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A Living City: Food Accessibility and Urban Growth in New York City

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"The wonderful thing about food is you get three votes a day. Every one of them has the potential to change the world" — Michael Pollan

Abstract

This paper examines the way in which food equity and localization initiatives, specifically in New York City, are a vital response to urban growth and sustainable food demand. Improvements to the current food system in the form of changing the way food is produced, procured, stored, transported, and distributed improves nutrition and contributes to urban sustainability. Chapter 1 provides data on urban environmental justice issues related to food equity, drawing on research from the United Nations and food justice organizations in New York City. Chapter 2 explores the ethical issues surrounding food access and food justice in an increasingly urban and globalized world. Chapter 3 examines the economic aspect of food accessibility and how vulnerable populations are disproportionately affected in urban areas due to food deserts, produce quality, and produce distribution. This paper evaluates the food system, as well as how food system localization in New York City effectively addresses the negative social and ecological consequences of existing systems of production and operation. Chapter 4 analyzes food politics: what is being done, and not being done, in city government and grass roots, community based politics to deal with food injustices. Integrating what has been discussed in Chapters 1-4, the concluding Chapter 5 details public policy focused on urban food equity and formulates further policy recommendations, including those involving sustainable urban growth. *GrowNYC,* a food-based environmental organization at which I interned, is used as a case study throughout the paper. Finally, this paper argues that environmental initiatives which embody community collaboration and education are an essential tool in improving urban food justice, health, and sustainability.

Keywords: food system, New York City, urbanization, food justice, food insecurity, food access, population growth.

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Introduction: Flawed Food (Word Count: 832)

Food has the power to connect humans to our communities, our neighbors, cultures of past and present, and our Earth. Every human should have equitable access to healthy food, every community should have greater control over their food options, every person should have enough nutritious food to live a healthy life, and every neighborhood should have food businesses that reflect its community's cultures and diversity. Yet, the current global food production system is unsustainable. It reflects the social, economic, and physical disparities around the globe, as people without access to healthy diets live in all pockets in the world. As population, urban growth, and human migration rates continue to rise, the demand for sustainable, accessible food will increase alongside it. The new human condition that will manifest within modern urban areas creates an unprecedented stress on our food system. Furthermore, the hidden costs related to health and climate change which are associated to current dietary patterns will lead to an increase in health issues and the social costs of greenhouse gas emissions. Climate change presents unprecedented, globalized threats, especially in urban areas, where human populations are increasing exponentially. Food production, distribution, and accessibility must evolve to adapt and meet the challenges of growing human populations and food injustices, while simultaneously sustainably sourcing from our Earth. Communities and leaders must alter this fragile, global food system through a localized approach in order to build climate resiliency.

The current, worldwide injustices within the food system do not exclude those in New York City. As one of the most affluent cities in the world, many of its citizens are victims of food

injustices. Fortunately, local food access and distribution organizations have implemented initiatives which tackle the reality of these persisting urban injustices within the city's limits. In this paper I will argue that the adaptation of food localization initiatives is a vital response to the urban plight of food accessibility. The increase of these programs will transform the current food system through community involvement, education, and nutrition. Chapter 1 begins with an outline of the current global issue of food inequity and its association to climate change. Using the United Nations "Millennium Ecosystem Assessment" and "Special Report on Climate Change and Land," I will report on the global food system's broken condition in the face of world population growth. Though New York City is one of the richest cities in the world, the issue of food accessibility does not hide from its vulnerable populations. The chapter elaborates on the state of food inequity in New York City by using reports from the U.S. Census and initiatives which operate to achieve food equity while tackling social justice and climate change issues. This chapter demonstrates that food accessibility is an intersectional threat that is prevalent on both local and global scales. Chapter 2 examines the economic dimensions and causes of food inequality, not only through socioeconomic status, but also through the economic system of food deserts and the subsequent demand for relocalization. Chapter 3 discusses food ethics and equality. Chapter 4 analyzes the scope of food politics in terms of what is being done and what or whom is being neglected within public policies. I will compare city, state, federal, and international levels of government to community, grass-roots organizations within New York City on what is being proposed and accomplished in the scope of food justice. The final chapter creates a cohesive framework for public policy recommendations on achieving food equity within New York City while simultaneously tackling associated social injustices. The methods

proposed are perceived as a model for adaptation by local and global governments as a practice to curb the global issue of food accessibility and inequality in the face of climate change, human well-being, and social justice. With a sustainable, local food system, economic and social injustices which arise from issues associated to food inaccessibility are decreased. The ecological demand on our planet weakens as local production and distribution rises. Within this paper, my internship at *GrowNYC* is used as a case study to examine to social and economic impact food localization and sustainability initiatives have on vulnerable urban populations.

However, supporting small-scale food producers to get nutritious foods to markets at low cost, ensuring people have access to these markets, and converting food supply chains to work for vulnerable people is simply insufficient to afford healthy diets due to the scale of human population demand. This introduces the challenge of transforming the food system to ensure that no one is constrained by the prices of nutritious foods or affordability of a healthy diet, while we ensure that food production and consumption contribute to environmental sustainability. However, policymakers must assess context-specific barriers within their jurisdictions in order to achieve these necessary transformations. In New York City, policy makers are responsible for allocating an increase in funding for food accessibility and education organizations, whether private or public. This is an essential step in ensuring food equity for each New Yorker.

Chapter 1: Broken Systems (Word Count: 3,074)

In a world that produces enough food to feed its entire population, more than 1.5 billion people cannot afford a diet that meets the required levels of essential nutrients and over 3 billion

people cannot even afford the cheapest healthy diet.[1] Humans are intrinsically connected to the natural world, and the most intimate and direct relation we experience to it is through food consumption. The effect of human activity on ecosystems has resulted in an irreversible loss of biodiversity, which disrupts the organic cycles of ecosystems and leads to their collapse. Humans and organisms depend on the planet's ecosystems and their benefits, such as water, food, medicine, climate regulation, and aesthetic pleasure. The United Nations "Millennium Ecosystem Assessment" is a global research program that explores the relationship between ecosystem services and humanity with an urgent call for global climate action.[2] This relationship of human dependency on the environment provides resources that lead to social, economic, and physical securities. These all rely upon the ecosystem services as a single, collective resource. The four ecosystem services as identified by the "Millennium Ecosystem Assessment" are regulating (services that make life possible, such as pollination or decomposition), cultural (the role ecosystems play in human cultures), supporting (essential natural processes, such as pollination), and provisioning (services provided by nature, such as food).[3] The conceptual framework of this assessment views the environment as a resource which all organisms need for self-preservation and a space to continue the human condition through social and economic relationships. The assessment argues that we must act in accord with the environment because of human population's reliance on its irreplaceable natural capital.

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[1] FAO, IFAD, UNICEF, WFP and WHO. *The State of Food Insecurity in the World 2020: Transforming food systems for affordable healthy diets,* (Rome, FAO, 2020), 66.

[2] Millennium Ecosystem Assessment, *Ecosystems and Human Well-Being: General Synthesis*. (Washington, D.C. Island Press, 2005). vi.

[3] *Ibid.* vii.

The impact of human activity on ecosystems has altered their services and inevitably affected human well-being. According to the assessment, around 60% of the services are degrading, the majority having taken place within the second half of the twentieth century.[4] This coincides with major global trends—such as population growth and urbanization—especially between the years of 1960 and 2000, when the global population nearly doubled to reach 6 billion people.[5] With global human population increasing exponentially, the world is unable to sustainably feed all people and maintain human health. Provisioning services in respect to food are currently being degraded. Although food output grew 160% from 1961 to 2003, more than 850 million people still suffer today from chronic undernourishment despite rising food production.[6] Increased demand for food production creates greater stress on crop land, water use, and soil degradation, while unsustainable usage of food provisioning services harms ecological systems, such as biodiversity, fresh water, and nutrient cycling.[7] Soil is undoubtedly the foundation for all forms of terrestrial life on Earth, yet one-third of global land has been loss due to farming techniques that hinder the productivity and quality of the world's soil.[8] This is an issue at the forefront of future generations, leading to potential episodes of mass starvation and poverty in the future. As human population growth continues to rise, especially in urban areas, the demand for sustainable and accessible food will increase alongside it. The new human condition that will manifest within urban areas creates an unprecedented stress on our food

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4 Millennium Ecosystem Assessment, *Ecosystems and Human Well-Being: General Synthesis.* 39.

5 *Ibid.*

6 Millennium Ecosystem Assessment, *Food Ecosystem Services.* (Washington, D.C. Island Press, 2005). 212.

7 *Ibid.*

8 Tyler G. Miller and Scott Spoolman, "Chapter 12: Soil, Agriculture & Food" in *Living in the Environment: Principles, Connections, and Solutions,* 17th ed., (Belmont, CA: Brooks/Cole Publishing, 2011), 316.

system. Because ecosystem services and human well-being are directly intertwined, the reported ecosystem damage endangers the living environment and jeopardizes the security and well-being of individuals across the globe.

Additionally, the "Millennium Ecosystem Assessment" states that ecosystem services have degraded due to our drive to increase other services, such as provisioning services with respect to the global food supply. The assessment posits that the unsustainable consumption of ecosystem services will continue to grow. Even as population growth is expected to level off mid-century, global food demand is projected to increase by 70-80%.[9] As this pressure grows, businesses will find access to these inputs impaired or the costs of securing them increased. Therefore, low-input systems—such as organic farming practices—can contribute to enhancing sustainability of production systems and agricultural biodiversity. Organic agriculture contributes to a growing portion of the food system, especially as consumers in affluent countries are increasingly shifting their preferences to agricultural goods produced in this way. Furthermore, the adaptation of food localization initiatives will support the stabilization of the provisioning services of food and water with a lesser demand from large-scale transport on these resources.

The United Nation's Intergovernmental Panel on Climate Change (IPCC) published a 2018 report "Summary for Policymakers" which details a direct correlation between human activity and environmental degradation.[10] The document discusses the risks and impacts of climate change, and alarms that irreplaceable damage of our ecosystems will occur in the near future if human services and capital continues as is. In order to curtail the threat of a global

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[9] Millennium Ecosystem Assessment, *Food Ecosystem Services.* 17.

