate fertility-rate policies, while the supply side focuses on the need to boost food production, meaning agricultural production (per capita). Agricultural productivity is the main goal with this approach. Burchi and Muro state that despite that the 1996 World Food Summit conceived the newer and more advanced definition of food security, at the time, the focus was still narrowly targeted towards agricultural productivity as the dominating driver of international and regional food security, through rhetoric and implementation (Burchi & Muro, 2012).

This approach focuses on the aggregate (per capita) food availability. Within a closed economy, the emphasis is on food production in contrast to an open economy where the emphasis is on food production and trading. The methodology of this approach focuses particularly on units of analysis, which can range from: "the world in total, to a country, a region, down to a community, a household or a single individual (Burchi & De Muro, 2016)." Economically speaking, the approach can place its focus on a single sector, a cluster of sectors (i.e. the "food system" or "food chain") or can be focused on the entire economy. From this, the units of analysis typically used in the food availability approach are "the country (and its food balance sheet) or the world and the agricultural sector (its production and productivity) (Burchi & De Muro, 2016)."

The metric used in the food availability approach to assess a country's food availability are typically food balance sheets, which are representative of a country's food supply pattern during a specified reference period. Food balance sheets show each primary commodity (food item) that is available for human consumption in correspondence to its sources of supply and how it is utilized (Burchi & Muro, 2012. FAO 2001).

Food balance sheets are an FAO indicator. This data is published annually and is one of the sources used to monitor the Millennium Development Goal (MDG) for hunger. This indicator estimates on a global scale how many people in a country whose daily food availability inadequately provides them with the minimum amount of energy (kilocalories). De Haen and Klasen have criticized it for: a) the possibility of errors in food balance sheets caused by uncertain data received from national level data inputs, and b) possible biases in the parameters used to reflect the inequality of consumption within countries (the coefficient of variation). They considered this indicator to have a solid theoretical framework but had uncertainties and gaps in the database making the present data analysis somewhat uncertain and open to questioning (de Haen & Klasen, 2012).

However, a main strength of the food availability approach is that it implements a unit of analysis that is versatile. It can focus on a single sector or a multitude of sectors, from an individual level to a regional level or to a national level. For example it can focus on a particular food system or chain in a particular region or country or it can be broader on a larger, economy-wide scale. A main weakness of the approach is its outdated perspective on food security. According to this approach, food security simply refers to aggregate (per capita) food availability usually in a given country. Within a closed economy, food security depends

predominantly on food production and stocks as well as with an open economy with the addition to food trade. The demand side, and supply side of this approach is reflective of the growing fears of "scarcity" and "carrying-capacity" at the time. As research now informs us, the main issue with food security is not scarcity but distribution and accessibility (Burchi & Muro, 2012).

The Income-based approach

The second approach shifts the perspective of food availability from a macro-level to a micro-level by assessing the relationship between income and poverty and the ability for a household to be food secure. It is important to understand the rationale for this switch as the micro-perspective encompassed older influential economic theories that focused primarily on one economic sector (i.e. agricultural/food sector) while failing to recognize that the economy encompasses many independent sectors that all affect each other in different ways. This shift towards the micro-perspective prompted the public and policymakers to analyze food security as not simply a problem of the agricultural and food sector but a problem of other economic sectors as well (i.e. income) (Burchi & Muro, 2012).

The income-based approach has been successful in drawing the attention away from simply achieving adequate caloric intake and begins focusing on how different foods are converted into different calories, some healthy and some not. Understanding the characteristics of food and which types of food people consume is crucial in understanding their status of food security. "If people's calorie availability is lower than a threshold identified by international nutritionists, they are considered food insecure (Burchi & Muro, 2012)." Consuming enough calories does not mean an individual is getting the vital nutrients they need to be food secure.

The primary metric used for the income-based approach are household surveys, which provides information on income. The survey, however, estimates that within poorer households, a larger proportion of income is used to buy food. The food is then converted into calories, and as previously stated above, if caloric availability is lower than the "required" minimum then members of the household (not necessarily all) are considered to be food insecure (Burchi & De Muro, 2016). A main weakness of this approach is the assumption that income and calories are elastic. Meaning that if income changes, caloric availability is sensitive to change as well, which is not necessarily the case. This approach further falls victim to several assumptions regarding the analysis of the move from income to food security: "1) from income/expenditure to food through price per unit information; 2) from food to calorie through equivalence tables; and 3) from calorie availability to food security/insecurity depending on the threshold (Burchi & De Muro, 2016)." The income-based approach implies that there is a certain equal distribution amongst household members or a distribution based on biological needs, which is oftentimes, not necessarily the case (Burchi & De Muro, 2016).

Burchi and Muro (2016) state that household expenditure surveys are ultimately more useful metrics for measuring food security as they are more accurate in illustrating how a household allocates their money to a limited number of food items (Burchi & Muro, 2012). Furthermore, all of these surveys thus far, focus on the household as the unit of analysis. Oftentimes, these surveys are done in rural, low income areas and countries, where the majority of the country works in subsistence agriculture (farmers working to grow crops to feed themselves and their families). Therefore, "expenditure surveys tend to underestimate expenditures on food because the value of food produced at home or gathered locally is often not

recorded (Burchi & Muro, 2012).” While the income-based approach offers a crucial shift in perspective from the macro to the micro-perspective when assessing food security, this approach only functions at the household level.

The Basic-Needs Approach

The focus of this approach emphasizes the importance of including non-economic dimensions of development into the human-development framework. The basic-needs approach fills in this gap by focusing on the right of all people to live a “full-life” by assuring that their basic material and non-material needs are met. What constitutes basic needs? First and foremost, food is one of the most basic of all needs. Not only is food a basic need, but it is also a basic right, like water. Shelter and clothing are also considered basic needs. Basic rights are considered a necessary component for enjoying and living a “full-life.” The first method of the basic-needs approach is a food frequency assessment, which is done by very simply asking people how many meals they eat per day or how frequently they consume food. The downside of this method is that it focuses on frequency and not quantity consumed which makes it harder to understand the caloric intake of the individual. The second method is based on direct observation of food consumption. Each individual in the household is observed when eating meals, which gives the observer direct information on the food being consumed. In order to obtain the final caloric availability, food items are weighed based on their nutritional contents and then are aggregated (Burchi & Muro, 2012).

Food consumption surveys which are nationally representative, have been proven to be a more accurate method for collecting data on food security. The more frequently the surveys are

done, the more accurate they are. The information collected, based on food consumption "is derived by converting food expenditure information into consumption quantities and calories." In comparison to the FAO indicator method, food expenditure surveys as well as providing more direct assessments of food energy deficiency at the household level, provide direct measures of the inequality of food intake within a nation. Similarly to FAO indicators, there may be concerns regarding the estimates drawn from food balance sheets, therefore making them susceptible to data inaccuracy. "There are also concerns about their high cost, timeliness, coverage, and comparability between countries and over time (de Haen & Klasen, 2012)."

A proxy measure called the dietary diversity proxy has been used to more accurately indicate the quality and diversification of the food consumed. Food group consumption data is easy to collect, and by using the dietary diversity proxy allows one to assess the quality of nutrients in an individual's diet as well as highlight child anthropometry, which assesses how a child is developing anthropometrically (i.e. height, weight, body mass index, body circumferences, and skinfold thickness) (Jones et al., 2013).

Anthropometric measures are based on nationally representative surveys, such as the Demographic and Health Surveys (DHS) or integrated household expenditure surveys (i.e. living standard measurement surveys). Anthropometric measurements pertain to the human body and these measurements may be done for all household members or may be done only for children under a given age (they are often measured for children less than 5 years old). They may also include just women and young children in a given household. The data for children is compared to an international reference standard to derive prevalent rates of stunting (low height for age), wasting (low weight for age), and underweight (low weight for age). These are "actionable

indicators" which are used to address specific problems and monitor changes in regards to the nutritional status of the household members being measured. They also monitor changes in response to food programs and policy changes (de Haen & Klasen, 2012). As I have already addressed, it is important to understand that adequate food quantity does not equate to adequate food quality; and it is further crucial to make the distinction between childhood food insecurity and adult food insecurity. Oftentimes, childhood food insecurity is dependent on the adults in the home.

The basic-needs approach also considered the food-first approach measures both the household level and the individual level which is crucial in understanding how food insecurity is not necessarily consistent amongst household members. In many cases, women tend to receive less food than men due to body mass index (BMI). Furthermore, the prominent advantage of the basic needs or food first approach is that it focuses directly on food, rather than on the income needed to purchase food. Because of this, it is not necessary to analyze physical or social problems in purchasing food, however the following approaches will argue differently. This approach does not underestimate what is grown locally at home versus food purchased in the market, and focuses on the food that is actually eaten by the individuals and the household (Burchi & Muro, 2012). While the basic needs approach incorporates both material and non-material needs, it does not, however, account for assurance of long term food security because it focuses on the food security of a household in a given time frame or in the past but fails to measure and assure a household's ability to be food secure in the future.

The Sustainable Livelihoods Approach

The sustainable livelihoods (SL) framework offers a more general approach to development and poverty, while also having a prominent application to food security analysis. Due to its practical and holistic nature, the SL framework has been actively adopted by NGOs such as CARE and Oxfam, governmental agencies, and UN agencies. Many continuities can be observed between the SL framework and the basic needs approach as well as the following entitlement approach. For instance, "gaining a living" and the "necessities of life." The SL framework's main focuses are on household assets (tangible and intangible). Through this framework, household assets are categorized into five categories: natural capital, physical capital, human capital, financial capital, and social capital. Moreover, the SL framework emphasizes two features that distinguish it from other food security measure frameworks, which includes its ability to encompass a long-term perspective and the particular attention it places on context (political, economic, physical, social, cultural, ect…). This distinction becomes extraordinarily important with Amartya Sen's Capability Approach which will be discussed in the latter portion of the chapter.

The SL framework emphasizes three concepts that further differentiates it from prior food security approaches. The first concept is that the SL framework considers "risks and shocks, adverse trends and seasonality that lead to *vulnerability* (Burchi & Muro, 2012)." This concept has two sides, external and internal. The external side of exposure to shocks which include stress and risk, and the internal side of defenselessness which constitutes the inability for an individual to cope without damaging loss (Burchi & Muro, 2012). The second concept is the notion of sustainability. This concept is connected to vulnerability and resilience as it reflects the ability of a person to cope and recover from stresses and shocks, a livelihood is only sustainable when it

has the ability to do just that (Burchi & Muro, 2012). The final concept of the SL framework is coping strategies, which "represent a set of activities that are undertaken, in a particular sequence, by a household in response to exogenous shocks that lead to declining food availability (Burchi & Muro, 2012. Curtis 1993)."

The SL framework has been revered within the context of food security not only for its ability to embody a long term perspective but also its awareness of context (political, economic, physical, social, cultural, ect). Past approaches have often failed to account for these contexts which prove useful but also necessary when assessing food security on different levels (individual, household, state, national). Despite this, the SL framework has proved applicable or useful towards assessing larger issues such as food crises, famines, or extreme food poverty however, it lacks attention towards more general food security and development issues within the context of food. The entitlement and capability approaches account for the aspects past approaches have lacked including, freedom and agency, the correlated relationship between people and food (utilization), and finally intra-household inequalities, meaning how the distribution of food within a household is often unequally distributed between household members (often women and children are most negatively affected by this) (Burchi & Muro, 2012). The following two approaches ultimately urge us to ask, what are we neglecting in terms of our understanding of food security, and from this, how we can fill in those gaps in order to create a more holistic approach towards understanding and measuring food insecurity?

The Entitlement and Capability Approach

The following approaches were both conceived by Amartya Sen, with the first being the entitlement approach. Conceived by Sen in the 1980s, the goal of this approach was to shift the focus and perspective from the Malthusian view of famine and hunger in regards to national food *availability* to people's individual *access* to food (Burchi & De Muro, 2016). "The entitlement approach concentrates on each person's entitlements to commodity bundles including food, and views starvation as resulting from a failure to be entitled to any bundle with enough food (Burchi & De Muro, 2016; Sen, 1981)." Entitlements are dependent on two elements: "1) personal endowments, which are the resources a person legally owns, such as house, livestock, land and non-tangible goods; and 2) the set of commodities a person has access to through trade and production (Burchi & De Muro, 2016)."

This approach was created and proposed to test for and combat famines. Burchi and Muro (2016) argue that the same rationale can be applied to hunger and endemic undernourishment. Sen argues that, "Seeing hunger as an entitlement failure points to possible remedies as well as helping us to understand the forces that generate hunger and sustain it (Sen, 1999)." The entitlement approach aims to reassess the problem of hunger and famine by placing more attention on the socio-economic conditions of people rather than focusing on the role of aggregate food supply. Famously stated by Sen, "Starvation is a matter of some people not *having* enough food to eat and not a matter of there *being* not enough food to eat (Burchi & Muro, 2012)."

The primary goal of the food entitlement approach, thus becomes the need for people to have both physical and economic access to the basic food they need at all times, in order to live an active and healthy life (*FAO*, 1983; *World Bank*, 1986). Accurate food assessments are done

by expanding the informational basis to take into account the variables necessary to properly assess an individual's ability to be food secure. These variables include, endowments (productive and non-productive assets), emphasis on employment (employment benefits, resources such as education, information on wage, food prices and non-food items, as well as ability to acquire food stamps. Consideration of access to goods and services is also a crucial component of the entitlement approach as it posits that access to goods and services apart from food also directly affect a person's ability to be food secure or food insecure (Burchi & Muro, 2012).

The entitlement approach also accounts for the individuals as well as the household as a whole. The approach stresses that income should not be the only measure used to assess a person's vulnerability to food insecurity, specifically in rural areas of developing countries in which income is barely measured. While this approach recognizes income as an important means in regards to gaining access to food, it is not necessarily the most important or relevant variable towards assessing someone's ability to be food secure. Rather, a focus on entitlements offers a more precise understanding (Burchi & De Muro, 2016).

Therefore, measuring entitlements offers a more holistic and accurate approach to assessing food insecurity, specifically in those regions. Income is also only reflective of the short term economic status of an individual or household. By using a full set of assets (entitlements) a more comprehensive understanding can be drawn for long-term assessment of an individual or household's potential vulnerability to food insecurity (Burchi & Muro, 2012).

The capability approach was first pioneered by economist Amartya Sen and Jean Drèze in 1989 in their book *Hunger and Public Action*, and was developed in response to the weakness of older and past food security approaches (such as food availability, income-based, basic needs

approaches). Using Sen's entitlement approach as a foundation, the capability approach further aims to address aspects of traditional utilitarian perspectives that exclude crucial variables in terms of human development and well-being. Past frameworks and perspectives focus on utility, liberty, commodities, and primary goods (Wells, n.d.) while failing to address the individual welfare of people as well as the non-material criterion necessary for more accurately assessing human well-being including happiness, life fulfillment, self-respect, and having respect for others (Agee & Crocker, 2013). The capability approach switches the focus from "command over food to nutritional capabilities, this approach goes beyond the 'access' dimension of food security – which is the main concern of the basic needs, SL, and entitlement approaches – and also includes the utilization dimension (Burchi & De Muro, 2016)." For that reason in particular, the capability approach was conceived as a theoretical framework directed towards addressing individual well-being, development and justice. Despite being created and introduced by Amartya Sen and Jean Drèze, philosophers including Martha Nussbuam and other scholars have aided in its development over time (Robeyns, 2016).

Where the capability approach differs from past approaches on development is through its emphasis on individual freedom and well-being in conjunction with the policies and institutions at play. "According to the capability approach, the objective of both justice and poverty reduction (for example) should be to expand the freedom that deprived people have to enjoy 'valuable beings and doings' (Alkire, 2005)." This exemplifies the means-ends distinction, whether something is thought of as a means to an end or an end itself. In this case, the capability approach argues that human beings and their collective and individual well-being should be considered amongst policy makers as the 'end' or main goal of development, rather than as a

means to an alternate end, which could be considered an increase in economic growth (Alkire, 2005). The betterment or enhancement of individual living conditions and well-being should ultimately be prioritized as the object 'end' of human development. Sen argues that the well-being of humans does not take away from economic growth and development due to the fact that humans, whether directly or indirectly, are in actuality the primary means of production. However, it simply ensures that the livelihoods and well-being of those involved in the interdependent web of development are not regarded as 'means' to a greater 'end' of increased economic growth, but rather as an end themselves (Alkire, 2005).

> "The approach stresses that we should always be clear, when valuing something, whether we value it as an end in itself, or as a means to a valuable end. For the capability approach, the ultimate ends of interpersonal comparisons are people's capabilities. This implies that the capability approach evaluates policies and other changes according to their impact on people's capabilities as well as their actual functionings. It asks whether people are able to be healthy, and whether the means or resources necessary for this capability, such as clean water, adequate sanitation, access to doctors, protection from infections and diseases, and basic knowledge on health issues, are present. It asks whether people are well-nourished, and whether the means or conditions for the realization of this capability, such as having sufficient food supplies and food entitlements, are being met. It asks whether people have access to a high-quality education system, to real political participation, and to community activities that support them, that enable them to cope with struggles in daily life, and that foster caring and warm friendships (Robeyns, 2016)."

In sum, the capability approach, "purports that freedom to achieve well-being is a matter of what people are able to do and to be, and thus the kind of life they are effectively able to lead (Robeyns, 2016)." The approach encompasses two normative claims, which are 1) "the claim that the freedom to achieve well-being is of primary moral importance, and 2) that freedom to achieve well-being is to be understood in terms of people's capabilities, that is, their real opportunities to do and be what they have reason to value (Robeyns, 2016)."

In order to understand the foundation of the capability approach, two crucial components need to be clearly defined: functionings and capabilities. Functionings are valuable 'beings' and 'doings' which means the different states in which a person can be or the activities they can do. For example, 'beings' can be categorized as "being well-nourished, being undernourished, being housed in a warm home, being educated, being illiterate, being part of a supportive social network, being part of a criminal network, being happy, or being depressed (Robeyns, 2016)." Examples of 'doings' are "traveling, caring for a child, voting in an election, taking drugs, killing animals, eating animals, consuming large amounts of fuel to heat one's home, donating money to charity or using food stamps at a food pantry (Robeyns, 2016)." Functionings themselves are "morally neutral" in the sense where 'beings' and 'doings' tend to be unequivocally good or bad; for instance being in good health or being depressed. However, how good or bad a functioning is, ultimately is dependent on the context or the normative theory in which a person chooses to support. A person who has more conservative values may analyze a particular functioning as valuable on the contrary to a more liberal person who may analyze that same functioning as oppressive or inequitable (Robeyns, 2016).

The next core idea is capabilities, which "are a person's real freedoms or opportunities to achieve functionings (Robeyns, 2016)." In the case of food security, while a person might value being adequately nourished, the opportunity they have to be adequately nourished is reflective of their freedom or capability to achieve what they value. From this we can understand that the formulation of capabilities has two parts: valuable beings and doings (functionings) and freedom. However, "the distinction between functionings and capabilities is between the realized and the effectively possible," meaning on one end, the actual achievements of an individual versus the

freedoms and valuable opportunities in which they can choose or hope to achieve (Robeyns, 2016).

Now that the foundation of the capability approach has been laid out; by focusing the perspective of capabilities onto food, we can begin to see how this approach is exercised when applied to the issue of food insecurity. When capabilities are applied to food, it translates into access and utilization. As discussed prior, the capability approach was created in response to an inadequate perception towards human development through weaker approaches, specifically on the issue of food, focusing primarily on availability rather than access or utilization. Sen stresses the importance of reshifting the focus off of food availability and towards individual food access and entitlements.

> "Undernourishment, starvation and famine are influenced by the working of the entire economy and society, not just food production and agricultural activities. It is crucial to take adequate note of the economic and social interdependences that govern the incidence of hunger in the contemporary world. Food is not distributed in the economy through charity or some system of automatic sharing. The ability to acquire food has to be *earned*. What we have to concentrate on is not the total food supply in the economy but the "entitlement" that each person enjoys: the commodities over which she can establish her ownership and command. People suffer from hunger when they cannot establish their entitlement over an adequate amount of food (Sen, 2000)."

From this, in order to appropriately analyze food security at the household and individual level, while utilizing the capability approach as an applied framework, three different dimensions or components of food security need to be taken into account: 1) analysis of food entitlements; 2) analysis of basic capabilities for food security; and 3) analysis of the capability to be food secure (Burchi & De Muro, 2016).

The first component towards analyzing food security is through the analysis of a household or individual's food entitlements. The determination of these entitlements are

dependent on endowments, production possibilities, and exchange conditions. Endowments entail the productive resources in which a household or individual has ownership over as well as the wealth that informs the price within the market (Sen, 2000). In order to properly assess endowments, an analysis of the variations of this information in the recent past should be included, as well as changes in current endowments (Burchi & De Muro, 2016). Production possibilities and their uses is the second influence determining one's food entitlements. "Available technology determines the production possibilities, which are influenced by available knowledge as well as the ability of the people to marshal that knowledge and to make actual use of it (Sen, 2000)." Sen brings up an intriguing point in which he argues that many people in the world do not directly produce their own food, but rather gain or earn the ability to acquire food through the employment in the production of other commodities, that do not necessarily involve food or food related products at all. Therefore, when large amounts of people no longer have command over their food due to issues in the production of other goods, they may lose the ability to gain or earn the capability to acquire food for themselves which highlights the interdependencies involved with production possibilities in relation to food entitlements (Sen, 2000).

The final determination of food entitlements are exchange conditions, which are "the ability to sell and buy goods and the determination of relative prices of different products (Sen, 2000)." Exchange conditions however, tend to be vulnerable to immense changes during economic emergencies or natural disasters which highlights another dimension of food security: stability (Burchi & De Muro, 2016). In order to measure exchange conditions, information should be obtained on prices of the highest number of goods and services from national and local

sources or from international databases such as FAOSTAT (Food and Agriculture Organization Corporate Statistical Database). These analyses serve as examples of more expansive studies done on 'coping' and 'adapting' strategies in which we can observe and understand the strategies that people employ during crises (economic, social, and environmental) or just during normal periods of their lives; which is ultimately reflective of the stability of a household or individual within these different realms. From these complex analyses, "we can incorporate not only what people *have*, but what people *do* as agents of their future (Burchi & De Muro, 2016)." Conclusively, by looking at food entitlements (endowments, production possibilities, and exchange conditions) we can hopefully begin to understand that accurately assessing the cause of hunger and starvation is done by analyzing the economic system in its entirety, being aware and inclusive of all its facets while not accounting for simply food output and supply (Sen, 2000).