[10] Intergovernmental Panel on Climate Change, *Summary for Policymakers* (Geneva: World Meteorological 7 Organization, October 2018), 2.

warming to 1.5°C, governments must undertake unprecedented, rapid change.[11] In January of 2020, the United Nations published a "Special Report on Climate Change and Land" (SRCCL) detailing that food demand and supply are linked and must be jointly assessed in order to identify climate change challenges and adaptations. The report highlights that increases in production are associated to consumption changes, as land use has intensified to support the increasing production of food. Since 1961, food production services have increased by 240% to accompany the greater use of nitrogen fertilizers (about 800%) and water resources for irrigation (an increase greater than 100%) (Figure 1).[12] The SRCCL details that across Shared Socio-economic Pathways (SSPs) 1, 2, and 3, global crop and economic models project up to a 29% increase in

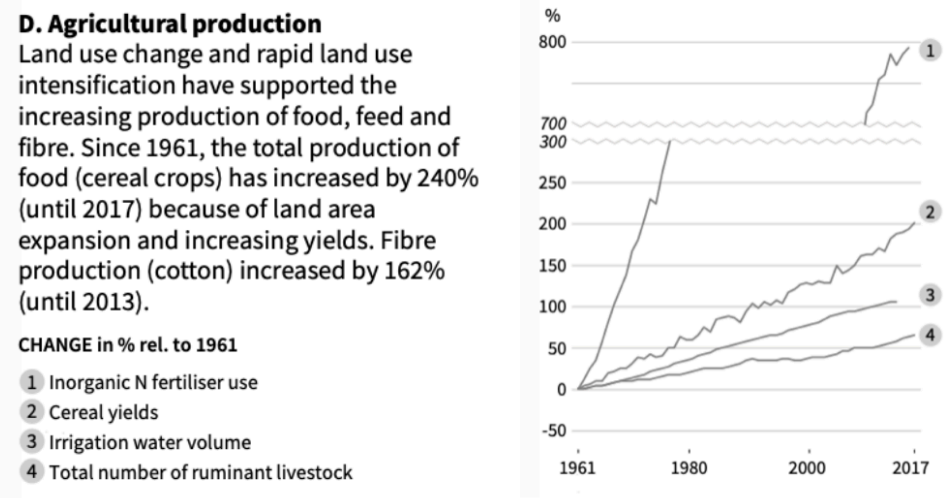

Figure 1: Food production service increases since 1961.
Source: *IPCC*

cereal price by 2050 due to climate change stressors on production, such as decreasing availability of water and soil erosion. This would impact consumers through increased prices,

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[11] IPCC, *Summary for Policymakers,* v.

[12] IPCC, 2020: *Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems,* (Geneva, 2020), 8.

affecting low-income consumers and growing the global number of people at risk of hunger up to 800 million.[13] Additionally, about 21 to 37% of total, global greenhouse gas emissions are attributed to the food system.[14] These emissions are from the systematic functions of food itself: beginning with land and agriculture use, moving onto storage, transportation, packaging, processing, retailing, and inevitable consumption (disregarding the copious amount of food waste and its climatic implications). The food system is also under pressure from non-climate stressors, such as population growth, income growth, and the increased demand for animal products.[15] Anthropogenic factors effect the food system's availability, access, utilization, and stability, which impact human health and nutrition. These non-climate stressors will increase percentage of greenhouse gas emissions by about 30-40% by 2050 if the system continues operating without intervention.[16] Impacts on food prices, nutritional quality, and extreme events are all affected by a changing climate. These climate and non-climate factors are stressors upon the food system's availability, access, utilization, and stability.

Additionally, industrial agriculture and high rates of meat consumption are directly related to climate change. By consuming animal products—food items ranging from rib-eye steaks to a slice of butter—consumers are indirectly supporting the culmination of greenhouse gases in the atmosphere. Livestock is a significant contributor to climate change, representing "14.5 percent of human-induced greenhouse gas emissions".[17] Of that percentage, feed

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[13] IPCC, 2020: *Climate Change and Land,* 28.

[14] *Ibid.* 10.

[15] *Ibid.* 8.

[16] *Ibid.* 17.

[17] "Livestock's Long Shadow—Environmental Issues and Options", The Livestock, Environment and Development (LEAD) Initiative and The Food and Agriculture Organization of the United Nations, (*FAO:* 2006), xii.

production and processing represents 45 percent.[18] This includes factors within food system processes, such as manure storage and the transportation of animal products themselves to consumers. Today, atmospheric ozone damage due to agriculture accounts for more than car exhaust does, making it a prevalent environmental issue that should be included at the forefront of climate change policy development.[19] The report also states that global meat production is "projected to more than double from 229 million tonnes each year to 465 million tonnes in 2050" due to an increase of demand for high-quality goods, such as meat, that coincide with an increase of socio-economic status and global affordability.[20] With such rapid growth comes an environmental price.

The environmental implications of meat production are dependent on natural resources, which are currently depleting due to exploitation; industrial agriculture accounts for 30 percent of the ice-free terrestrial space on the planet.[21] *Livestock's Long Shadow* notes that this environmental cost must be "cut by one half just to avoid the level of damage worsening beyond its present level".[22] Because animal agriculture takes up an ample amount of space when compared to vegetation, an economic shift of product would minimize the harmful environmental effects of meat production while maximizing farming space. The world's current and projected system of food production as seen through industrial agriculture is shockingly unstable. Action against these practices must be taken through varying levels of government in

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[18] "Livestock's Long Shadow," *FAO,* 2006.

[19] Oswald, Ed. *The Future of Food: Meat Alternatives, Plant-Based Meat.* Digital Trends. 20 April 2017.

[20] Christopher Matthews, "Livestock a major threat to environment", *FAO Newsroom*, (Rome: 29 November 2006).

[21] "Livestock's Long Shadow", 4.

[22] *Ibid.*

order to ensure environmental and health security of future generations; an improvement in policy within the livestock sector is an environmental requirement as much as a social and health necessity.

The United Nation's Food and Agriculture Organization (FAO) report "The State of Food Security and Nutrition in the World" demonstrates that human-induced conflict and climate extremes undermine efforts to end hunger, food insecurity, and malnutrition. This report finds that a key reason why millions of people across the globe suffer from these injustices are because they cannot afford the cost of healthy diets.[23] Costly and unaffordable healthy diets are associated with increasing food insecurity and all forms of malnutrition, including stunting and obesity. These are outcomes of the current global food system, which encompasses the production, transportation, manufacturing, retail, consumption, and waste of food and its impact on human health and the environment.[24] Food security is the result of this system that is directly linked to human well-being, while indirectly connected to the world's ecosystems and climate. According to the FAO, food security occurs when "all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life".[25] Food insecurity can worsen diet quality and consequently increase the risk of various forms of malnutrition. The number of people affected by severe food insecurity, which is another measure that approximates hunger, shows a similar upward trend. The report stated that in 2019, close to 750 million—nearly one in ten people in the world—were exposed to severe levels of food insecurity. Considering the total affected by

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[23] FAO, IFAD, UNICEF, WFP and WHO, 2020, *The State of Food Security and Nutrition in the World 2020,* xvii.

[24] WHO 2020, *The State of Food Security and Nutrition in the World 2020,* 118.

[25] *Ibid.* 8.

food insecurity at moderate or severe levels, an estimated 2 billion people in the world did not have regular access to safe, nutritious and sufficient food in 2019.[26] Additionally, food supply disruptions and the lack of income due to the loss of livelihoods and remittances as a result of the COVID-19 pandemic means that households across the globe are facing increased inaccessibility to nutritious foods.[27] This makes it even more difficult for poorer and vulnerable populations to obtain affordable and healthy diets.

At current rates of population growth, the population of the world is growing by approximately one billion people per decade, while urban areas are projected to inhabit 68% of the world population by 2050.[28] Given the current food system, the United Nations Food and Agriculture Organization (FAO) estimates there is a need to produce about 50% more food by 2050 in order to feed the growing world and urban population.[29] This increase in agricultural practices would also contribute to significant climate change impacts, such as increases in greenhouse gas emissions and loss of biodiversity, affecting the world's most vulnerable populations and ecosystems. An increased demand from a growing population amplifies the production, transportation, distribution, and waste of foods across the global sphere. Research by the FAO suggests that around 14 percent of the world's food is lost or wasted during the post-harvest production stage and before reaching the retail level.[30] However, population growth leads to decreasing per capita availability of fixed resources, such as land and water. A major problem

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[26] WHO 2020, *The State of Food Security and Nutrition in the World 2020,* xvi.

[27] *Ibid.* 29.

[28] United Nations, *68% of the world population projected to live in urban areas by 2050, says UN,* (New York: Department of Economic and Social Affairs, 16 May 2018).

[29] *Ibid.* 102.

[30]WHO 2020, *The State of Food Security and Nutrition in the World 2020,* 124.

facing the global food system is how to produce adequate food for an exponentially growing population without causing environmental degradation.

Food accessibility is an intersectional threat that is prevalent on both local and global scales. The broken condition of current global food and agricultural system in the face of population growth is mirrored in urban areas across the world. New York City is no exception to this reality as its residents rely on a fragile supply chain that fails to satisfy its entire population. The U.S. Census Bureau Population has reported New York City's population increase from 8,175,133 in April of 2010 to 8,336,817 in July of 2019.[31] This is a 2% increase of residents in-between censuses. Furthermore, the New York City Department of Planning Population Division projects a growth to 9.1 million residents in 2030.[32] However, as the city's population continues to increase, the number of food insecure individuals will also grow. If the City's food distribution and supply chains fail to adopt sustainable and localized practices, food inaccessibility and security as it exists in New York City will only grow alongside its population.

In the Big Apple. 8.5 million residents rely on an interconnected food supply chain that is clustered around only six major distribution centers: Hunts Point, Long Island City, College Point, Masbeth, Greenpoint, and Sunset Park.[33] On a small geographical area that is completely dependent on outside production and far from self sufficient, the interconnected transport and distribution chains across New York City are essential for its large urban population to access adequate and affordable food. However, the food supply chain in New York City is broken,

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[31] U.S. Census Bureau, P*opulation Estimates Program (PEP)*, 2019.

[32] The City of New York, *Population Projections by Age/Sex & Borough 2000-2030 (Full Report),* (Department of Planning, 2006).

[33] NYC Mayor's Office of Recovery & Resiliency, "Five Borough Food Flow: 2016 New York City Food Distribution & Resiliency Study Results", (*OneNYC:* 2016).

causing millions of individuals each year to suffer from subsequent health, economic, political, and environmental injustices.

Currently, 1.4 million food insecure residents call New York City home.[34] According to the *Food Bank of NYC,* these are individuals who rely on emergency food programs each year, such as soup kitchens and food pantries. While New York City residents make up half of all food insecure people living in New York State, the city's food insecurity rate is 21% higher than the state rate.[35] The meal gap, which represents the number of meals missing from homes who struggle to put food on their table, is approximately 242 million in New York City.[36] This means that residents who experience food insecurity fall short of an adequate diet by 242 million meals each year. Furthermore, in a city where 68% of all discarded food is considered still edible, it's clear a reset to the existing food system must occur to equally distribute nutrition and eliminate waste.[37]

Fortunately, the existence of localized food justice initiatives and environmental organizations in New York City work to combat the urban injustices that arise from the broken food system while achieving sustainable and equitable food demand. One such organization, *GrowNYC,* successfully enhances food equity and sustainability throughout the city's population via support of local and small scale farms, environmental education, recycling, community gardening and food accessibility programs. Since its foundation in 1970, *GrowNYC* is powered

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[34] Food Bank for New York City, *Hunger's New Normal: Redefining Emergency in Post-Recession New York City,* (New York, 2013), 1.

[35] Food Bank For New York City, *Research, Reports and Financials: Fast Facts.*

[36] Food Bank for New York City, *New York City's Meal Gap 2016 Trends Report,* (New York, 2016), 2.