The second component of analyzing food security through the lens of capabilities, is through an analysis of the basic capabilities for food security. In order to be free from hunger, other factors need to be taken into account aside from food entitlements. This can also be thought of as the capability to have a sufficient intake of food/calories. Foremost, this includes institutional and environmental conversion factors, which generally speaking are beyond an individual's control. "Institutional conversion factors are the set of rules, norms and customs that allow, for instance, a certain amount of income to be converted into an adequate amount of food (Burchi & De Muro, 2016)." If certain groups of people are targeted within these institutional constraints or they lack individual agency; than the freedom of those people to use their income to acquire an adequate amount of food is ultimately hindered and places them at a disadvantage in relation to those who are not.

"Environmental conversion factors are ones affecting, for example, the conversion for food growers of food production into actual food (for subsistence agriculture) or income (for food sold in the market) given the production possibilities and exchange conditions (Burchi & De Muro, 2016)." Environmental conversion factors also include natural disasters and climate change. However, having access to food is not sufficient enough to understand food security. A broader analysis of basic capabilities is necessary for adequately assessing a household or individual's ability to be food secure. Some of these capabilities include being in good health, being educated, and being able to take part in household decision making and community life (Burchi & De Muro, 2016).

For each facet of basic capabilities to be accurately measured, existing data must be collected and new data must be found on the following variables: "1) school enrollment, educational achievements, literacy, participation in adult literacy courses and other non-formal education programs; 2) access to health care services, sanitation, morbidity from major diseases, self-reported health status; and 3) the capability to make a shared or autonomous decision within the household on issues such as budget and food allocation (empowerment-type questionnaires), and participation in community life (Burchi & De Muro, 2016)."

Lastly, the final measure is the analysis of the capability to be food secure which is dependent on the interactions between 'basic' and more 'complex' capabilities. Basic capabilities are necessary components to ensure complex capabilities can be achieved but are foundational building blocks rather than an assurance that an individual will be food secure. This ties into the concept of utilization, as the capability to be food secure can also be thought of as the capability to be adequately nourished. While access to food can be achieved through basic capabilities and

while these capabilities are necessary, it does not ensure that the food acquired will be utilized sufficiently to provide a household or individual with the adequate nutritional and caloric intake necessary to be food secure. The data collected should focus on the nutritional knowledge of a person, the quantity and variety of their diet and if accessible, the hygenic and cooking practices of a household or individual (Burchi & De Muro, 2016).

How an individual utilizes food is also dependent on cultural and religious aspects or merely the fact that they might not enjoy the food they have acquired or they are not used to preparing and eating it. Due to these reasons, an individual might have access to enough food and food of the proper quality, but due to these inhibitions, remain food insecure. For that reason, it is important to collect information on religious and cultural beliefs as well as local food habits (Burchi & De Muro, 2016). This brings to light a critical aspect of the capability approach, that is, the attention to cultural and religious diversity amongst disparate groups of people, in which previous development frameworks have neglected. "Unlike the food-first approach, the capability approach takes into account the quality, utilization and social acceptability of food, and the interaction with other basic capabilities such as health and education (Burchi & De Muro, 2016)."

Agency

Within the capability approach's applied framework on food security, an emphasis on agency proves incredibly relevant to the components discussed above. According to Poli (2015), the relationship between capabilities and agency is how the capability approach is ultimately governed by the agent's space of liberty. This means that depending on both external and internal

constraints placed upon the individual, they have a combination of possibilities in which they can make that are dependent upon their space of liberties and the subjective values that an individual holds (Poli, 2015). Moreover, as discussed with conversion factors (both institutional and environmental), many of these constraints are beyond the individual's control, however, "as individual and collective agents we decide how to respond to inner urges, external forces, and constraining circumstances, and whether or not to enhance or sacrifice our well-being to some higher cause (Burchi & De Muro, 2016)." Therefore, by acting as positive agents of one's future, an individual's actions can either perpetuate a given situation or enable them to alleviate aspects of their lives in which they do not value.

Operationalizing the Capability Approach

While the capability approach as a theoretical framework has been praised for its emphasis on human well-being and the subjectivity involved in its successful development, much of the contention within the literature has been directed towards how the capability approach can be operationalized, can it feasibly be put into practice? This contention leads us to questions that have surfaced in the literature on the topic of operationalization, "How are capabilities to be measured, compared, and aggregated? How are value conflicts to be resolved? Which capabilities should be selected for study (Alkire, 2005)?"

According to Alkire (2005), she argues that the primary observation about the capability approach is that it is not a "one-time thing." Therefore, "no one 'list' of basic capabilities will be relevant to every evaluation or assessment or measurement exercise or index: the selection of functionings or capabilities upon which to focus will need to be done repeatedly (Alkire, 2005)."

The second observation she makes about the approach is that operationalization needs to occur in many countries at different levels (individual, household, regional, state, and national level) while also paying attention to the respective problems within those varying levels (Alkire, 2005). By doing so, Alkire argues that the capability approach will alter the ways in which we analyze traditional human development issues like poverty or life, liberty, and the pursuit of happiness.

A third observation she makes is that while the capability approach may seem very abstract, the concept of capabilities itself and the problems it aims to remedy are not. Therefore, she argues that while the approach has many degrees of freedom, existing concrete situations do not, and for that reason the, "the feasibility considerations can usually be jotted in, and the actual scope for both analysis and action narrows considerably (Alkire, 2005)." A fourth and final observation by Alkire is that this seemingly daunting task does not have to be entirely up to researchers. "Sen has provided an analytical map of important variables which can be useful to practitioners who are deeply sensitive to context, and that can be adapted, shaped, and fitted to many different institutional levels, time periods, groups, and so on (Alkire, 2005)." According to Sen, possible sources for acquiring important data for the approach includes: "1) market purchase data; 2) responses to questionnaires; and 3) non-market observations of personal status (Comim, 2001)." Oftentimes, according to Sen, the 'limitations of reliable data' can be looked at rather as a 'lack of demand' for these types of databases (Comim, 2001). A salient aspect that arises from this is, "not how *many* variables we should focus on, but *which* variables (Burchi & Muro, 2016)."

A critical observation about Sen's perspective towards the approach is his refusal to fill in all the blanks in regards to the variables of the approach and the approach itself. "His decision to

leave the prioritization of basic capabilities to others who are engaged directly with a problem, demonstrates respect for the agency of those who will use this approach (Alkire, 2005).” Sen’s focus is ultimately directed towards the individual because when put in practice, “the measures are designed to assess the institutional support for the individual (Comim, 2001).” However, because of this, data limitations are found to be a significant obstacle when attempting to operationalize the capability approach. Therefore, practical compromises seem to be intrinsic to the feasibility of the capability approach (Comim, 2001). For that reason, Sen argues that while we might not be able to acquire data on specific variables, it would be important to know what data would be useful (in principle) in a given situation (Comim, 2001). “The empirical strategy suggested consists in acknowledging the practical problems of the informational availability whenever necessary and searching for practical compromises (Comim, 2001).”

Comim argues that because of this understanding, the main difference lies in the micro vs. macro level of studies. The macro level offers few differences in regards to human well-being, however the micro-level allows for a deeper understanding of this well-being to be established as the capability approach at this level, “allows people to express their ‘powers of discrimination’ with regard to the good life (Comim, 2001).” The question that follows from this is how humans as agents of their future, fit into this practical framework?

Agee and Crocker argue that the capability approach highlights two main features: “1) the realistic (noncounterfactual), operational focus is almost exclusively on the representation of objective capabilities; and 2) within this operational focus, the primary emphasis is on characterizing and measuring ‘deprivations’ between potential and realized capabilities and,

implicitly, the marginal productivities of policies aimed and reducing such deprivations (Agee & Crocker, 2013).” These claims speak to Sen’s argument on the subject in which he states that,

> “The assessment of capabilities has to proceed primarily on the basis of observing a person’s actual functionings, to be supplemented by other information. There is a *jump* here (from functionings to capabilities), but it need not be a big jump, if only because the valuation of actual functionings is one way of assessing how a person values the options she has (Comim, 2001).”

Therefore, apart from the theoretical framework on the capability approach, Alkire (2005) proposes that the operational or participatory phase of the approach needs to focus on how an individual’s functionings become capabilities. Functionings remain the realized value, while capabilities remain the real freedoms and opportunities to achieve what is valued by that individual. For that reason, at the local level, “members of a social group deliberate, with the aid of facilitator, about what their needs are, and how, they would like to go about them (with the basic categories employed as prompts to ensure that all main dimensions of values are discussed) (Robeyns, 2016).”

Chapter 4
The State of Food Insecurity in the Hudson Valley

This chapter aims to highlight the state of food insecurity in various regions of the Hudson Valley by examining three reports done in different regions of the valley. All of these reports were conducted through research from the Benjamin Center which aids to connect local governments, businesses, and not-for-profits in the Hudson Valley by offering services that aid towards applied research, evaluation, and policy development. Through the Benjamin Center, the Center for Research, Regional Education and Outreach (CRREO) conducted a series of discussion briefs in order to "bring key regional concerns to the attention of citizens and policymakers to support their informed discussion of the public policy problems facing the Hudson Valley (*The Benjamin Center at SUNY New Paltz*, n.d.). Two of those discussion briefs focus on the issue of food insecurity within the city of Poughkeepsie and Ulster County. One crucial aspect to mention is that the CRREO report on Poughkeepsie and Ulster County are from the years of 2014 and 2012, making the data and information pertinent to the region and issue of food insecurity, yet slightly outdated.

Poughkeepsie Plenty: A Community Food Assessment

Starting on the East side of the Hudson River, with the City of Poughkeepsie, Poughkeepsie Plenty is a collaborative community effort formed to aid in the alleviation of food insecurity in the City of Poughkeepsie. "It seeks to transform the City of Poughkeepsie into a place where everyone can secure, prepare, enjoy, and benefit from healthy food (Nevarez, Grove, Tobin, & Simons, 2014)." The Poughkeepsie Plenty Food Coalition works to organize the community to

build a diverse movement for change to ensure the right for all residents in the City of Poughkeepsie to secure sufficient and nutritious food (Nevarez, Grove, Tobin, & Simons, 2014).

Motivations and Objectives

This report utilizes the findings of research conducted in 2012 to highlight all the facets of problems the city is facing in regards to assuring food for those who are food insecure and offering locally-focused policy proposals to address this issue. The teams aiding in the research done by Poughkeepsie Plenty include the Poughkeepsie Farm Project, Cornell Cooperative Extension of Dutchess County, the Dutchess County Department of Health, Dutchess Outreach, Vassar College, and many other agencies, individuals, and local businesses. "The initial goals of Poughkeepsie Plenty initiative were: to create a research-based community food assessment (CFA); to draw upon community participation and input to create a plan (for improving the city's food system) using neighborhood and citywide action planning forums; and, to establish a community food coalition to facilitate and oversee the implementation of the action plan through coordinating projects, and monitoring and advocating for policy (Nevarez, Grove, Tobin, & Simons, 2014)."

The research for this food assessment was conducted during a national economic decline, which resulted in the loss of jobs as well as prolonged economic stress, especially on those already impoverished. Specifically in the City of Poughkeepsie where there are heavy concentrations of poverty, the 2007-2008 recession only aided in further exacerbating the continuous economic distress and socioeconomic inequalities experienced by many of the residents of Poughkeepsie, especially the low-income residents.

Localities and Demographics

According to the 2010 U.S. Census, the population of Poughkeepsie, located in Dutchess County, is around 32,736 people (2018 census data now shows a population of 30,469). In past years the city experienced declining populations, white flight, as well as an increase in concentrations of non-white, lower-income, and less-educated residents. As of 2010, the data showed an unemployment rate of around 12 percent, which at the time was 3 percent higher than the national rate of 9 percent. Currently as of February 2020, the unemployment rate is 4.9 percent (*Local Area Unemployment Statistics Program—New York State Department of Labor*, n.d.). The median household income in 2010 was $39,061 and 25 percent of the city's residents with 37 percent of children under the age of eighteen live in households that rely on incomes below the federal poverty line ($22,050). Furthermore, four in ten female-headed single parent households and three in twenty seniors (age 65 or older) live in poverty. Within the city's public school system, 80 percent of students during the 2011-2012 school year were qualified to receive free lunches and an added 11 percent were eligible for reduced-price lunches.

The report showed the city's northern neighborhoods had a higher concentration of people living in poverty, however census tracts showed households living in economic insecurity throughout the entirety of the city. Moreover, the report found that there was significant neighborhood inequality represented in part by the lack of a large grocery store within the city limits from 1992-2011. As of 2011, the city consists of two large grocery stores, however they can be found on the eastern side of the city, which only reduces the distance in which many of the city's less affluent residents need to travel by less than a mile. After that, the next closest

supermarkets are located in the neighboring town. As a result of this, the two closest census tracts to the city center qualify as food deserts in accordance with the USDA criteria of a food desert. “Census tracts qualify as food deserts if they meet low-income and low-access thresholds: 1. They qualify as low-income communities, based on: a) a poverty rate of 20% or greater, or b) a median family income at or below 80% of the area median family income; and 2. They qualify as ‘low-access communities,’ based on the determination that at least 500 persons and/or at least 33% of the census tract’s population live more than one mile from a supermarket or large grocery store (10 miles, in the case of non-metropolitan census tracts (USDA, 2014).”

In 2008, the Dutchess County Department of Health conducted a telephone survey and found that one in four (26%) residents in the City of Poughkeepsie reported that they had difficulty accessing healthy food. Furthermore, within that 26%, more than half of people reported that they experienced difficulty in buying healthy foods and that the healthier options were too expensive. About one fifth of Hispanic and non-Hispanic, black residents in the 2008 survey responded that they had difficulty buying healthy food in relation to the 10% of non-Hispanic white residents who experienced the same difficulties.

Table 1. Demographics and Food Security in the City of Poughkeepsie and the United States

	City of Poughkeepsie	**United States**
Race/Ethnicity		
White	48%	72%
Black	46%	13%
Hispanic	20%	16%
Unemployment	12%	9%
Median Income	$39,061	$52,762

Poverty Rate		
All residents	25%	14%
Households with children	37%	20%
Female-headed single parent	40%	29%
Seniors (age 65 or older)	15%	9%
Food Security		
Food secure	74%	86%
Food insecure without hunger	15%	9%
Food insecure with hunger	11%	5%

Source: USDA 2011, U.S. Census 2012, (Nevarez, Grove, Tobin, & Simons, 2014)

Prevalence of Food Insecurity in Poughkeepsie

The report offers a commonly agreed upon definition of food insecurity which is "when a person or family has limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways." Simply put, the report finds that food insecurity is prevalent and poses a real problem in the City of Poughkeepsie. The CFA (community food assessment) created a food system of Poughkeepsie that highlights seven dimensions that affect the character, quality, marketing, and availability of food in Poughkeepsie. These dimensions include: production, processing, transportation, distribution, consumption, waste, and policy. However, this report pays specific attention to the three domains of the city's food system, focusing on the local aspects which are distribution, consumption, and policy. These dimensions of the food system set the foundation for one of the report's main focus points, which is, how do people experience Poughkeepsie's food system?

Following the definition of food security, the report aims to address the three conditions that place individuals or households at an increased risk for health problems in regards to food.

Figure 6. Three Conditions of Household Food Security and Continuum of Health Consequences

Food Secure	Food Insecure	
No food access problems or limitations, or so few as to not affect diets or food intake.	...without hunger: reduced quality, variety, or desirability of diet; little indication of reduced food intake.	...with hunger: Multiple indications of disrupted eating patterns and reduced food intake.
Least severe health/nutrition risks ——————————Most severe health/nutrition risks		

(Nevarez, Grove, Tobin, & Simons, 2014)

Methodology

Between October 2010 and April 2012, the Poughkeepsie Plenty surveyed a random sample of households in the city or gauge: "1) the extent of food security across the city; 2) the levels of access households have to grocery stores, other food retail, and food assistance; and 3) the criteria households use when choosing food retailers and food products to buy (Nevarez, Grove, Tobin, & Simons, 2014)." 40 percent of the City's residents said that it was very important to them that they are able to buy food that is easy to prepare, as well as cost efficient. In 2020, the report found that between 34.5 and 45.5 percent of the total city population had this preference in regards to their food purchases. Furthermore, in order to more accurately assess food (in)security, the survey further incorporated the USDA's Household Food Security Scale. This scale is composed of six questions that are used to assess a household's financial ability to meet

their basic nutritional needs. However, it is important to note that the questions in this survey do not directly address the physical well-being of individual members of the household.

The assessment of the six questions of the USDA's Household Food Security Scale are based on how many affirmative answers are given. A household is food secure if they answer 0-1 questions affirmatively, food insecure without hunger if they answer 2-4 questions affirmatively, and food insecure with hunger if they answer 5-6 questions affirmatively. The USDA Household Food Security Scale Survey Questions are as follow:

> "1. In the last 12 months, did you or others in your household ever cut the size of your meals or skip meals because there was not enough money for food? [If "yes," ask question #2]
> 2. How often did this happen? [Affirmative answers: "almost every month" and "some months but not every month"]
> 3. In the last 12 months, did you or others in your household ever eat less than you felt you should because there was not enough money for food?
> 4. In the last 12 months, were you or others ever hungry but did not eat because there was not enough money for food?
> 5. Please tell me whether this statement was often, sometimes, or never true for you or other members of the household in the past 12 months: "The food that we bought just did not last, and we did not have money to get more." [Affirmative answers: "often true" and "sometimes true"]
> 6. Please tell me whether this statement was often, sometimes, or never true for you or other members of the household in the past 12 months: "We could not afford to eat balanced meals."

This survey was conducted through face-to-face interviews at the resident's households in the City of Poughkeepsie. They selected households using probability sampling methods, with a random sample of 1,500 addresses from all over the City of Poughkeepsie being selected. Surveying began October 2010 and ended in April 2012. All residents selected received a courtesy letter informing them of the nature of the project and the possibility of an upcoming

survey visit. Moreover, the survey was prepared in both English and Spanish to account for the diverse population of people that would be interviewed. The surveys took around 10 minutes to complete and a total of 355 surveys were ultimately completed. Out of the 1,500 addresses, 188 were unusable, 644 were nonrespondent, and 313 refused. The final dataset recorded was weighted to reflect race, Hispanic ethnicity, and income distribution with the City.

In the spring of 2011, qualitative focus groups were conducted in order to "1) gather commentary and elaborate on close-ended questions administered in the household survey; and 2) since Spanish-speaking respondents were underrepresented in the initial household survey, the focus groups provided an additional place for these voices to be represented (Nevarez, Grove, Tobin, & Simons, 2014)." From March 27 to May 16, 2011, seven focus groups of 56 participants were brought together. The interviews were not recorded, but were represented through note takers' paraphrasing and summary of the participants' remarks.

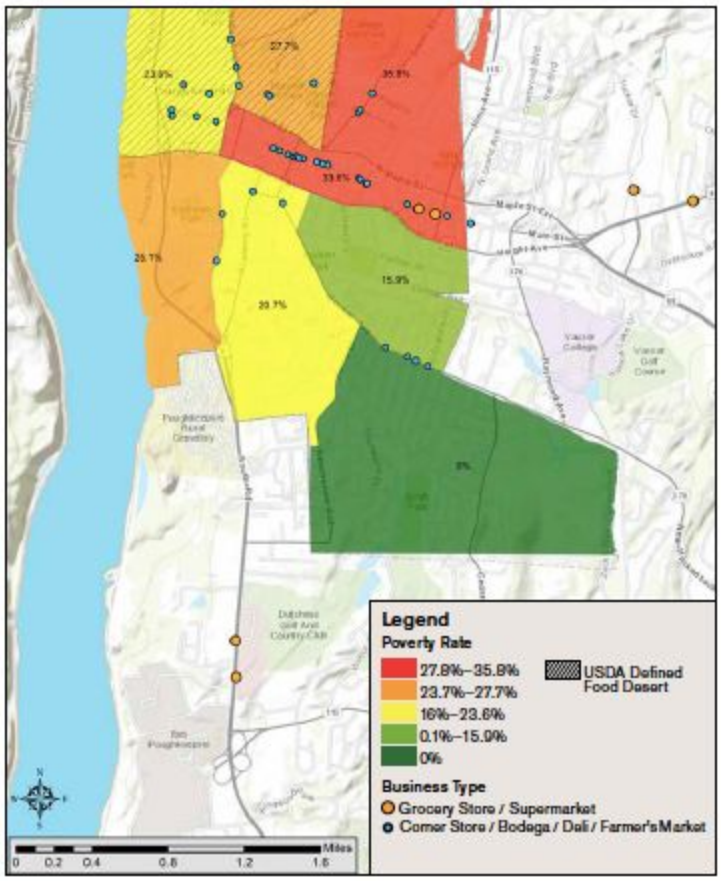
The report conducted secondary research to assess the availability of fresh food, affordability of staple foods, and acceptance of EBT (electronic benefit transfer) and WIC food benefits in the city's food retailers. They visited 22 small food stores in the downtown area of the city twice. They also visited four supermarkets.

Results

The report found that 26 percent of households were food insecure and within those food insecure households, about 42 percent of households were food insecure with hunger. There were three critical factors that were found to be correlated with household food insecurity in Poughkeepsie: income, race/ethnicity, and access. Households (60 percent) who made an income

less than $15,000 annually were food insecure, and 32 percent of those households were food insecure with hunger. Hispanic and Black households tended to have a higher rate of food insecurity than white households. Furthermore, households without a car or who did not usually drive cars were more likely to experience food insecurity than those with access to a car. Around 44 percent of households who did not typically drive a car to go grocery shopping were food insecure (22 percent without and 22 percent with hunger). Also households who primarily get their food at places other than grocery stores were at a higher risk for experiencing food insecurity.

Map 2. City of Poughkeepsie Food Stores and Poverty Rate by Census Tract



Source: U.S. Census Bureau, 2008-10 American Community Survey 3-year estimates. Store locations are as of September 2012. (Nevarez, Grove, Tobin, & Simons, 2014)

The report found that in 2012, “over one-third (39 percent) of City of Poughkeepsie households who did not buy most of their food at a supermarket or grocery store were food insecure: 14 percent without and 25 percent with hunger. About four in ten (44 percent) of city households who did not usually drive a car to go grocery shopping were food insecure: 22 percent without and 22 percent with hunger.” The report attests that while income affects transportation options, access to food is less of a barrier to food security when there are large and full service grocery stores located within walking distance for all residents.