[37] Darby Hoover, *Estimating Quantities and Types of Food Waste at the City Level,* (Natural Resources Defense Council, 2017), 6.

by a philosophy in which great cities enable residents to live healthy and fulfilling lives through eating seasonally and locally, conserving resources, preserving green spaces, and taking care of the planet. The organization operates to tackle both social justice and climate change issues that arise as byproducts of the impaired global food system. Overall, *GrowNYC* has built 125 community gardens in all five boroughs, creating a collective 1 million square feet of green space.[38] Their city-wide school gardens program works to promote and facilitate the creation of sustainable gardens in every New York City school. Today, *GrowNYC*'s hands-on environmental education programs reach 70,000 youth annually.[39] Before the global COVID-19 pandemic paused many of their educational operations, *GrowNYC* worked in 806 public and charter schools across the city.[40] Their SNAP redemption program is a national model, redeeming more than 1.4 million dollars in SNAP and health benefits at food access sites.[41] Perhaps their most successful initiative, *GrowNYC* Greenmarkets, operate year round and allow New York City residents living in food deserts, or areas with minimal access to fresh produce, a continuous resource for healthy foods by employing local farms and vendors that engage in sustainable practices.

Although organizations such a *GrowNYC* have made significant improvements to urban life and equity through increased food accessibility, much more is to be done to eradicate the reality of food in-access in the face of imminent climate change and urban growth. *GrowNYC* serves as a model for how localized food justice and environmental initiatives are a vital

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[38] GrowNYC, *2019 Annual Report,* (New York, 2019).

[39] GrowNYC, *2019 Annual Report,* 2019, 13.

[40] *Ibid*. 10.

[41] *Ibid*. 11.

response to sustainable food demand. Local, regional, and national governments should allocate funds for organizations such as *GrowNYC* to expand their practices in order to ensure sustainable food demand and the health of future populations.

However, supporting small-scale food producers to get nutritious foods to markets at low cost, ensuring people have access to these markets, and converting food supply chains to work for vulnerable people is simply insufficient to afford healthy diets due to the scale of human population demand. This arises the challenge of transforming the food system to ensure that no one is constrained by the prices of nutritious foods or affordability of a healthy diet, while we ensure that food production and consumption contribute to environmental sustainability. Policy makers must assess context-specific barriers within their jurisdictions in order to achieve these necessary transformations. In New York City, policy makers are responsible for allocating an increase in funding for food accessibility and education organizations, whether private or public. This is an essential step in ensuring food equity for each New Yorker.

Agriculture and food system revisions are key to global climate change solutions. The existence of localized programs which work to achieve food equity are fundamental efforts that combat the social and economic injustices that arise from increased food insecurities with a growing populace. As Fordham University's Garrett Broad writes, "A host of intersecting concerns—related to poverty, the built environment, environmental injustice, education, racial bias in the criminal justice system, and a lack of economic opportunity, among other factors—intersect with food issues to influence health and well-being".[42] Addressing the broken food system must be through an intersectional lens because it is deeply rooted within urban and social

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[42] Broad, Garrett M, *More Than Just Food: Food Justice and Community Change.* University of California Press, 2016. 42.

injustices. Programs which attack food inequity through food rescue, delivery, and distribution improve the health of New Yorkers on multifaceted levels while contributing to a sustainable food system by eliminating waste and upholding a regional economic system. These initiatives can be used as a model for global policies and governments as a methodology in adapting to projected demands of population growth, urbanization, and social injustices.

Chapter 2: Food Ethics (Word Count: 2,855)

Consideration of food ethics promotes ways of thinking about human well-being and autonomy and facilitates the practical and political changes needed in order to not only achieve a more just society, but foster an equitable world for future populations.[43] One of the main concerns in the field of food access is food justice. Researchers Robert Gottlieb and Anupama Joshi define food justice as "ensuring the benefits and risks of where, what, and how food is grown and produced, transported and distributed, and accessed, eaten, and shared fairly".[44] Advocates of food justice argue that the problems of the food system are not conflict free and are connected to other systemic social, economic, and racial injustices.[45]

Food justice is a main concern for the environmental justice movement, especially in urban environments.[46] The environmental justice movement began by individuals who sought to address the inequity of environmental protection in their communities, and encompasses the food

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[43] Ben Mepham, *Food Ethics* (Routledge: 1996).

[44] Robert Gottlieb and Anupama Joshi, *Food Justice* (Cambridge, MA: MIT Press, 2010); Alkon and Agyeman, *Cultivating Food Justice.*

[45] *Ibid.*

[46] Peter Ladner, *The Urban Food Revolution: Changing the Way We Feed Cities* (New Society Publishers, 2011).

justice movement as community based groups aim to build capacity by improving the ecological health of their neighborhood. Improvements such as direct contact with nature, especially for children in urban settings who often suffer from nature deficit disorder, help foster a deeper connection to the natural world. Additionally, the cultural services provided by green spaces in urban settings, specifically urban agriculture or community gardens, provide a sense of connection to place and home while building family life, community, and historic tradition.

While justice is a concern for respect and peace for others, distributive justice in regards to societal goods concerns the socially just allocation of resources, one of the most basic ones which is food (along with clothing and shelter). Injustices regarding food encompasses the fair distribution of ecosystem goods and services that are provided by agriculture and food, which are integral to human well-being, as explained in Chapter 1. The most relevant of the four ecosystem services regarding fair distribution are provisioning and cultural services. The kinds of cultural services provided by agriculture and food produce a spiritual experience and sense of place, as it has the potential to form local identity and a sense of belonging.[47] Most world religions in the ancient world were centered around agricultural civilization, and many cultures today still value the cultural and spiritual services food provides. Therefore, the unequal distribution of goods is also the unequal distribution of spiritual goods and opportunities, especially in connection to natural and spiritual value.

Today, ethical concerns of food as a limited and valuable resource that is distributed around the world have become central to moral debates. In our globalized world, food justice is an intersectional issue that is intertwined with modern social, economic, and political injustices

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[47] Millennium Ecosystem Assessment, *Ecosystems and Human Well-Being: General Synthesis*. (Washington, D.C. Island Press, 2005). vi.

many people face. This is because concerns of food insecurity within the global food system are linked to the risks, threats, and impacts of climate change. Garrett Broad details this intersectional concern in *More Than Just Food: Food Justice and Community Change* as he writes, "As society has been forced to grapple with the realities of inequitable allocations of risk, questions of justice have been brought to the fore".[48] The Anthropocene has perpetuated the idea that humans are dominant over nature; a belief which has become deeply embedded in today's globalized societies. In order to address the increasing distance between humans and nature, the world's resources—the energy it gives humans through its harvest—must be connected and valuable to current societies and the human species as a whole.

As human populations increase, questions of justice in terms of ecosystem goods and services distribution is especially important. The world population will continue to grow and is predicted to stabilize at roughly 9 billion by 2050.[49] Because of increasing consumption in developing countries, this will be equal to 12 billion people placing demands on the global food system.[50] Furthermore, as rural to urban migration continues in many parts of the world, especially in developing countries, there will be higher demands for rural agriculture practices, as well as food processing, transportation, and distribution. These conditions will exacerbate food insecurity in the developing world, creating an ethical obligation on the developed world to help growing societies and economies in both mitigation and adaptation strategies responding to injustices that arise from food insecurities.

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[48] Broad, Garrett M. *More Than Just Food: Food Justice and Community Change.* 40.

[49] Food and Agriculture Organization of the United Nations. *Ethical Issues in Food and Agriculture*. FAO, Rome, 2001.

[50] K. Morgan and Roberta Sonnino, *The urban foodscape: World cities and the new food equation,* (Cambridge Journal of Regions, Economy and Society 2010). 209.

In addition to a vital component of human well-being, equitable access to food is a human right. The framework on food justice must be shifted towards a view that considers solving food insecurity as a matter of ethical and moral duty. It is an issue we are obligated to address because every person on this planet is entitled to nutritional food as a basic human right. Food justice must be reframed towards a system which protects rights for everyone, ensuring that future generations are capable to produce enough food to safely feed everyone on the planet while diverging from the existing aura of rampant consumerism.[51] Therefore, the issue of global hunger must be seen as not simply unfortunate, but deeply unjust.

The intersection between food insecurity and human injustices is further seen though gender differences. The gender gap in food insecurity is larger among the poorer and less-educated strata of the population, for individuals who are out of the workforce, with health problems, or who live in suburbs of large cities compared with those who live in rural areas.[52] Quite often, the position of women in societies has a direct relationship to the health, accessibility, and vitality of its local food system. As women become more educated and exhibit greater power within the household, then fertility rates fall. Women's life options increase and they are no longer valued primarily for their fertility. Although the population size for the next decade or so will probably be only marginally affected by fertility decisions made now, these will be critical for future decades.

Reducing population growth rates is also important for both environmental and ethical concerns. Population growth leads to decreasing per capita availability of fixed resources, such

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[51] Anne Barnhill and Tyler Doggett, “Food ethics I: Food production and food justice”. *Philosophy Compass,* 13, no. 3 (07 March 2018).

[52] FAO, *The State of Food Insecurity in the World 2020.* 24

as land and water. Thus, for countries concerned about containing population growth, it is important to ensure that economic growth occurs in such a way as to increase food security for the poorest and ensure access to education for women and children. These findings point to the need for a deeper understanding of the forms of discrimination that make food access more difficult for women, even when they have the same income and education levels or live in similar areas as men.

Food brings us into a connection with life, land, and community. However, in our modern and globalized world, we have lost that connection and instead have galvanized a reliance and expectation on the globalized system for our needs. In the four centuries since colonial arrival, the North American continent has grown toxic in its air, its water, and its land and gravely diminished in the abundance and variety of its ecosystem health and living forms. Reflecting on this, we must ponder as to what happened, and how we as a culture have turned away from a tradition that values living in unison with the Earth. As eco-psychology pioneer Chellis Glendinning writes, "You and I are not people who live in communion with the Earth".[53] The neglect of the Earth and its services—especially the nourishment it provides the human species—demonstrates that we have grown in disconnect to our planet. Native American philosophical thought of caring for the Earth as a living system and humanity's role as part of the living cosmos is the lesson our globalized world needs to improve food equity, justice, and value in the face of climate change. By restoring food to its rightful place in society through emphasizing cultivation and growth close to where we live, we reverse the destruction cause by globalized production and a mindset that disregards the Earth. Through this, enhancing our local food

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[53] Chellis Glendinning, *My Name Is Chellis and I'm in Recovery from Western Civilization,* 1994, 34.

system will foster greater human connection to the Earth, improve health, and implement environmentally sound and regenerative practices that demonstrate care for our planet.

The current ecological perspective and attitude towards Earth's systems speaks to an expectation that the planet will simply provide for us, no matter how much we degrade, depend on, or disregard it. Today, we can see how system disruptions lead to collapse—in the case of pandemics—when our fragile, global supply chains crumbled in the wake of increased demand and an inability to produce and distribute food around the world. Through the process of reckoning with ourselves and reflecting on what our culture has done to the Earth, the answer lies in a rhetoric of lost awareness that the human community exists only as a factor of the Earth's larger community.

However, Native American philosophy can teach us to understand how to behave as an ethical species on our planet by embracing our regional, biotic community through a reciprocally nourishing local food system while mitigating climate change, minimizing global dependency, and tackling injustices. Native American philosophy and cultural practices teach us that humans have a responsibility as ethical stewards of this planet to live in communion with the Earth and extends to a reciprocal and caring attitude for one's home.