In terms of food preferences, the report found that for around half of households, “food purchases were guided by priorities for particular kinds of foods: food from family’s ethnic background (51 percent), brand name (48 percent) and organic (45 percent).” Additionally, by focusing on nutritional value and attention to labels, the report found that 84 percent of the City of Poughkeepsie’s consumers analyze food labels sometimes to (in some cases) determine the nutritional quality of it. Moreover, 42 percent of consumers reported that they always analyze food labels. The report purports asserts the importance of this as many people assume that nutritional education and overall socioeconomic levels in general influence an individual’s inclination to read food labels and choose food based on the labels. In terms of buying organic food, the report found no statistically significant relationship between income and reading food labels. Households within any income bracket are no more or less likely to analyze food labels to decide if the food is nutritious.

In sum, the report found that food insecurity in Poughkeepsie is a local problem reflective of national social problems including poverty, unemployment, underemployment, wage levels, and the fragility of a safety net. However, local changes are important and must focus on access

to healthy and nutritious foods. “Reliance on fast food outlets, bodegas, and other neighborhood stores that lack sufficient nutritious foods by those who experience food insecurity suggests that there is a market failure that can be mitigated by local policy intervention.” Finally, while there are many organizations that distribute free foods (charitable organizations, churches, food pantries, soup kitchens), charitable efforts are not sufficient enough to remedy a systemic problem. The remedy needs to come from reworking a food system approach (Nevarez, Grove, Tobin, & Simons, 2014).

Food Insecurity in Ulster County

The author of this report, Sue Books is a professor in the Department of Secondary Education at SUNY New Paltz and, “teaches courses in education and poverty, comparative and international education, and teacher research. Her scholarship has focused primarily on issues of equity in U.S. schooling (Books, 2012).” With a professional background in poverty assessment, Books states that, “poverty scholars for decades have argued that the federal metric underestimates the real scope of economic hardship in the United States (Books, 2012).” Furthermore, another problematic assumption that stems from this is that individuals and households above this federal poverty“line” can meet their basic needs (Books, 2012). Yet, there are many people in Ulster County living above the federal poverty line and below it who are still experiencing varying degrees of food insecurity. Understanding these poverty implications and reasons for there being unmet needs among residents guide the motivation of the research in this report.

Motivations and Objectives

The report commences with a layout of Ulster County's complex food safety net that is set in place to prevent chronic hunger and starvation in the region. The safety net is a combined effort between governmental and volunteer community based efforts. The governmental efforts include local, state, and federal initiative programs including the Supplemental Nutrition Assistance Program (SNAP); the National School Lunch Program (providing free and reduced price school meals for students in low-income families); Ulster County Office for the Aging (providing low cost meals to seniors); and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), which provides food and nutrition education for low-income pregnant, breastfeeding, and postpartum women as well as their young children. On the local level, these initiatives include soup kitchens, food pantries, and other volunteer efforts (Books, 2012).

While this safety net exemplifies a vast array of initiatives within Ulster County, the conundrum that arises is people are still experiencing varying degrees of food insecurity in the county, despite there being governmental and local support. While there is not prevalent hunger and starvation in the county, many people in the community experience, "chronic anxiety about how to feed themselves and their families – a painful irony in the lush Hudson Valley (Books, 2012)." The report finds that many people in the county struggle to be food secure if they lack adequate income and transportation. Furthermore, while there is a concrete food safety net in the county, many residents do not sufficiently make use of it, meaning that many people are eligible for food benefits but do not make use of them. The report discussed this as being "unmet neets" with an estimated 4,000 plus Ulster County households in poverty being eligible for SNAP

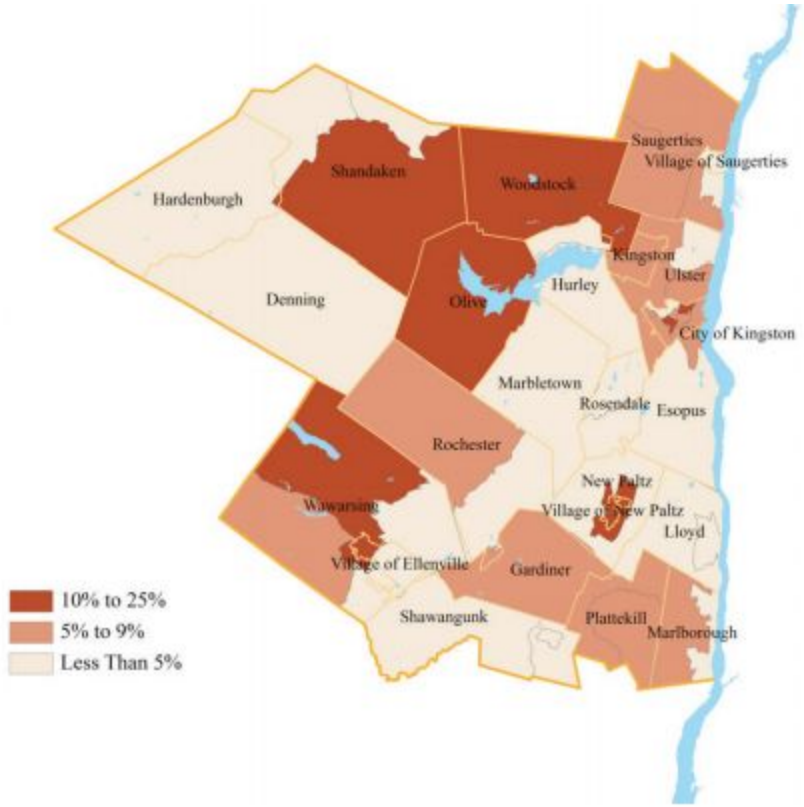
benefits but not receiving them. The following section will discuss the vulnerable groups in this report as well as where in the county they are located.

Localities and Demographics

The report finds the most vulnerable populations in Ulster County to be children in low-income families. These children qualify for free or reduced priced lunches at school during the school year, however have nothing on snow days, school holidays, and summer vacation. Other Ulster County groups at risk are teenagers who also qualify for free or reduced price school meals, but choose to opt out. Furthermore, residents who live in areas of the county where there is a lack of full-service grocery stores and may have transportation impediments are vulnerable to food insecurity. Around 45% of low-income older adults who are potentially eligible for SNAP benefits yet do not apply for them are vulnerable as well as adults nearing retirement age (especially men) who are not eligible yet for Social Security benefits. Lastly, low-income pregnant, postpartum, and breastfeeding women were found to be at risk. The table below shows the unmet need for food assistance in Ulster County in 2010 (Books, 2012).

> "While there are a significant number of older adults in Ulster County who are at risk for being food insecure and while living in poverty and chronic hunger is harmful at any age, the report found that hunger and poverty for children is especially dangerous making them a higher risk group. Many Ulster County children are, "suffering from an economic squeeze in which relatively expensive housing and relatively low wages or unemployment leave less income than needed for nutritional food, the cost of which has been rising." (Books, 2012)

Map 3. Unmet Need for Food Assistance by Census Tract in Ulster County, Percent of Households at or Below Poverty Level Not Receiving SNAP Benefits



Books, S., (2012). Food Insecurity in Ulster County. *Center for Research, Regional Education and Outreach (CRREO)*. State University of New York at New Paltz.

Methodology

The information used in this report was obtained from various sources including available statistics, interviews and conversations with thirty-one "frontline" workers in human service agencies, nonprofit food banks and soup kitchens, as well as anti-hunger research and advocacy organizations. In regards to the interviews, the following questions were asked in order to determine the level of hardship each family faced in terms of food insecurity:

> "Did food you bought run out and did you not have money to buy more? Were you unable to afford to eat balanced meals? Did an adult in the family cut the size of meals or skip meals because there was not enough money for food? Did you eat less than you felt

> you should because there was not enough money for food? Were you hungry but did not eat because you could not afford enough food?" (Books, 2012)

The more answers that were answered "yes" determined a households level of hardship in regards to food.

Results

The report finds a multitude of factors being attributed to food insecurity in Ulster County, first of which includes housing and wages. Considering that Ulster County is an expensive place to live with relatively high housing costs in conjunction with relatively modest wages, many residents in the county find this economically burdensome in terms of how they feasibly can allocate their money. Four out of ten Ulster County residents spend more than 30% of their income on housing. Moreover, a lot of employment in the county is seasonal, with many residents experiencing unemployment within the months of January to February (Books, 2012).

Next, food deserts and food costs were an impediment for many residents in regards to being food secure. SNAP benefits tend to not meet all the nutritional needs of its recipients, and oftentimes, recipients do not have resources to acquire alternative food. Moreover, the additional cost of food in conjunction with the allocated SNAP benefits was not adequate for the majority of households to meet all their nutritional needs. Regarding food deserts, there are four in Ulster County: "one in Kingston, where 17.4% of the residents are both low-income and low-access, one in Ellenville, where 16.4% of the residents are low-income and low-access, and two in New Paltz, where 6.1% and 2.6% of the residents are low-income and low-access (Books, 2012; *USDA*, 2012)."

Additionally, transportation was found to be a prominent factor limiting many resident's ability to access nutritional food, especially in less populated, rural areas of Ulster County. While public transportation is available, traveling by bus takes significantly more time and taxis and other rideshare options are oftentimes too expensive. For many residents, owning and maintaining a car is far too expensive, but ultimately leaves them in vulnerable situations specifically in regards to acquiring adequate healthy food (Books, 2012).

In terms of SNAP eligibility, the report found that while many groups were eligible to receive such benefits, they were not doing so. Older teenagers in particular were averse to be affiliated with the SNAP program as they felt it was stigmatized. However, the report found that even households with double-income/middle class have been asking for help due to job loss. For many who are not used to reaching out to these programs, there tends to be a lot of aversion towards doing so. The report affirmed the importance of making these programs as destigmatized as possible in order to eliminate the aversion and humiliation many people feel going to food pantries or asking for help from other food assistance programs.

How does the report suggest we address unmet needs?

The report offers an array of recommendations the county should be focusing on to address the unmet needs of residents in regards to food security, the first being to expand summer feeding for children as many students get their meals through their school but lack the means to be adequately fed when school is not in session. Next is to increase enrollment in the School Lunch Program. They recommended this can be done by, "requiring all students to complete the application for free and reduced price lunch; simplifying and standardizing the application; and,

including a promotional flyer informing high school students about the multiple but perhaps unrealized benefits of participating, including reduced fees for the SAT and ACT as well as AP tests and community college courses," as well as establishing a no cash policy but rather use designated swipe cards. The report states that it is actually in the school district's best interest to enroll all eligible students in the free and reduced-price lunch program as both programs are federally subsidized and also because the percentage of students enrolled actually helps to determine how much state aid the school can acquire (Books, 2012).

Additionally, the improvement of transportation to healthy food sources is necessary for many residents struggling to meet their basic and nutritional food needs, as lack of transportation stands in the way as one of the more prominent obstacles to food security. Moverover, helping eligible residents receive SNAP benefits is crucial in breaking down the stigma associated with the programs as well as helping to guide individual's with the application process which is not easy in itself. Finally, helping the growing poor and near poor at pre-retirement age will help provide services to these individuals who are not eligible for SNAP benefits or who do not have the means to support themselves (Books, 2012).