The era of globalization is a predicament of a deep disconnect from the natural world that surrounds us. A Native American perspective from the late Floyd Red Crow Westerman offers philosophical insight on placement and responsibility:

> "We were told we would see America come and go. And in a sense, America is dying—from within—because we forgot the instructions of how to live on Earth. Everything is coming to a time when prophecy and man's inability to live on earth in a spiritual way will comes to a crossroad of

> great problems. It's our belief that if you're not spiritually connected to the Earth and understand the spiritual reality of how to live on Earth, it's likely you will not make it".[54]

As Red Crow proclaims, we need to regain and reclaim the sense that everything is spiritual; the planet, universe, continent, and local food movement are all about the sacred. Perhaps Red Crow's perspective is the insight that will ignite the essential transition towards localization and regeneration in America, thus enabling this land and its people to fulfill a common destiny and responsibility as a human species.

The cultural tradition of Native American philosophy understands the Earth as a system that embraces the interconnectedness of our planet's biotic and abiotic qualities. Not only is Native American culture rooted in familial and social relationships, it is dominated by a connection with the environment that embraces intersections of land, plants, animals, and the sky. This relationship with the environment extends to embracing the entire universe and understanding it as a reciprocal and circular system. Elaborated in Joseph Epes Brown's *Becoming Part of It*, reciprocity is "a process wherein if you receive or take away you must also give back".[55] This cultural attitude speaks to all life cycles, where reciprocity circulates in both human relationships and care for the Earth. Reciprocity through a local food system means engaging in regenerative farming and distribution processes that promote regional economies and interactions, thus eradicating existing injustices of access by fostering a stronger connection to the surrounding environment. This is a cultural attitude and natural perspective that must be embraced in the face of contemporary anthropogenic neglect of Earth's living systems.

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[54] "(Part 1) Indigenous Native American Prophecy (Elders Speak part 1)," YouTube video, 6:36, posted by "MadRazorRay," September 4, 2007.

[55] Joseph Epes Brown, "Becoming Part of It," in D.M. Dooling & Paul Jordan-Smith, ed., *I Become Part of It: Sacred Dimensions in Native American Life* (1989). 12.

While western ideals recognize humans as persons and non-human components of nature as rightless resources, the philosophical Native American perspective on nature bestows a human responsibility to respect all of Earth's systems and processes. These teachings are essential for our contemporary society to overcome arrogance towards Earth's non-anthropogenic factors and global dependencies. The Ojibwa worldview of embracing the "polymorphous community" as described in *Indian from the Inside* has "much to teach Neo-Western Civilization…the Ojibwa acknowledge other-than-human persons, among them 'plants and animals' and even 'soils and waters'".[56] It's important to acknowledge the difference in perspective of these ideals, as it lends to a broader, philosophical placement of oneself within their environment and their role in preserving and caring for nature. As we care for our surrounding biotic community, global reliance for food is decreased, creating opportunities for local producers to enhance their practice and distribute within a localized region, thus alleviating food injustices by increasing local accessibility. The localization of the food system is beneficial for both people and the planet because, through local living and appreciation, we are capable to curtail resource consumption and mitigate climate change's conglomeration of destruction.

The sacred within us instinctively resonates with the sanctity of food, and human dependency on the global, fragile food system has diminished the sacred connection to what we consume. Carolyn Baker speaks on conscious eating as a spiritual practice in her essay "The Sanctity of Food":

> "The more deeply immersed we are in the sanctity of food and its origins, the more we are likely to be repelled by processed, genetically modified, and chemically laden foods that have been

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[56] McPherson and Rabb, "Some Philosophical Foundations," *Indian from the Inside: A Study in Ethno-Metaphysics* (2011).

> produced by way of massive resource and ecological destruction…the sacred within us instinctively resonates with the sanctity of food. Therefore the growing, transporting, distribution, and consumption of food are sacred acts that deserve ritual and reverence from the moment the seed is planted in the earth to the moment we have washed and put away the plate".[57]

For eating to become a sacramental act requires an honor and awareness of the process by which food comes to our table. Food is about relationships and trust, making it a sacred connection. By embracing the regional biotic community through enhancing local production, food is restored to its fundamental, sacred role in our society.

Through Native American philosophical perspectives, we can reweave our moral understanding of the Earth and reclaim the sacred connection to our biosphere and one another as a responsible and ethical species. Investing in local economies and rebuilding relationships with our neighbors, individuals who grow our food, and those who sell and distribute goods will reform ethical practices, attitudes, and dependencies within our current globalized and broken food system. Championing this commitment as locally as possible will restore balance and unison to our planet because reliance on fragile, global systems will no longer be needed. Because this transition demands time, and the climate crisis does not grant humanity the time it needs to mitigate, it is our responsibility as a species adapt and make this transition as fast as possible. Hereby local and global leaders must invest in and implement food system localization initiatives that encourage sustainable, regenerative practices which tackle inaccessibility and foster ethical relationships with the Earth. Thus, our modern, distanced connection to the Earth will morph towards a sacred relationship with our biotic region and the food we eat. Because food is what began human civilization in the first place, it is only appropriate that our species'

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[57] Carolyn Baker, *Love in the Age of Apocalypse: Cultivating the Relationships We Need to Thrive* (2015).

effort to claim responsibility for climate degradation, catalyze environmental healing, and implement regenerative growth must also begin with food.

In light of global food insecurities and projected crises, the increase of food localization and sustainability initiatives is essential to addressing the intersectional, ethical components of justice as it is intertwined with global food systems. This is especially important in urban areas, as population growth is predicted to rapidly rise, growing the need for food justice alongside it. According to authors Sarah Grace Davenport and Joanna Mishtal, these initiatives are successful because they "often operate under the rubric of food justice, a framework which links food insecurity and food systems to racial, economic, and political inequality".[58] Because food justice is an issue that requires an intersectional approach through acknowledging a multitude of injustices, projects which address food insecurity also work through a converging framework with social justice.

Food system localization is a way for producers and consumers to participate in a regional alternative to globalized food chains. A widely used definition is given by Gail Feenstra, in that local food systems are "rooted in particular places, aim to be economically viable for farmers and consumers, use ecologically sound production and distribution practices, and enhance social equity and democracy for all members of the community".[59] Local food systems are often advocated by activists, policy makers, and academics as a response to the negative social and ecological consequences of the current production system. This is because the range of

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[58] Sarah Grace Davenport and Joanna Mishtal, "Whose Sustainability? An Analysis of a Community Farming Programs Food Justice and Environmental Sustainability Agenda" *Culture, Agriculture, Food and Environment* 41, (February 2019): 56.

[59] Gail W. Feenstra, "Local Food Systems and Sustainable Communities." *American Journal of Alternative Agriculture,* 12, no. 1 (1997): 2.

social relations and opportunities that arise from food system localization initiatives foster the concept of social embeddedness, where economic activity is entangled to social relations within a community.[60] Furthermore, the range of intermediaries in these initiatives— local food shops, farmers markets, and community gardens—share a common goal of decreasing the social and geographical distance between producers and consumers. This decrease in distance thus increases a personal connection to the surrounding environment and community. Not only is food a component of human well-being, it is also a moral right. As humans and citizens on this planet, we all have an ethical duty to help others who lack access to food. It is therefore only right that public policies address food inequity while simultaneously acknowledging our human role of responsible, ethical stewards of our Earth.

Chapter 3: Unequal Urban Plates (Word Count: 3,018)

Although there are many causes of food inequity across New York City and global urban areas, the biggest determinant factor is wealth. Affluence destines ones habits, location, and quality of life, which are determinant factors in access to grocers, markets, or food distributers. Just as people and cultures are intrinsically connected to the fabric of their city based off wealth, so too is the accessibility of its food system.

Food security is built upon the three pillars of food availability, food use, and food access.[61] While food security is determined by multiple factors, geographic locations that are

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[60] Russell C. Hedberg II and Karl S. Zimmerer. "What's the Market Got to Do with It? Social-Ecological Embeddedness and Environmental Practices in a Local Food System Initiative." *Geoforum* 110 (March 2020).

[61] FAO, IFAD, UNICEF, WFP and WHO. *The State of Food Insecurity in the World 2020: Transforming food systems for affordable healthy diets*. (Rome, FAO, 2020). 46.

considered food insecure are known as food deserts. The term "food desert" is the result of a lack of the aforementioned pillars.[62] In the 2008 Farm Bill, Section 7527 defines a food desert as an area "with limited access to affordable and nutritious food, particularly such an area composed of predominantly lower-income neighborhoods and communities".[63] These are areas that are rid of nutritional foods, maintaining an environment which cannot regenerate because they fail to meet residential needs. Mark Winne, former executive director of the Hartford Food System, equates the environment of a food desert to one recovering from natural disaster:

> "Nature responds quickly to fill the void with various scattered, less attractive plants, resulting in a random assortment of flora with an irregular growth pattern. In the same way, low-income, minority neighborhoods are filled with low-quality, less desirable food options".[64]

The comparison of an ecosystem in recovery to the reality of food deserts indicates the systematic inequalities that persist in low income areas. These disparities are especially visible in urban environments, where access to nutritional food is highly dependent on ones geographic location and the urban fabric of access itself.

The extent to which an area is qualified as a food desert is often measured through accessibility. Food access is defined as the "availability and affordability of healthy foods, including both physical and economic access to good nutrition".[65] While the availability of food is measured in the time cost associated with shopping for food, affordability is the monetary difference between healthy items and less healthy options, such as the price of fruits and

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[62] WHO, *The State of Food Insecurity in the World 2020*.

[63] H.R.2419. *Food, Conservation, and Energy Act of 2008.* 110th Congress (Section 7527, May 2008)

[64] Mark Winne, *Closing the Food Gap,* (Boston: Beacon Press, 2008), 93.

[65] Institute of Medicine and National Research Council. *The Public Health Effects of Food Deserts: Workshop Summary,* (Washington, DC: The National Academies Press, 2009). 21.

vegetables compared to those of soda or fast foods.[66] Those who do not live in a food desert have access to nutritious foods because they are affordable and available. Therefore, availability and affordability of food is determined by its accessibility, which is affected by location and climate. People who live in food deserts are less likely to have grocery stores or supermarkets nearby that provide healthy items, such as a fast food chain that is a two minute walk opposed to a twenty minute bus ride to a grocery store. This makes the impact of a differential diet a reality of those living within a food desert. Therefore, creating effective health policy requires city leaders and officials an intersectional understanding of the socioeconomic dimensions of food systems rather than approaching social injustices through a fixed, political lens.

Accessibility is a complex term since it involves multiple factors, such as the attraction of destination, travel distance or cost, consumers' preferences and population demand, as well as spatial interactions among these factors. In New York City, a 2008 study by the Department of City Planning estimated that three million residents live in communities with inadequate access to supermarkets.[67] It is no coincidence that food deserts are primarily located in low income and minority neighborhoods. In 2018, 16.1% of Bronx residents lived in food insecure households.[68] It's ironic that one of the poorest areas of the country is home to Hunt's Point—one of the largest food distribution sites in the world—yet a staggering percentage of Bronx residents live in neighborhoods deprived of fresh produce and marketable goods. Food deserts pose a threat to the livelihood of residents because their nutritional intake is being compromised. The socioeconomic

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[66] Institute of Medicine and National Research Council. *The Public Health Effects of Food Deserts.* 21.