The report also suggests supporting local, community agriculture. Strengthening these agricultural communities can in turn help people struggling to be food secure. "There's something not computing: we're in an agricultural area, but there is all of this hunger (Books, 2012)." Finally the report concludes by urging us to remember that these issues are deeply rooted, and systemic. It's easy to address urgent issues that arise at the surface but attempting to remedy the issue long term often involves uprooting and altering systemic systems involving hunger and poverty. "Until and unless social priorities are directed towards human-well being,

and not necessarily profit making, it will be an uphill battle, skewed in a direction that's not going to work (Books, 2012)." Therefore, it is crucial that immediate food needs are met, while also working towards addressing the deeper systemic issues of hunger, poverty, and unemployment. The ultimate goal of the report is to "ensure that all in our community can regularly enjoy nutritious food, obtained in ways that do not stigmatize or separate (Books, 2012)."

Elements of Access in the Farm Hub Region

This report was prepared by Joshua Simons, who is a Senior Research Associate at the Benjamin Center for Public Policy Initiatives. He also served on the United Way ALICE Research Advisory Committee for the State of New York. Simons worked in collaboration with the Hudson Valley Farm Hub to assess the elements of access to food experienced by residents around the Farm Hub region. The Farm Hub itself works with, "Hudson Valley farmers and partner organizations to identify barriers and opportunities for building a resilient food system (*Hudson Valley Farm Hub*, 2020). Originally being a private farm, in 2013 the Farm Hub transitioned to a non-profit organization and aims to bring resources, people and institutions together by, "building programming to harness the region's strengths for a more resilient future (*Hudson Valley Farm Hub*, 2020)."

Objectives

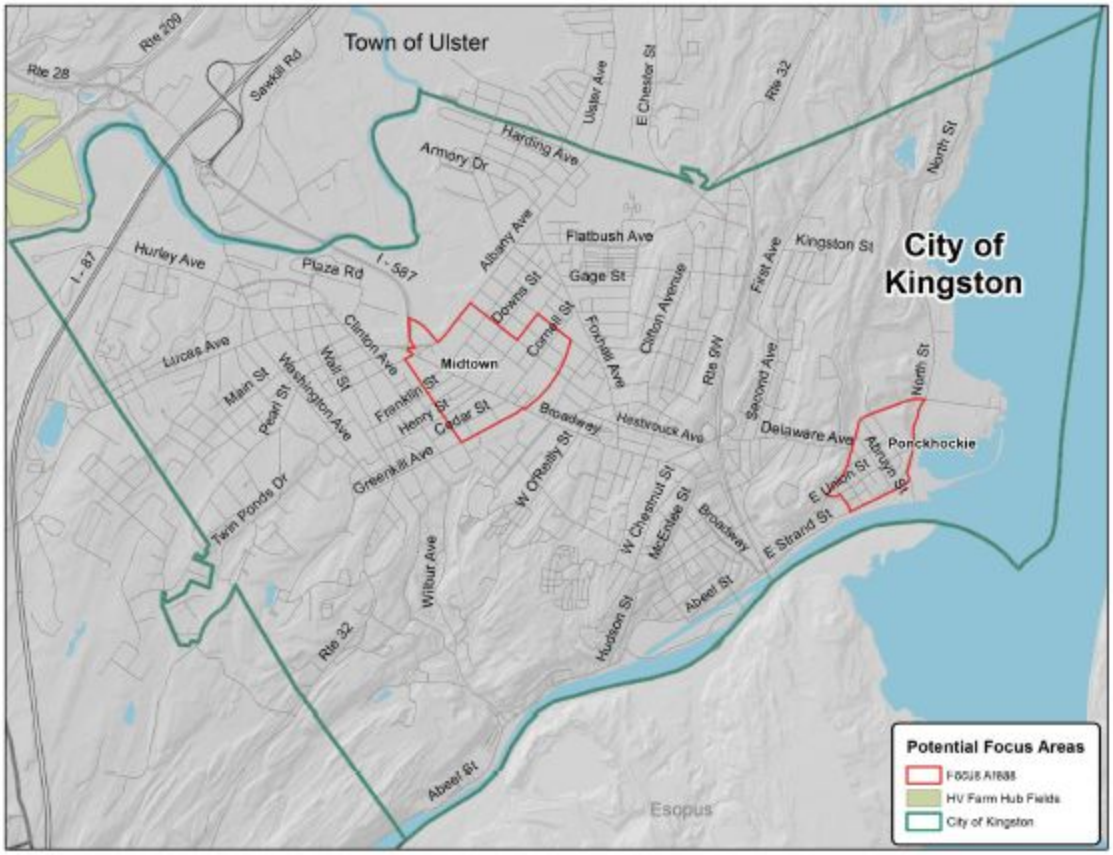
The focus of this report is on barriers to food access with the goal being to, "gain a better understanding of the social environment in and around the Farm Hub, with particular focus on

the City of Kingston where the barriers to food access are greater (than the rest of the study area), and where there are concentrated populations that are economically insecure, live in an area without immediate access to affordable, nutritious food, lack private access to transportation, and utilize a limited public transportation system (Simons, 2019).” An important aspect of this report is that it looks at indicators as well as barriers to accessing healthy food, rather than food insecurity itself. In order to do a comprehensive report on food insecurity in the area, surveys would have to be conducted which is a more complex endeavour also costing more to accomplish.

Localities, Demographics, Methodologies, and Findings

The study areas of this report consist of the Town of Marbletown, the Town of Hurley, the Town of Kingston and the City of Kingston. These areas are a combination of rural, suburban, and urban areas consisting of a total population of 48,476 people, however more than half of this population (23,252) live in the City of Kingston. The demographic of the study area is majority white (83.07%) with Black and Hispanic populations primarily living in dispersed enclaves within the different regions of the City of Kingston. There has also been found higher rates of poverty within the City of Kingston, specifically in the reports two main focus areas: Midtown and Ponckhockie.

Map 4. Potential Focus Areas



(Simons, 2016)

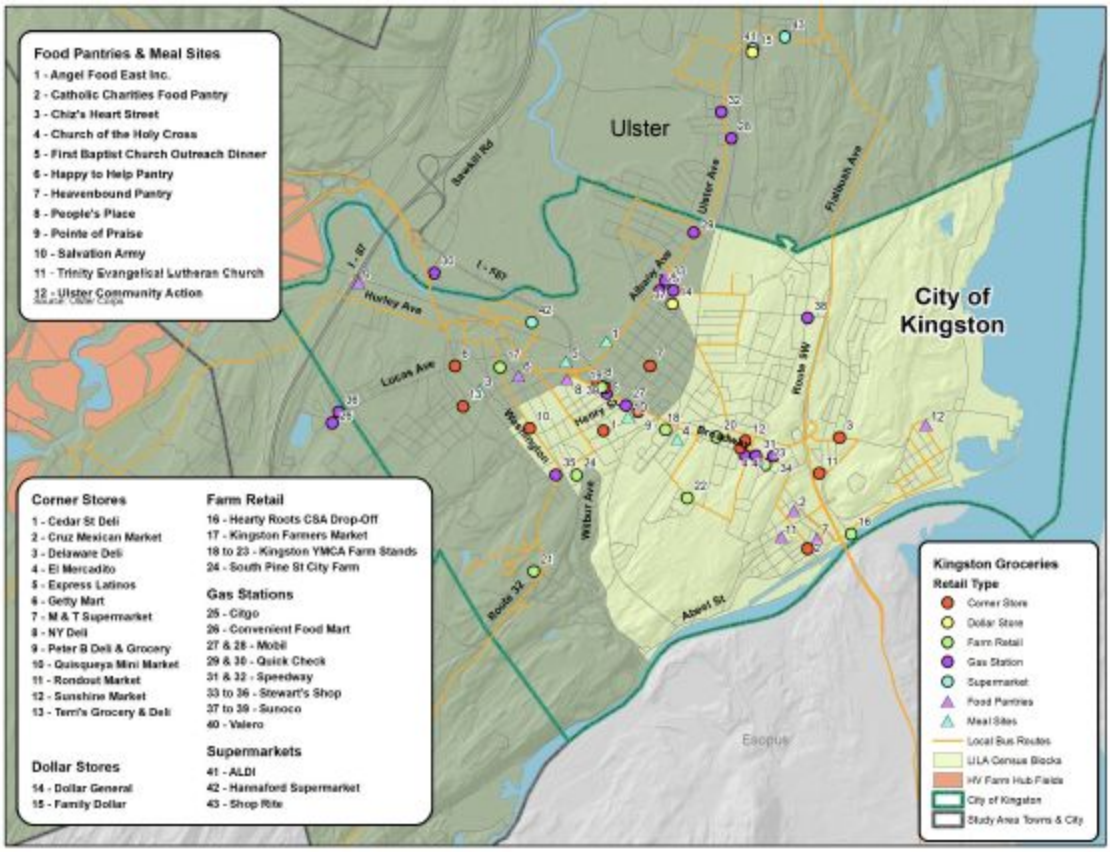
The first main focus area within the City of Kingston is Midtown. This area was chosen as the primary focus area as it showed the largest challenges to food access. The majority of the focus area (section north of Broadway) has a median household income of $25,000, with 36% of the population living below the federal poverty level and with 87% of households living either beneath the federal poverty level or beneath the ALICE (asset limited, income constrained, employed) threshold which has been calculated for the City of Kingston. In the area, the employment rate is 21% and the “educational attainment” is amongst one of the lowest in the study. The population in this area is younger in age with a high percentage of people speaking a

language other than English in their households. The report suggests that this is due to the high percentage of the population being ethnically Hispanic in this area. Moreover, this area also has a higher population density than other areas in the region with a much lower level of automobile ownership. The report considers this area one of the most vulnerable to food insecurity as there is a strong lack of personal transportation along with low usage of public transportation in conjunction with there being mainly corner stores and bodegas as the primary source for acquiring groceries. The report discusses how these smaller markets tend to have little or no fresh fruit and vegetables, therefore making them indicators for limited food access, and more specifically, to nutritious and affordable food. Lastly, there are also no food banks within this focus area (Simons, 2019).

The next highest priority focus area is Ponckhockie. Unlike Midtown, Ponckhockie does not have a high concentration of people who identify as ethnically Hispanic, rather it is primarily Blacks and Caucasians. The population density of this area is also very high due to the neighborhood being heavily compacted on a peninsula that extends into the Hudson River at the outlet of the Rondout Creek; and has only effectively two roads in and out of the neighborhood. The report suggests that this isolation within the City contributes to the limited food access experienced within the area. Furthermore, 26.5% of the population lives beneath the federal poverty level and 74.18% of households are either beneath the poverty level or beneath the ALICE threshold. Moreover, while the educational attainment index scores are higher in comparison to the Midtown area, they are still considerably below average when compared to the region as a whole. The unemployment rate in this focus area is 16%, and has a very low rate of automobile ownership; however does have a much higher rate of public transportation usage.

The report suggests that this is most likely due to their being no retail food locations in the area, nor many employers. If the area was less isolated, this may pose less of a risk, however since there is a "lack of access to reliable public transportation and the lack of retail food locations within the study area" shows that this area faces significant barriers to food access (Simons, 2019).

Map 5. City of Kingston All Food Locations



(Simons, 2016)

The data used in this report for the Census Block Level: Population, racial and ethnic demographics was from the 2010 Decennial Census Redistricting Data. All other data reported at the census block group level, is from 2016 US Census American Community Survey (ACS) for

demographic and economic indicators. The data on ALICE (Asset Limited Income Constrained, Employed) is reported at the census block-group level. This data was calculated using the Census ACS (2016) data while utilizing the ALICE methodology. For individual food retail locations, food pantries, emergency feeding sites, ect… this data was collected from an array of sources including Google Maps searches, websites of various organizations working in the space, and interviews with people who are knowledgeable of food access within the City of Kingston (Simons, 2019).

While the following information is not included in the report, the ALICE methodology is unfamiliar to many, therefore this section will highlight an overview of what this methodology entails to ensure a better understanding of the report itself. The ALICE methodology measures the ALICE population, which is the demographic of people who are above the federal poverty level but are struggling financially to meet their basic needs (*unitedforalice.org*). The philosophy behind ALICE focuses on the federal poverty level (FPL). While the FPL has provided a nationally stated income threshold for determining who is poor, the measure is currently outdated and does not reflect the current cost of basic necessities. It also is improperly adjusted to reflect the cost of living in different states throughout the U.S. Therefore, while many people are statistically above the FPL, they are still experiencing financial hardships because the FPL does not accurately account for the disparities in states and changes in cost of living. Therefore, the ALICE methodology aims to fill in the gap between the outdated FPL measure and the demographic of people above the poverty line who are struggling financially to meet their basic needs (*unitedforalice.org*).

The formula for ALICE is as follows: 1) The ALICE metric is based upon the Household Survival Budget, which determines how many households are struggling in a given county. By using the Household Survival Budgets for different household combinations, the Farm Hub developed a pair of ALICE thresholds for each county: a) one for households headed by someone younger than 65 years old; and b) one for households headed by someone older than 65 years old (*unitedforalice.org*). The Household Survival Budget is calculated based on an estimate of the total cost of essential household variables including housing, child care, food, transportation, health care, technology, taxes and miscellaneous 10% of the total. In the report, when the Farm Hub discusses the ALICE threshold, this "represents the minimum income level necessary based on the Household Survival Budget *(unitedforalice.org)*." How did the Farm Hub figure out who fit the ALICE demographic?

1. For households headed by a person 65 years or younger, the ALICE threshold is calculated by adding the Household Survival Budget for a given family of four plus the Household Survival Budget for an individual adult. That number is then divided by 5 and multiplied by the average household size for households headed by someone under 65 years old in each county.
2. For households headed by a person 65 years or older, the ALICE threshold is calculated by multiplying the Household Survival Budget for an individual adult by the average senior household size in each county.
3. The results are then rounded to the nearest Census break ($30,000, $35,000, $40,000, $45,000, $50,000, $60,000, or $75,000).
4. The number of households who fit the ALICE demographic is calculated by subtracting the number of households in poverty which are reported by the American Community Survey, 2007-2014, from the total number of households below the ALICE Threshold.
5. The number of households in poverty according to racial/ethnic categories are not reported by the American Community Survey. Therefore, when determining the number of ALICE households by race/ethnicity, the number of households earning less than $15,000 per year is used as an approximation for households in poverty. (*unitedforalice.org*)

Through this methodology, the Farm Hub was able to determine which households were either above or below the federal poverty line and from that, which households were below the ALICE threshold. As discussed above, large percentages of households living in the Midtown and Ponckhockie areas were either beneath the federal poverty line or beneath the ALICE threshold. This is representative of how many people within these areas are struggling financially to meet their basic needs.

This chapter focused on the objectives, localities, demographics, methodologies, and results from food insecurity analyses done in different regions of the Hudson Valley. While the Farm Hub report did not focus specifically on the prevalence of food insecurity within the Farm Hub region, it did highlight crucial elements of access that people in the region experience in regards to acquiring healthy and adequate food. These reports found similar barriers to food security within their findings including lack of sufficient income, housing and wages, lack of transportation, locality in conjunction with lack of transportation, and cultural and language barriers (race/ethnicity). These elements to food access in conjunction with the existing approaches will be discussed further in the following chapter.

Chapter 5
Analysis of Reports and Literature

Based on the literature review on food insecurity and the given reports, this chapter analyzes the relationship between the two; what is happening on the ground versus what is happening in academia. This chapter will focus on what combinations of approaches these reports are combining in their methodologies and to what extent they are including or not, the capability approach. Through this analysis we will see how these reports highlight similar frameworks of thinking in regards to measuring food insecurity as well as the discrepancies in their approaches. Despite some of these approaches being rendered more or less, obsolete, this chapter will examine facets of them nonetheless in regards to the methodologies used in the reports.

Focusing on the first dimension of food security: availability, all three reports referred to food availability in one form or another, however that was not their main focus. As discussed in chapter three, the food availability approach is considered the most outdated as the emphasis is placed on food availability rather than access and utilization. While all the reports show regions in the area in which there is a lack of access, none of the reports indicate a lack of food, as the current conundrum of food insecurity in the Hudson Valley is not that food is not readily available, but rather that the vulnerable groups discussed in the reports lack access to healthy and nutritious food due to barriers to access.

All the reports do however discuss income as a barrier to food security, reflecting components of the income-based approach in their studies. Both the Poughkeepsie Plenty and the Ulster County Report used similar methodologies to assess the issue of inadequate income being a driver of food insecurity by conducting household surveys which is the primary metric used by

the income-based approach. The methodology used by the Poughkeepsie Plenty was derived from the USDA Household Food Security Scale Survey Questions:

> "1. In the last 12 months, did you or others in your household ever cut the size of your meals or skip meals because there wasn't enough money for food? [If "yes," ask question #2]
> 2. How often did this happen? [Affirmative answers: "almost every month" and "some months but not every month"]
> 3. In the last 12 months, did you or others in your household ever eat less than you felt you should because there wasn't enough money for food?
> 4. In the last 12 months, were you or others ever hungry but didn't eat because there wasn't enough money for food?
> 5. Please tell me whether this statement was often, sometimes, or never true for you or other members of the household in the past 12 months: "The food that we bought just didn't last, and we didn't have money to get more." [Affirmative answers: "often true" and "sometimes true"]
> 6. Please tell me whether this statement was often, sometimes, or never true for you or other members of the household in the past 12 months: "We couldn't afford to eat balanced meals."
>
> (Nevarez, Grove, Tobin, & Simons, 2014)

These questions were used to assess a household's financial ability to meet their basic nutritional needs. While the questions in the report do not address individual well-being, it does provide an accurate assessment on more specific dimensions of food security, such as access. Despite this, the Poughkeepsie Plenty report's methodology is more largely focused on the income-based approach, however with advancements on food security assessment, the report does not focus entirely on income. In the secondary stages of their research, the Poughkeepsie Plenty report conducted research to assess the availability of fresh food, affordability of staple foods, and acceptance of EBT (electronic benefit transfer) and WIC food benefits in the city's food retailers. They found that fresh food was indeed readily available, however not in areas considered food deserts, in which there was deprivation of fresh food. This would not necessarily be a problem if

the individual or households living in these areas had access to an automobile. Many people living in food deserts experience a lack of access to fresh food in terms of their locality in conjunction with a lack of an automobile, placing them more at risk for experiencing food insecurity. Moreover, the report found that households who bought their food at retailers (corner stores/bodegas) other than grocery stores were more at risk for experiencing food insecurity. From this, income, race/ethnicity/, and access were found to be the most prominent barriers to food security. While income is a strong factor in this analysis, food security is not solely dependent on it. Rather these issues are found to be inherently interconnected, but not necessarily interdependent.

The Ulster County report took a similar approach in their methodologies to assess the level of 'food hardships' experienced by Ulster County residents. The questions were as follow:

> "Did food you bought run out and did you not have money to buy more? Were you unable to afford to eat balanced meals? Did an adult in the family cut the size of meals or skip meals because there was not enough money for food? Did you eat less than you felt you should because there was not enough money for food? Were you hungry but did not eat because you could not afford enough food?" The more answers that were answered "yes" determined a household's level of hardship in regards to food (Books, 2012)."

These questions focus on income, access, and allocation. While these questions help to highlight vulnerable groups in terms of poverty, they do more by focusing on allocation within a household as well as the variety of foods being consumed. For further clarification, adequate income does not ensure a household will be food secure, and low-income does not ensure a household will be food insecure. Based on these two reports, income is a barrier to access, but is not a definitive reason for a household being food insecure.

The Farm Hub report discusses just that. Their methodology utilizes the ALICE metric, which focuses on the demographic of people *above* the federal poverty line but who are

struggling financially to meet their basic human needs. The report found that the majority of the Midtown and Ponckhockie focus areas had a large proportion of households living either beneath the federal poverty level or beneath the ALICE (asset limited, income constrained, employed) threshold. This shows that while a significant proportion of the population in this area is low income, there are still people who are above the federal poverty line but income constrained. The Farm Hub report further highlights other elements to access not simply including income. This includes; employment rate, educational attainment, race/ethnicity, transportation, and access.

The methodology used for the income-based approach focuses primarily on household surveys which provide information on income. While the Poughkeepsie Plenty report and the Ulster county report do focus their methodologies on household surveys to assess a household's financial ability to meet their basic nutritional needs; they go beyond that. These reports are demonstrative of income being an impediment to food security but not the totality of the issue. To reiterate, low income may affect a household's ability to be food secure, but doesn't ensure that a household will be food insecure. All of these reports also use the household as a unit of analysis, which is useful but doesn't necessarily address the individual needs of people within the household.

Additionally, while the USDA's food security analysis questions entail quality of food consumed, the focus is more on the financial ability to acquire food. However, discussed in the Poughkeepsie Plenty report is that there are two facets of being food insecure: 1) without hunger: reduced quality, variety, or desirability of diet; little indication of reduced food intake; and 2) …with hunger: multiple indications of disrupted eating patterns and reduced food intake (Nevarez, Grove, Tobin, & Simons, 2014). While the household surveys conducted incorporate

solely the USDA questions on food security (emphasizing a household's financial ability to be food secure); they also conducted secondary research to assess the availability of fresh food, the affordability of staple foods, and the acceptance of EBT (electronic benefit transfer) and WIC food benefits in the city's food retailers (Nevarez, Grove, Tobin, & Simons, 2014).

Furthermore, the Poughkeepsie Plenty report conducted research on consumer preferences, such as where they shop and if they read labels or not. The report stated that, "the most direct survey measure of concern about nutritional value was a question about attention to food labels (Nevarez, Grove, Tobin, & Simons, 2014)." While this information is important and helps inform us about the choices people make in regards to their food, it does not give direct information on the actual food being consumed and how it is being consumed (utilization). In correspondence to the basic-needs approach, this report solely focuses on the household level, while an analysis of the individual level is crucial in understanding how food insecurity is not necessarily consistent amongst household members. The basic-needs approach's methodology focuses on the household and individual level and employs food consumption surveys (which offers direct information on the food being consumed); as well as suggests the use of the dietary diversity proxy, which focuses on the quality and diversification of the food being consumed.

While all three reports address the importance of having access to healthy and nutritious food, there were no methodologies being employed on the individual level such as the dietary diversity proxy nor was information on the utilization of food acquired. Implementing these methodologies are not difficult per say, however they take more time and resources to accurately assess individual levels of food security within a given household. The Farm Hub report discusses this impasse, by stating, "unfortunately, a study of food security within the study area

could only be achieved through a survey, making it a far more complex and costly endeavor (Simons, 2019).”