[67] NewsOne Staff, "America's Worst 9 Urban Food Deserts" (NewsOne, September 22, 2011)

[68] NYC Food Policy, *Food Metrics Report 2018.* (City of New York: 2018). 9.

realities of low income and distance from healthy food alternatives grant individuals living in food insecure areas minimal autonomy over the health and nourishment of their lives.

Reasons for this reality within the urban food system can be viewed through the economic concepts of supply and demand. On the supply side, urban retailers must take into account the cost operation. Urban retailers face several common challenges, such as infrastructure costs, zoning costs, possible crime costs, and traffic patterns.[69] Urban food services —markets, grocers, and distributors—must take into account the potential demand from the population and the transportation cost for food consumption.[70] Demand for healthy food within the urban system exists as a need for the product and transportation to obtain the good itself. However, transportation may be unaffordable to some, and therefore can increase demand for retailers to locate in lower socioeconomic status (SES) neighborhoods. Another challenge of food accessibility demand in urban areas is the dearth of land, which can affect the type of food outlets to exist. This is because retail space is typically sparse, expensive within city limits, and requires investment. Capital to invest in these spaces may be scarce among poor neighborhoods and populations. Furthermore, the general high costs of running a food business in low-income areas would imply a scarcity of other services, such as medical, banking, or housing. Through this lens, poor quality food may not be the most pressing issue facing urban areas predominantly populated with lower socioeconomic demographics, and it would be more efficient to address issues of food access through an intersectional approach of targeting social injustices.

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[69] Ploeg, ver M, *Food Deserts: Access to Affordable and Nutritious Food: Measuring and Understanding Food Deserts and Their Consequences,* (United States Department of Agriculture, 2009). 83.

[70] Hu, Zhao, et al,. *Dynamic healthy food accessibility in a rapidly urbanizing metropolitan area: Socioeconomic inequality and relative contribution of local factors,* (Cities: An International Journal of Urban Policy and Planning, 11 June, 2020).

However, the absence of an imbalance between food supply and demand does not always imply a presence of food insecurity because these processes are dynamic and can change over time. Food accessibility can be affected by changes in local factors such as population migrations, gentrification, relocation of food stores, and upscaled transportation. Suffering from food insecurity is synonymous to a lack of entitlement to food, which economists refer to as effective demand.[71] Yet, changes in food insecurity can be identified over time through rising prices, which affect poorest populations first because they spend a higher portion of their income on food.[72] Therefore, local factors are determinants in the state of one's food security because socioeconomic status determines location, which may be within a food desert. As a result, food insecurity is almost an inevitable result of poverty.

Yet, what about our economic system makes healthy foods available to some, while virtually non-existent for others? An understanding of why this scarcity exists will determine what sort of policy intervention will be successful within affected communities. Across the country, studies have proven a direct correlation in minority and low income neighborhoods and poor access to supermarkets and healthy food. In contrast, the availability of fast-food restaurants and energy-dense foods has been found to be greater in lower-income and minority neighborhoods.[73] Using national data, Powell, Slater, et al. found that poor and minority neighborhoods have fewer chain supermarkets than do more affluent, white neighborhoods.[74]

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[71] Thomson, Anne. Metz, Manfred. *Implications of Economic Policy for Food Security: A Training Manual* (FAO, Rome, 1998). Ch. 1.

[72] *Ibid.*

[73] Larson, Micole I., Mary T. Story, and Melissa C. Nelson. *Neighborhood Environments: Disparities in Access to Healthy Foods in the U.S.,* (American Journal of Preventative Medicine 36, no. 1 (2009): 74.

[74] Powell, Slater, et al. *Food store availability and neighborhood characteristics in the United States* (2007), Prev Med. 2007 Mar;44(3):189-95.

Researchers Rose and Richards found that food stamp recipients who live closer to supermarkets consume more fruit and vegetables.[75] While upper and middle class consumers have access to fresh and local produce in well stocked and clean stores near their homes, low-income individuals must settle for fast food or face a long journey to stores that sell fresh produce.

The economic causes of food insecurity create a slew of socio-economic issues that contribute to the positive feedback loop where lower socioeconomic status (SES) individuals continuously find themselves. Hereby, income inequality is mirrored through the economic systems of food deserts. This reality as it exists in the urban setting can be accredited to redlining, which is a racist, depression era practice of fencing off areas where banks would avoid investments based on community demographics of race, age, and wealth.[76] The difference of community investment is visible when comparing poor and affluent neighborhoods, especially through the lens of food access.

In New York City, because many residents don't have convenient access to fresh nor local produce and reliance on the maintenance of global systems is high, the role of not for profit organizations who work to achieve food equity is essential, especially in times of crisis. One such crucial organization is *The Food Bank of NYC*. In their 2013 report, "Hunger's New Normal, Redefining Emergency in Post-Recession New York City", emergency food program participants are overwhelmingly poor, as two-thirds have household incomes at or below 100% of the federal poverty level.[77] Its income support services help poor New Yorkers apply for

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[75] Rose D, Richards R. *Food store access and household fruit and vegetable use among participants in the US Food Stamp Program* (2004)

[76] Smith, Deborah. *Redlining, Disinvestment and the Role of Mutual Savings Banks: A Survey of Solutions,* (Fordham Urban Law Journal. Vol 9 Is 1 Art 3, 1980. 89.

[77] Food Bank for New York City, 2013. *Hunger's New Normal.*

SNAP (Supplemental Nutrition Assistance Program) benefits, and its free income tax services helps those who are employed gain access to the Earned Income Tax Credit, putting $61.4 million in tax refunds and credits back into their pockets.[78] The importance of emergency food programs to the families they serve cannot be overstated; a survey of participants showed that 55 percent noted that they would not have access to healthy, nutritious food without the program at which they were surveyed.[79] Supportive economic programs like this help residents to achieve greater dignity and independence, thus bridging overall inequity within the food gap.

Furthermore, the essential services which organizations such as *The Food Bank of NYC* offer must increase in order to meet the demands of New York City residents who rely on food accessibility programs. High levels and long periods of unemployment play a role in the increase of New York City residents utilizing emergency food services, which have been accentuated due to the global COVID-19 pandemic. In April of 2020, during the peak of the virus in New York, the number of SNAP recipients increased by 68,714 individuals, the largest one month increase for food aid recipients the city has seen.[80] For many residents, emergency food access is no longer used for short periods of time because of periodical or rare circumstances, but may be relied upon as a long term method of keeping hunger at bay.

As reliance on these essential services grow alongside residents who are unemployed or at the poverty level, New York City must exhibit the capacity to respond to the injustices presented from food insecurity by increasing funding for emergency food and accessibly

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78 Food Bank for New York City, 2019. *2019 Annual Report.* 2.

79 Food Bank for New York City, 2013. *Hunger's New Normal.*

80 Aber, Nicole. "In April, NYC Had Largest One-Month Actual Increase in SNAP Food Aid Participation in Modern History". Hunger Free America, June 10, 2020.

initiatives, thus improving social and economic equity for its vulnerable residents. Additionally, promoting food system localization through regional farmers will further guarantee residential health by waning reliance on global production and distribution.

The more non-local food systems are, the more vulnerable they are to system disruptions, such as pandemics. The impact of the COVID-19 global pandemic on the food system has led to unexpected consequences, including inflating food prices and food shortages. In the case of system disruptions, the disadvantaged tend to bear the brunt of the disturbance. In April of 2020, during the initial peak of the virus in New York, the number of Supplemental Nutrition Assistance Program (SNAP) recipients increased by 68,714, the largest one-month actual increase in food aid recipients for the city in modern times, according to Hunger Free America.[81] The fragile food system was unprepared for COVID-19's incite of mass disarray and confusion, leaving the most vulnerable populations at even higher risks of hunger and food inaccessibility.

The pandemic's effect on trade flows which provide a lifeline of food to millions of people emphasizes the unreliability of the world's food system. In a globalized system, keeping the food trade open is critical to maintain market functions and sustain economies of entire regions. It's critical that commercial trade continues to flow regardless of anything else taking place around it, as this continuity maintains livelihoods of people all across the world. Because human lives depend on the flow of trade within the food system, the disruption of food security accentuates existing injustices related to food access. For example, Sub-Saharan African countries such as Somalia and South Sudan imported more than 40 million tons of cereal from around the world in 2018 to plug gaps in local food production, thus leaving them extremely

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[81] Devin Gannon, "'No end in sight': How NYC is dealing with the growing hunger crisis," *6sqft,* July 30, 2020.

vulnerable to risks such as price swings during a global crisis.[82] In places dependent on food imports, the fluctuation of prices demonstrate dependency on other countries exports, leading prices to skyrocket in times of supply chain disruptions. The affect of impacts on trade flows is more extremely felt in urban areas where people are dependent on markets for buying food and therefore more vulnerable to price fluctuations and issues of availability or access. Therefore, a sudden or sharp decrease in the purchasing power of urban residents is especially troubling, particularly in poor countries that do not exhibit adequate fiscal resources to enact wide scale safety net programs during crises.

The devastating impacts of the global pandemic demonstrate a need for policy makers to expand investments to develop more productive, climate-resilient, and localized food systems to improve environmental and human health. In order to reduce the risk of inflating food prices, countries must hold down inflations while they simultaneously battle health and economic crises. This calls for several actions to avoid food shortages, such as emergency food assistance, the improvement of social protection, and support for smallholder farmers to enhance productivity and ability to bring goods to markets. A successful example of this is China adopting the "Vegetable Basket" policies during the global lockdown to lessen the virus's impact on smallholder production and keep food shortages to a minimum.[83] This project increased urban access to fresh produce by establishing reserves and expanding vegetable farms in the suburbs.

The pandemic has further created a greater burden for countries who already experience food injustices. These countries need international financial support so that they can import

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[82] FAO, *The State of Food Security and Nutrition in the World 2020.* 29.

[83] Maximo Torero Cullen, "COVID-19 and the risk to food supply chains: How to respond?" *Food and Agriculture Organization of the United Nations*. 29 March 2020. http://www.fao.org/3/ca8388en/CA8388EN.pdf.

additional food and promote local production without falling into deeper debt. The current state of the world demonstrates that it was awfully unprepared for the pandemic. Globally, through international cooperation to maintain trade and continuity of supply chains while simultaneously enhancing local systems, countries can prevent food shortages and successfully prepare for future crises through a decreased reliance on global support.

The prevalence of the global food system equates to a lessened dependency on local producers and farmers. Fortunately, however, the small yet significant growth in local food consumption and production shows healthy promise as greater populations are increasingly more invested in the food they eat. Across the country, farmers markets have increased to nearly eight thousand, with a current growth rate of ten percent.[84] This behavioral shift can be attributed to eaters who are willing to go far beyond the super market to find their food—authors like Michael Pollan and films like *Food Inc.*—and aim to know who grows their food, how it is produced, where it comes from, and how the animals, land and farm workers are treated in the process. This growth is further accentuated by the global COVID-19 pandemic's impact on the food system as consumers seek out foods from transparent production processes that promote both health and wellness.