The Ulster County report took a similar stance in relation to the Poughkeepsie Plenty report in which the USDA questions were asked on the household level, however these questions focused mainly on assessing the financial ability for households to meet their basic nutritional needs rather on specific food utilization and individual levels of food security; which as stated prior, could be achieved through dietary diversity proxy surveys. Furthermore, considering the Farm Hub report did not conduct surveys at the individual or household levels, they lack information directly pertaining to the food security status of individuals and households within their study areas.

Despite this, the Farm Hub, as well as the other two reports do incorporate many of the concepts utilized within the sustainable livelihoods framework including; vulnerability, sustainability, and coping strategies. With the concept of vulnerability we see two sides; the external and the internal. The external side focuses on a household’s exposure to shocks, stress, and risk while the internal side focuses on a lack of means to cope with these forces without experiencing damaging loss (Burchi & Muro, 2016). While all the reports don’t explicitly discuss these external and internal sides of vulnerability, through highlighting the at risk populations and the adversities experienced within those communities, vulnerability is addressed and brought to attention. This vulnerability is experienced through lack of sufficient income, housing and wages, lack of transportation, locality in conjunction with lack of transportation, and cultural and language barriers (race/ethnicity).

The following concept addressed under this framework is sustainability. “A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future (Burchi & De Muro, 2016).” By emphasizing vulnerability and resilience, it becomes clear that many of these communities in the reports do not live sustainable lives in terms of their capability to recover from stresses and shocks. This is exemplary of food insecurity. While one barrier to access may not result in an individual being food insecure, many barriers oftentimes do. When individuals or households face a multitude of barriers (listed above), their ability to cope and recover from external and internal imposing factors weakens, as does their ability to be food secure. All the vulnerable communities discussed in the reports face these barriers to access on a daily basis resulting in a continuous or increased risk of food insecurity.

The third concept of the SL framework’s analysis of food security is coping strategies which directly ties into the concepts prior, as they are all interrelated. Coping strategies, “represent a set of activities that are undertaken, in a particular sequence, by a household in response to exogenous shocks that lead to declining food availability (Burchi & De Muro, 2016).” The Poughkeepsie Plenty report refers to coping strategies in their USDA definition of food security, as food security is the ability to acquire socially acceptable foods in socially acceptable ways meaning that individuals and households do not have to resort to emergency food supplies, scavenging, stealing, or other coping strategies to acquire the adequate and nutritious food they need to be food secure (Nevarez, Grove, Tobin, & Simons, 2014).

From this, we begin to see how food security approaches have begun to shift away from availability with a stronger emphasis on access, as well as the inclusion of different forms of

capital (natural, physical, human, financial, and social) that affect a household's ability to be food secure. All of the reports address (while not directly) a lack of capital experienced by the vulnerable groups in their studies. Lacking capital in any of these contexts causes impediments for individuals being able to achieve their livelihood objectives (*Application of the Sustainable Livelihoods Framework In Development Projects*, 2017). A lack of social capital can be represented by individuals lacking networks and connections, lack of participation in formal groups (or simply a lack of participation within household decision-making), or lacking relationships of reciprocity, trust and exchange (*Application of the Sustainable Livelihoods Framework In Development Projects*, 2017). Furthermore, many individuals in these studies lack many elements of physical capital including; access to road and transport, housing and safe buildings, access to water and sanitation, clean and affordable energy, and a lack of access to information (communication) (*Application of the Sustainable Livelihoods Framework In Development Projects*, 2017). The Farm Hub's findings on barriers to access include lack of sufficient income, housing and wages, lack of transportation, locality in conjunction with lack of transportation, and cultural and language barriers (race/ethnicity). The other two reports discuss the same barriers to access which are ultimately representative of a lack of capital (from different contexts) experienced by the vulnerable groups within these studies.

Based on these approaches, we can see both continuities and discrepancies represented from the methodologies combined both on the local level and within the literature. Hitherto the entitlement and capability approaches, past approaches have lacked crucial components of food security analysis including, freedom and agency, utilization, and unequal distribution of food within a household (often affecting negatively women and children) (Burchi & Muro, 2016).

All of these reports touch on aspects of the entitlement approach. The Poughkeepsie Plenty report, Ulster County report, and the Farm Hub report focus on some variables of people's endowments such as employment (unemployment), and wages. Moreover, the Poughkeepsie Plenty report and the Ulster County report focus on intangible resources, which are a person's endowments that are not physical; in this instance, education, specifically nutritional education. However, the Poughkeepsie Plenty report is the only report that emphasizes food prices in different regions of the City of Poughkeepsie. The Poughkeepsie Plenty and Ulster County reports briefly discuss the importance of nutritional education but do not have any surveys that test the nutritional education levels of food secure and insecure individuals. Furthermore, the Farm Hub report focuses simply on the educational attainment of individuals within their study areas (Midtown and Ponckhockie in Kingston). In terms of personal endowments, all the reports discuss transportation or a lack of owning a personal automobile as a barrier to access, especially in rural areas or areas considered to be food deserts.

Based on what the reports are discussing, much of their interpretations of food insecurity align with the capability approach however their methodologies only go so far as operationalizing the approach has yet to be done in a feasible way. The Ulster County reports discusses many of the barriers to food security as systemic problems that while warrant immediate attention and are responsive to immediate aid, are not resolved by short term solutions. "Too often, people who want to help are not focused on self-development and self-empowerment, but more on charity and service (Books, 2012)." The capability approach stresses this need of self-empowerment/development and agency. Humans need to have the agency and freedom to live the lives they choose to value. As stated prior, as positive agents of

one's future, an individual's actions can either perpetuate a given situation or enable them to alleviate aspects of their lives in which they do not value; in this case, being food insecure, but need the necessary freedom in order to do so.

Furthermore, the Ulster County report concludes by focusing on the importance of addressing hunger issues not entirely through feeding programs but also through focusing on systemic issues. "Until and unless social priorities are directed towards human well-being, and not-necessarily profit making, it will be an uphill battle, skewed in a direction that's not going to work (Books, 2012)." This quotation indirectly summarizes the means-ends distinction of the capability approach by looking at human well-being as the end to development rather than the means to an end of economic development and growth. This is exemplary of how many reports done like these, on the local level, are reflective of crucial aspects of the capability approach showing that their line of thinking is very much in sync with what the approach is arguing for. The Poughkeepsie Plenty report further discusses food insecurity in Poughkeepsie as being a

> "local manifestation of national and social problems: poverty, unemployment, underemployment, wage levels, and the fragility of the safety net. Food insecurity in Poughkeepsie is a local manifestation of national social problems: poverty, unemployment, underemployment, wage levels, and the fragility of the safety net. (Nevarez, Grove, Tobin, & Simons, 2014)."

Similar to the Farm Hub Report, all of these reports indicate the same common denominators when it comes to barriers to food security. The majority of them being systemic issues that as stated in the Poughkeepsie Plenty report, manifest themselves locally. The capability approach can hopefully aid communities towards mitigating these issues by imploring policy makers and stakeholders to think about food security in a more holistic and integrated way. Integration comes from individual *valued functionings* being heard, addressed, and empowered with the aid

and support of local policy makers and organizations. While these barriers to food security tend to be systemic, capabilities go beyond food availability, access, income, ect… and focus on what people are able to do with their lives based on their freedoms to achieve the lives in which they value living.

Chapter 6
Conclusion

This essay has focused its attention on the issue of food insecurity in the Hudson Valley, prompted by the initial conundrum in question: why are some people going hungry and experiencing food insecurity in one of the most farm and food rich areas of the country? As troubling as this question is for me and many others, this essay has aided in deepening my understanding of how we as individuals within communities as well as government agencies and institutions perceive, assess, measure, and analyze the varying definitions and dimensions of existing food security approaches and frameworks.

Through this essay we can see how there are various definitions of food security, and because of this there are various ways in which food security has been measured. The capability approach is a more holistically integrated approach towards assessing food security. The capabilities lens assesses aspects of the approaches some organizations in the Hudson Valley are using to deal with food insecurity. The dimensions of food security local organizations in these reports tend to focus on are access to food as well as other food security related elements, including vulnerability, sustainability, and overall stability. In terms of the informational basis, these reports acquired information on some food entitlements, including household endowments (labor force, productive assets, wealth and intangible resources), and exchange conditions (prices of food items, wages, and prices of other non-food goods and services), but did not acquire data on all the variables within the informational basis. The reports also focused on measuring the basic capability, ‘being free from hunger,’ however focused their attention on measuring having enough calories for survival while discussing the importance of these calories being diverse, quality, and nutritious. However, they lacked the means to measure exactly what foods were

being consumed by individuals within the surveyed households and how they were being consumed; ultimately neglecting the assessment of the utilization dimension of food security.

While these approaches highlight barriers to food security extending beyond the lack of sufficient income, and they hint at capabilities in their conclusion and policy recommendation sections, they do not actually assess the capability to be food secure amongst individuals because as discussed in the literature review, shifting this approach from a theoretical framework to a practical one has yet to be done in a feasible way and is not necessarily the easiest endeavor.

Personally, I think a more comprehensive assessment of food security will come when reports like these can go beyond the access dimension of food security and assess the individual utilization of food through the capabilities lens. From the literature, we've learned that food insecurity may not simply be a problem of lack of assets or purchasing power but rather is a result from individuals lacking basic capabilities such as education and health care which in turn may hinder their ability to be food secure (Burchi & De Muro, 2016).

Capabilities, thus, become dependent on the freedom of individuals as agents of their own lives and future to make choices on how they choose to live based on the lives they choose to value, in conjunction with having the freedom to act on those choices without being constrained by systemic forces. The capability approach encompasses crucial factors such as participation in household decision making as well as individual empowerment through these decisions. Furthermore it concerns personal heterogeneities, environmental diversities, variations in social climates, differences in relational perspectives, and distribution with the family (Comim, 2001).

Moreover, the distinction between the capability and the functioning to be food secure becomes incredibly crucial. To revisit chapter three, "the distinction between functionings and capabilities is between the realized and the effectively possible," which means on one end an individual's actual achievements of their functionings versus the freedoms and valuable opportunities in which they can choose or hope to achieve. "Because individuals are diverse their capabilities cannot be assessed uniquely in terms of the resources they have available but also in terms of what they are capable of doing and being with these resources (Comim, 2001)." With its application to food security analysis, studies will look different depending on the individual variables needed for assessment. It becomes a matter of, "now *how many* variables we should focus on, but *which* variables (Burchi & Muro)." The capabilities applied framework to food security analysis offers us crucial insight on these variables.

As the reports were focusing on in their conclusions, these issues of food insecurity are largely based on systemic and institutional systems and forces that manifest themselves on the local level, illuminating the pervasive conundrum of food insecurity we are witnessing in the Hudson Valley. The capability approach offers a new lens in which many of these local organizations are attempting to analyze the issue of food insecurity, but find themselves lacking in terms of a practical framework for a long term solution. The understanding is that short-term aid focused on charity and services are helpful for immediate relief, but do not actually support or build up individual empowerment and development. Through the lens of the capability approach, it places individuals struggling with food insecurity within a broader context of human well-being and development not only in the food sector. It takes them out of this sector and prompts policy makers to analyze human development and well-being as an end to a means

rather than a means to an end of economic growth. The capability approach implores us to think past our traditional approaches of food security analysis and human development, and urges us to analyze people as they are; diverse, socially and culturally unique agents of their own futures with distinct values and goals for both themselves and their communities.

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