As local producers see a higher consumer demand for local food, they've expanded operations in a means that makes the most viable business sense: selling directly to consumers via CSAs (Community Supported Agriculture), farmers markets, and farm stands. This is an effective means of stimulating production capacity because, through direct marketing and

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[84] Michael Brownlee, *The Local Food Revolution: How Humanity Will Feed Itself in Uncertain Times,* (North Atlantic Books, 2016), 102.

without relying on middlemen, producers are able to maintain high profit margins.[85] Programs that improve the accessibility to local foods through CSA initiatives, such as *GrowNYC's* Greenmarkets, allow vulnerable populations increased access to local foods, thus improving diet quality and overall health.

In the face of food accessibility challenges, a new industry is arising to meet the growing demand for local food. Pioneers and grassroots organizations are pouring investment and passion into innovative visions to meet this demand, especially in urban areas, where access to Community Supported Agriculture is often limited in lower socioeconomic areas. Farmers, chefs, and eaters alike are defining nourishment, and creative investors are finding new ways to fuel this revolution with capital. Slow money—a grassroots food and farming investment movement pioneered by recovering venture capitalist Woody Tasch—has become an essential strategy in these efforts to fuel money into local food and farming. In his book *Inquiries into the Nature of Slow Money: Investing as If Food, Farms, and Fertility Mattered*, these new forms of local investment are key to relocalization: investments "that catalyze the transition from a commerce of extraction and consumption to a commerce of preservation and restoration".[86] This means investing in local farming and enterprises that are needed to support a healthy local food and farming system.

The new vision Tasch describes for capital markets considers restorative economics through intersecting management principles of global carrying capacity, care of the commons, sense of place, cultural and biological diversity, and nonviolence. This intersectional approach

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[85] Brownlee, *The Local Food Revolution,* 94.

[86] Woody Tasch, *Inquiries Into the Nature of Slow Money: Investing As if Food, Farms and Fertility Mattered,* (Chelsea Green Publishing, 2010), 57.

towards the ills of the food system through an economic lens bridges the path between current economic instability and depleting natural resources in the midst of climate change. To move local capital into food and farming enterprises, local investment structures must be created, such as lending or investment platforms to democratize the movement of capital into local food economies. Such platforms would make it possible for other local communities to create their own crowd-sourced local funds, thus upholding a collective regional economy through the food system. The development of slow money strategies is a fortified and durable approach in moving the local food movement toward the emergence of a viable local food industry while receding reliance on the global system.

Because money is so woven into modern human life, both investors and governing bodies must understand how to incorporate economics into sound strategies for visions of sustainability and food security. Food equity is possible by enhancing local production and increasing economic access to high quality goods. With a decreased dependency on global systems, vulnerable populations—from urban residents living in food deserts to countries dependent on imports—are granted a safety net in times of crisis. Overall, a localized system will minimize the socioeconomic determinants that are intrinsically connected to food inequity, and will thus improve the health and vitality of its regional citizenry.

Chapter 4: Food Politics (Word Count: 3,023)

The politics of food is a conglomeration of economic, social, and ethical injustices within the food system. Just as food equity initiatives incorporate social justice themes, a political

approach is essential to address the realities of food inaccessibility of individuals, cities, and populations most affected by the socioeconomic issues related to a broken food system.

The fragility of the current food system illustrates a necessity to alter the status quo of global production and consumption patterns. Given the culture of current habits in the face of climate change, food security is difficult to achieve unless polices are successfully integrated with sustainable development goals. This will work to achieve food equity, address social issues that arise from the unequal system, and build resiliency against potential crises.

At the global scale, the United Nations and Food and Agriculture Organization acknowledges the worldwide issue of food insecurity in that standard, healthy diets are unaffordable for more than 3 billion people in the world.[87] Their 2020 report, "The State of Food Insecurity in the World 2020", posits that shifting to healthy diets which provide ample nutrients while minimizing environmental harm can contribute to reducing both health and climate change costs by 2030.[88] The FAO urges countries to rebalance agricultural policies and incentives towards nutrition-sensitive investment that increases affordability along the food supply chain and fosters behavioral change towards healthy diets.

At the national level, food policy has prioritized the development of bulk commodities while neglecting to promote local markets or healthy options. Federal investments towards large corporations and farms aim to create the most amount of food at the cheapest price, primarily in the form of corn and soy products.[89] These investments appear as inexpensive food that is high in

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[87] FAO, IFAD, UNICEF, WFP and WHO. 2020, *The State of Food Security and Nutrition in the World 2020: Transforming food systems for affordable healthy diets,* (Rome, FAO, 2020)*,* xvii.

[88] *Ibid.*

[89] Adi Segal, "Food Deserts: A Global Crisis in New York City." *Consilience: The Journal Sustainable Development* 3, no. 1 (2010): 98.

fat, sugar, and calories. As the federal government is a major source of funding for national nutrition education, it is ironic that it heavily subsidizes crops which turn into highly processed foods. The country's national body has been telling people what to eat for more than a century, and the history of such advice reflects changes in agriculture, food product development, and international trade, as well as in science and medicine.[90] Because of this, the federal government plays a powerful role in the existing systems of food deserts and realities of inaccessibility for vulnerable populations.

Fortunately, however, there are several federal programs which aim to address food accessibility and provide direct assistance to low-income Americans. Two of such, the Supplemental Nutrition Assistance Program (SNAP) and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), provide aid directly to individuals through vouchers which can be redeemed for certain food items. In New York City, SNAP and WIC recipients can obtain benefits from shopping at *GrowNYC* Greenmarkets. For every $5 spent from an Electronic Benefits Transfer (EBT) card, shoppers receive $2 in Heath Bucks: a coupon for fresh fruits and vegetables. While this encourages further spending at the Greenmarkets, it also works to achieve food equity by integrating local, seasonal, and organic produce to diets in lower socioeconomic areas that are often negatively affected by the current food system. For vendors to participate in SNAP by accepting food stamp benefits, it must offer varieties of staple food groups each day, such as grains, fruits, vegetables, meat, and dairy products.[91] Yet, this

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[90] Marion Nestle and Michael Pollan, *Food Politics: How the Food Industry Influences Nutrition and Health*. University of California Press, 2013. Pp. 31.

[91] "Store Eligibility Requirements," Supplemental Nutrition Assistance Program (SNAP), U.S. Department of Agriculture Food and Nutrition Service, last modified December 07, 2016, https://www.fns.usda.gov/snap/retailer/eligible.

program does not address the difficultly of stores in low income neighborhoods to participate due to a lack of resources or a capacity to sell these products and generate profit, thus continuing the existing system of inaccessibility. Given the context of federal neglect, however, innovative political approaches and solutions at the state, local, and community levels are attempting to implement sustainable initiatives that emphasize food equity and localization.

In New York State, socioeconomic related issues to food accessibility are addressed via healthy eating initiatives. This strategy to increase supply and demand of local products are targeted through institutional purchasing, especially in schools. In a 2009 report to the Governor, the New York State Council on Food Policy acknowledges support for the proposed Healthy Schools Act, eliminating low-cost bidding requirements for schools purchasing food grown in New York.[92] This action is part of a response to "the absence of strong national standards requiring schools to provide a healthy school environment".[93] Furthermore, the New York State Council on Hunger and Food Policy—established in 2016—currently operates to expand on existing food equity programs to provide food assistance and improve access to healthy and locally grown food across the state.[94] The council's inclusion of "Healthy Eating and Food Security" in the New York State 2019-2024 Prevention Agenda indicates state-wide priorities of health improvements correlated to food equity.[95]

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[92] "Making Connections: Developing a Food System for a Healthier New York State", New York State Council on Food Policy, *Recommended State Food Politics,* (December 2009). https://www.eatrightny.org/assets/docs/nys_cfp_final_report_20091.pdf. 10.

[93] *Ibid.*

[94] "Council on Hunger and Food Policy," New York State Department of Agriculture and Markets, last modified October 28, 2019. https://agriculture.ny.gov/council-hunger-and-food-policy.

[95] "Prevention Agenda 2019-2024: New York State's Health Improvement Plan," New York State Department of Health, updated February 27, 2020. https://www.health.ny.gov/prevention/prevention_agenda/2019-2024/.

The Green Thumb Program in New York City is the largest community gardening program in the nation. To support its efforts, the city government provides programming and material support to over 550 community gardens throughout the city, covering gardening basics to more advanced farming and community organizing topics.[96] These community gardens, now managed by neighborhood residents, provide important green space and thus improve air quality, biodiversity, and the wellbeing of residents. Yet, gardens aren't just pretty spaces; they're also important community resources that allow citizens to foster a greater connection to their immediate neighborhood and local land. The City's support of community gardens should expand to not only increase funding for existing gardens, but establish community gardens in neighborhoods that suffer from food injustices. This would require involvement from individuals who wish to improve food inaccessibility in their neighborhoods to collaborate with the City's efforts, thus encouraging local civic participation.

However, attempting to change the diet of a community, whether on local or national levels, involves taking social inequities into account. One method governments may choose to persuade citizens and change behavior in terms of curbing meat consumption is through education. For example, New York City's adaptation of 'Meatless Mondays' in March of 2019 has led to the city's public schools to serve vegetarian only menus once a week to the city's 1.1 million students.[97] 'Meatless Mondays' is both an investment in the health of New York City's students and a sustainable climate. This program emphasizes the need to create an ethical and

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[96] "About," GreenThumb, *New York City Department of Parks and Recreation,* https://greenthumb.nycgovparks.org/about.html

[97] "Mayor de Blasio, Chancellor Carranza, and Brooklyn Borough President Adams Announce Citywide Meatless Mondays". *The Official Website of the City of New York.* 11 March 2019. Web. https://www1.nyc.gov/office-of-the-mayor/news/135-19/mayor-de-blasio-chancellor-carranza-brooklyn-borough-president-adams-citywide#/0

sustainable system of access to ensure the environmental security and physical health of New York City, as it reduces greenhouse gas demand while educating students on nutrition. If other cities follow sustainable initiatives such as this one, the overall health of consumers will improve due to eating less meat and a reduction of greenhouse gases that are emitted into the atmosphere. As policy makers at the local, national, and global levels begin to recognize the international need for climate action, legislation to alter lifestyle and personal choice on consumption will ensure environmental well-being and health for future generations.

As discussed throughout this paper, food localization is essential to achieving food equity. Therefore, local policy must address specific demographic needs and existing socioeconomic issues in order to improve community health. The New York City Council August 2019 agenda, "Growing Food Equity in New York City" aims to improve food policy, school nutrition, and make produce widely available.[98] The agenda recognizes food as a human right, as City Council member Corey Johnson states, "we need to establish food policies to help ensure that none of our residents are going hungry or relying on unhealthy foods to survive because they don't have the means or access to nutritious meals".[99] This agenda enables the Office of Food Policy to create a citywide food plan and oversee all food strategies within the city. It will increase food equity programs and initiatives, including the Food Expansion to Support Health (FRESH) program, which offers zoning initiatives that provide additional floor area to neighborhood grocery stores

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[98] Andrea Vazquez, Crystal Pond, Chloë Rivera, Laura Popa, and Nadia Johnson, "Growing Food Equity in New York City: A City Council Agenda," *New York City Council* (August 2019). http://council.nyc.gov/data/wp-content/uploads/sites/73/2019/08/growing-food-equity-1.pdf.

[99] Alexandra Popescu, "City Council Boosting Food Security in the Big Apple," *Foodtank,* August 2019, https://foodtank.com/news/2019/08/city-council-boosting-food-security-in-the-big-apple/.

to sell perishable produce in undeserved communities within the food system.[100] The increase in food equity initiatives allow greater access to affordable and healthy options to vulnerable populations, thus closing the ever-widening food gap within the City's local system.

While the City's action to achieve food equity derives from health improvements, grassroots initiatives effect this change and the food system at its most local level: the community. With food localization, the biggest component is community initiatives and engagement. In his book, *Closing the Food Gap*, Mark Winne takes us through his efforts at gardening and organizing community gardens, reminding readers the emphasis on "community" in these programs.[101] He details that the most successful programs connect residents to each other, the environment around them, and the food they consume.

A multitude of grassroots organizations work to address the unequal, often inaccessible food system and the socioeconomic issues which arise from it. One such not-for-profit policy impact organization that operates in New York City is *Community Food Advocates* (CFA). A justice-based advocacy organization, *CFA* works to strengthen publicly funded programs through policy analysis, coalition building, and community engagement to create food and income support for lower socioeconomic individuals and communities directly affected by food inaccessibility.[102]

East New York Farms (ENYF!) is one such initiative that uses community gardening as a form of resident activism. A project of the United Community Center in partnership with local

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[100] "Food Retail Expansion to Support Health (FRESH)," NYCEDC, Finance Solutions, last modified March 2019, https://edc.nyc/program/food-retail-expansion-support-health-fresh.

[101] Mark Winne, *Closing the Food Gap,* (Boston: Beacon Press, 2008).

[102] "Our Mission," Community Food Advocates, About, last modified 2018. https://www.communityfoodadvocatesnyc.org/about.

residents, ENYF! promotes community-led economic development in a neighborhood which has historically been victim to divestment from the city due to redlining, urban renewal, and planned shrinkage.[103] ENYF! organizes all community members to address issues of food justice in their surrounding community through youth internships, community education, urban farms, and composting programs. By food as a conduit to build community-based power through social justice, organizations such as ENYF! and the like maintain resident investment within an entire community.

Farmers market initiatives, such as the *GrowNYC* Greenmarkets, increase social embeddedness and lead to more localized and sustainable food systems. Dotted around the city and operating throughout the calendar year, *GrowNYC* Greenmarkets embrace local vendors, from bakeries to family farms in the Hudson Valley. Each market embodies social embeddedness through a personality that reflects participating producers and consumers and by influencing environmental practices on participating farms.

Furthermore, it's imperative of food ethics to address educational injustices. Because of this, children must remain a primary focus, as environmental education and connection to nature lends children aware of their relationship with and impact on the environment. This emotional connection generates environmental concern and is reinforced by the fact that a relationship not fostered with nature can affect one's relationship with food in a negative way.[104] *GrowNYC* successfully integrates environmental education through initiatives such as interactive Greenmarket school tours, and a teaching garden located on Randall's Island.

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[103] Justin Sean Myers, Prita Lal, and Sofya Aptekar, "Community Gardens and Gentrification in New York City," *A Recipe for Gentrification,* (New York: New York University Press, 2020). 257.

[104]Kora Uhlmann, Brenda Lin, and Helen Ross, "Who Cares? The Importance of Emotional Connections with Nature to Ensure Food Security and Wellbeing in Cities," *Sustainability* 10, no. 6 (2018): 2

In addition to childhood education, *GrowNYC*'s mission extends to adult training programs that emphasize the importance of community organization within a regional food system. These programs are a productive method for urban residents to cultivate connections with nature, which is especially important for those living in food deserts or areas with minimal green space. Their 'NYC Farm Beginnings' is an agricultural program designed to provide education for farmers with aspiring enterprises, including immigrant farmers with experience in their home countries. Through integrating environmental education into urban food system localization initiatives, communities are apt to increase social embeddedness and foster important relationships with the environment.

One way in which grassroots activists are combating food insecurity and inaccessibility in their communities is through community fridges. The goals of these fridges are simple: reduce food waste and feed the community. These fridges offer free food, from home-cooked meals to fresh produce, and supplies are almost entirely sourced from generosity of the local community. They are a form of mutual aid in which fridges are placed in public places, usually on or next to the sidewalk, and are open to anyone at any time. Here, the representation of mutual aid, the idea that solidarity, not charity, is what communities need in order to become fairer and stronger in the face of food inequity.

Community fridges emulate community involvement because they require volunteers to check, inspect, and clean the fridge on a regular basis. They are extremely accessible because they are open 24/7. Additionally, with community fridges comes a component of communal trust. At these refrigerators, anyone is welcome to take whatever they want and leave behind food they don't need or wish to donate. Many volunteers who clean and stock the fridges daily ask local

restaurants and stores to donate unused or unsold food items instead of throwing them away, thus tackling both food waste and hunger. Community fridges help combat food waste by allowing restaurants, supermarkets, home cooks and others with excess food to donate, while helping ensure it remains fresh. The success of this movement demonstrates the economic, political, cultural, and ethical impact that grassroots community organizing can possess over an area.

The beginnings of this movement can be credited to food sharing initiatives that tackle food waste and insecurities, such as the Foodshare program that started in Berlin in 2014, where community activists rescued food from local restaurants that would otherwise be wasted and distribute them to those who need it.[105] This movement quickly expanded as a response to growing food insecurity, and the idea of local fridges spread across the globe. The scale of this movement is seen through Freedge, an online international network that tracks the use of community fridges on every continent while promoting and supporting their local efforts; there are at least 200 registered fridges across the United States.[106]

The community fridge initiative in New York City began in East Harlem. Founded by two women, Darrielle Carter and Seantell Campbell, the fridge in their neighborhood aims to combat existing health and food disparities. Operating through mutual aid, their goal is to "provide free access to foods that not only fuel, but heal our neighbors".[107] The city's first fridge, 'The Barrio Fridge', is stocked by volunteers several times a day with fresh produce and rescued, prepared

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[105] Dayna Evans, "Give Some, Take Some: How the Community Fridge Fights Food Insecurity", (*Eater:* 17 June 2020), https://www.eater.com/2020/6/17/21291849/community-fridges-food-insecurity-coronavirus-covid-19-impact.

[106] "The Freedge Map", *Freedge:* 2021. https://freedge.org/locations/.

[107] The Barrio Fridge, "About Us", thebarriofridge.com, 2021.

meals from restaurants, bakeries, and brands.[108] A sign on the fridge reads, "Take what you need, leave what you don't", which summarizes the idea behind the community fridge movement. As pioneers of this movement in New York City, Darrell and Seantell have multiple online resources that community activists can use on how to get involved and start a fridge in their own neighborhood, such as instructional YouTube videos and an informative instagram page (@thebarriofridge). The subsequent role of social media has a huge impact in fridges across the city, as users can check what fridge is nearby and what items are there.

In the past year, community fridges have gained attention and popularity as they have grown in numbers since the global pandemic. COVID-19 and stay at home orders halted New York City's economy, and many residents found themselves out of work or sick, thus unable to fill their own refrigerators. The pandemic led to a surge in demand for the aid of emergency food providers. According to the Food Bank of New York City, there was a 75% increase in need during April 2020 than just a few months earlier, with the rate of first time visitors increasing to 91%.[109] More than half of the city's food pantries and soup kitchens reported running out of food at some point during the month of April, forcing 48% of those seeking assistance to be turned away and leave empty handed.[110] This reality has led many fridges to become a necessary source of regular support. In response to an ongoing crisis, community fridges began to pop up across

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[108] The Barrio Fridge, "About Us", 2021.

[109] Food Bank for New York City, "Fighting More than Covid-19: Unmasking the State of Hunger During a Pandemic", *Food Bank For New York City,* (Research Report: June 2020), https://1giqgs400j4830k22r3m4wqg-wpengine.netdna-ssl.com/wp-content/uploads/Fighting-More-Than-Covid-19_Research-Report_Food-Bank-For-New-York-City_6.09.20_web.pdf.

[110] Food Bank for New York City*, "Fighting More than Covid-19",* June 2020.

the city, with now over 86 fridges across the metropolitan area; nycfridge.com is frequently updated with the newest fridges in New York City.[111]

Community fridges demonstrate the power that grassroots initiatives can have in addressing local inequities. They help maintain autonomy because they are anonymous and don't require individuals to sign up to use them. While people without proper documents cannot sign up for food assistance programs such as SNAP, they can visit their local community fridge. For many, the fridges have become an essential resource in fighting off hunger on a daily basis, whether not qualifying for government aid, having an undocumented status, not having access to information on resources, or experiencing general food insecurity. Because the fridges are run by neighbors and grassroots activists, not through larger organizations or city governments, there is a minimized need to stand in lines for food distribution at a pantry or reliance on government food delivery.

Community fridges embrace a local food system, as they encourage community members to get involved with their neighborhood. Franklyn Mena, executive director of Universe City, an aquaponic farm in Brownsville, Brooklyn that supplies and distributes food to fridges across the city, writes that "the more we have control over how we produce the food, how we process the food, and how we distribute the food as a community, then we have a higher and greater chance for finding wellness solutions for our people".[112] When one is more connected to their local food system, they are more connected to their health and surrounding community. One can get involved in their community by donating to a fridges' online funding efforts, directly donating

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[111] "NYC Community Fridges", nycfridge.com*,* 2021.

[112] Amanda Rosa, "See That Fridge on the Sidewalk? It's Full of Free Food", *The New York Times,* 8 July 2020, https://www.nytimes.com/2020/07/08/nyregion/free-food-fridge-nyc.html.

food, sharing the fridges' social media, or becoming an organizer or sponsor for a fridge themselves in their community. Although the community fridge movement is fairly new, it offers potential for grassroots involvement as a method to achieve social and economic inequities by tackling food insecurity at its most intimidate level: the local community.

Humans are unavoidably connected to our environment, communities, and diets, making issues of food accessibility intertwined with social injustices. Therefore, a cohesive approach to food equity in urban areas must also address adjacent social and ethical concerns. As social justice themes are essential within sustainability agendas, a political approach to food ethics is seen through both effective policy and grassroots efforts that offer opportunities for urban populations to connect with their local environment and community through food equity and accessibility. Through small scale efforts, grassroots initiatives possess the personal power of community to influence public policy. These successful projects and movements begin local, yet their impact trickles up to policy improvements in city, state, and federal bodies.

Chapter 5: Food Policy Recommendations (Word Count: 2,979)

Given current consumption patterns and the global food system in the face of climate change, food security will become more difficult to achieve with growing populations unless polices are successfully integrated with sustainable development. This will work to not only achieve food equity, but address social injustices that arise from our modern and unequal food system.

Urban Resiliency. As the majority of the world's population becomes urban, cities find themselves at the forefront of food equity. The food system is central in this challenge because of its role to sustain human life and its connection to the climate. In the face of climate change, cities have a role to drive the ecologic survival of the human species through finding sustainable ways of co-existing with nature. Cities must assess the political and ecological scope of their local system in order to correctly serve the growing urban population and fight current food injustices. Therefore, local governments have a responsibility to address food inaccessibility through public policy by funding initiatives and organizations that work to increase system localization and food equity in the global system.

Although a global issue, the most productive way to tackle food insecurity is through local resiliency agendas because these bodies are intimately connected to their environment and population. Every city is unique in its climate and geography; environmental and social threats are specific to its own location. The hands-on, depoliticized aura of city governance should be embraced as the primary means for tackling climate change as humanity's most impending issue. Locally producing goods and food will lower transport costs, uphold regional economies, and reduce waste. Communities are capable of building resiliency to climate change through thinking and acting at a local level, leading to much more significant impacts than goals recited in global bodies.

Local actions can have an immediate impact and add up to global effects. City officials—mayors, city managers, council members—are directly accountable for their constituents and more flexible than national or state governments to take decisive action. The successful policies

that cities implement collectively or individually to address food insecurity will influence agendas for communities and governments across the world.

Cities have better on the ground experience and local adaptability, which highlights the importance of networked, on the ground governance. By altering the systemic approach to governance and relying on mayors for action, issues such as food injustice are more likely to be addressed. As Benjamin Barber argues in his book, *If Mayors Ruled the World,* mayors are far more likely to make better decisions than larger government leaders because they insist on solving rather than debating problems, which prevents politics from emerging as a filibustering issue.[113] For example, former New York City Mayor Michael Bloomberg's rhetoric is rooted in realism and resonates with the powerful role of municipal localism in an interdependent world. He insists, "the difference between my level of government and other levels of government is that action takes place at the city level" and notes that while American government right now is "just unable to do anything…the mayors of this country still have to deal with the real world".[114] While presidents preach principles, mayors pick up the garbage. A world governed by cities gives rise to a community where citizens are tied together through common activities and collective action.

Because the effects of climate change are especially prevalent in urban areas, it is only right that mitigation occurs in the heart of urban centers through its municipal government. Although cities share common issues from climate change and food accessibility due to collective concentration of human populations and the fabric of the built environment, every

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[113] Benjamin R. Barber, *If Mayors Ruled The World: Dysfunctional Nations, Rising Cities,* (Yale University Press: New Haven, 2013). 18.

[114] *Ibid.* 30.

urban area is unique in its geographic location and development. Therefore, it is essential that each city's climate change and food system resiliency strategies are tailored to its specific geography in order to effectively mitigate their impacts and curb imminent threats.

Interdependence. Because cities are central to the function and services of the food system, understanding the interdependence of cities and that all systems are connected is key for governments to collectively build a sustainable food system that is resilient to crisis and aids vulnerable populations. Modern, urban infrastructure systems are highly interdependent. When one facet of the system fails, its impacts are cascaded throughout the system. For example, just as extreme precipitation incites crop failure, it also harms other impacts of the city—such as

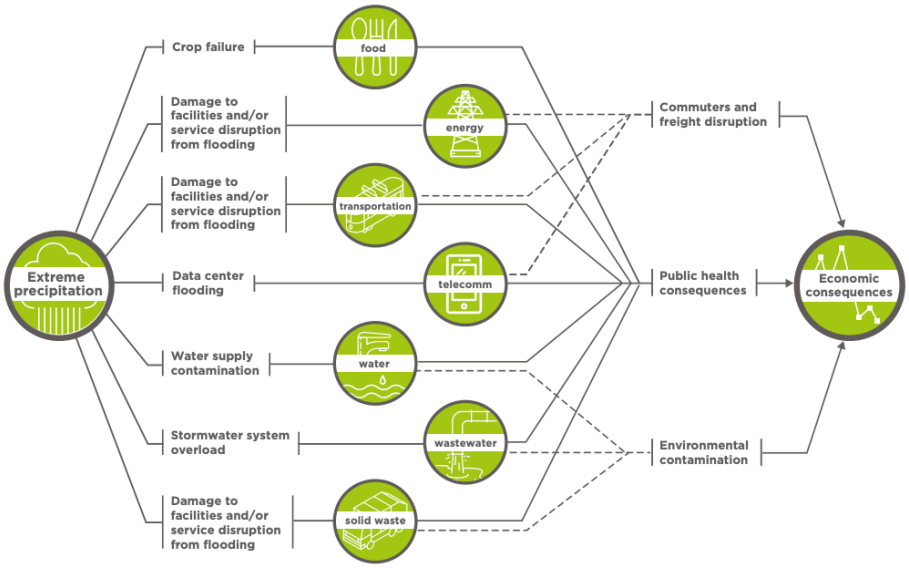

Figure 1: Extreme precipitation effects in interdependent urban infrastructure
Source: *C40 Cities & Global Covenant of Mayors*

water supply contamination or stormwater system overload—which all lead to public health and inevitable economic consequences (Figure 1).[115] In order to build a resilient city, urban policies

[115] C40Cities & Global Covenant of Mayors, "Understanding Infrastructure Interdependencies In Cities". 2019. https://c40-production-images.s3.amazonaws.com/researches/images/79_Understanding_infrastructure_interdependencies_in_cities.original.pdf?1574851306

must take the interdependence and connectedness of an urban system into account. This way, policies that integrate multiple factors of resiliency will improve the overall urban environment.

Fortunately, global cities have begun to simultaneously fight food insecurity and climate change, and these policies and processes should be more widely adapted. C40 Cities is a global network of 97 cities that are committed to address issues of climate change and serves as a example of local, municipal success through global collaboration. Founded by mayors and for mayors, C40's mission is to lead change against climate threats by encouraging cities to collaborate and share knowledge for sustainable action and deliver on the ambitious goals of the Paris Agreement at the local level. 30% of all climate actions in C40 are delivered through city-to-city collaboration.[116] Today, nearly 10,000 climate change actions are in effect in C40 Cities, with over 78% of actions reported in 2015 as planned for expansion.[117] Because of the 'get it done' attitude of mayors and city governance, these cities work quickly and effectively to respond to crises. In the wake of the COVID-19 global pandemic, C40 has implemented recovery programs and agendas that call for cities that are cleaner, safer, and greener. By employing intersectionality through inclusive action at the core of urban decision making, the C40 Cities network ensures a just transition to climate change action and improves equity for citizens affected by global crises.

Looking forward, localized implementation of food systems are key. This is because dependence of global production and transportation is lessened, decreasing overall environmental impact. Employing circularity into the food system must happen at the local level.

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[116] Barber, *If Mayors Ruled The World: Dysfunctional Nations, Rising Cities,* 30.

[117] C40 Cities, "Why Cities? Ending Climate Change Begins in the City", *#YCities C40 Cities,* 2021.

This is executed through both municipal and individual composting. Additionally, governments should adopt widespread practices of existing non-profits that work to minimize food waste while simultaneously feeding vulnerable populations, such as City Harvest's mission of food surplus rescue and distribution in New York City.[118] Because injustices are much more prevalent within a smaller system, at risk populations are addressed and served with more efficiency.

Localization. In the face of climate change, global cities that aim to develop sustainable food strategies should prioritize the localization of food chains. This should be executed through promoting local production (such as urban farms or those near urban areas) and consumption of seasonal food. Therefore, sustainable food systems in urban areas should focus to promote cosmopolitan localism.

An increased prevalence of localized efforts that combat food insecurity through promoting a local, sustainable food system will address the challenge of feeding urban populations in the face of climate change. As learned in chapter 2 and 3, lower socioeconomic individuals and communities are most affected by the economic and ethical injustices that exist in the current food system. Discussed in chapter 4, large governing bodies don't reflect local interests or injustices. Efforts by local governments are essential because their initiative and progressive influence will trickle up to larger federal bodies. This will incentivize policy to increase funding for initiatives that improve the food system and social equity.

Localization is often associated with sustainability because it assumes lower food miles for transport, leading to a lower carbon footprint of a product. However, the carbon footprint of a product's journey within the food system is only one facet of a multi-dimensional process.

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[118] "We Are Family: Annual Report 2018-2019", *City Harvest,* New York. https://www.cityharvest.org/financials/

Therefore, if produce is imported from distant regions or developing countries, market prices should reflect fair trade strategies and the true cost of a product. The life-cycle assessment must be included in analyzing the carbon footprint of a food product and its environmental impact within the food system. Because of the localized food system, there would be a lower cost of transport. With the lower cost, these healthier foods that are regionally grown at a cheaper price improves local sustainability and promotes a greater connection to the local ecology of the land. Including the true cost of a product by incentivizing consumers to purchase local and cheaper foods will promote a local system and uphold a regional economy.

Government and Business. As noted in chapter 4, the success of local, small scale initiatives will trickle up to influence public policy in large scale governing bodies. The conventional, current approach that leaves the federal government and private sector dominant of the food system must be changed to emphasize local policy and systems that empower city and state governments. This paradigm shift to lower governing bodies creates a process of empowerment in cities and local communities because it addresses immediate local concerns, issues, and demographics.

Furthermore, the federal government must divest from subsiding the food industry and instead invest to improve the diets of lower socioeconomic individuals and populations who are directly affected by food insecurities. Overall, there must be a shared goal among governing bodies to create a sustainable food system that provides economic, social, environmental, and health benefits.

Increasing the amount of supermarket chains in food desert or lower-socioeconomic areas by providing incentives for chains who carry high quality and fresh produce, such as Whole

Foods or Trader Joe's, would increase the availability of nutritious foods in urban areas most affected by food insecurity. As learned in previous chapters, issues of food accessibility are intertwined with social and economic issues. However, the addition of these chains may be ineffective if fresh fruits and vegetables are sold at the same price as charged in wealthy or suburban areas. Additionally, progressive businesses and partnerships that increase local food regeneration initiatives—such as leftover food donation or compost programs—would help alleviate the economic burden many individuals face in terms of food access. Given this reality that food inaccessibility is related to low income, increasing government benefits such as SNAP will be most effective to achieve local food equity. This would improve demand from lower socioeconomic individuals for fresh and nutritional produce because it will increase the supply and accessibility of foods that are in high demand. Therefore, supply of local, fresh, and nutritious produce in urban food deserts will meet the lower socioeconomic consumer demand for integrating higher quality diets as a means to improve health and livelihood.

The challenge of democracy in the modern world has been how to join participation, which is local, with power, which is central. The nation state has become too large to allow meaningful, local participation, even as it remains too small to address centralized, global power. Therefore, in order to build a global system against climate change that embodies meaningful impacts and resiliency within the food system, local action must be centralized. As discussed in previous chapters, the current nation-state is unable to address urban issues—especially climate change—as the crisis is too big, interdependent, and divisive. This renders national and state level governments democratically dysfunctional to coalesce successful policies. Therefore, cities

are the way in which food justice and climate mitigation policies should align themselves in order to combat global issues.

However, one international objective that highlights the key role of local governments in attacking climate change is Agenda 21, which emerged from the United Nations Rio Conference on Environment and Development in 1992. It recognizes that local governments play a critical role in climate vitality. Chapter 28 in Agenda 21 calls specifically for the preparation of local sustainability action plans, as it reads, "because so many of the problems and solutions…have their roots in local activities, the participation and cooperation of local authorities will be a determining factor in fulfilling its objectives…As the level of governance closest to the people, they play a vital role in educating, mobilizing and responding to the public to promote sustainable development".[119] By expanding and diversifying the networks through which they are and already cooperating, cities are proving they can do things together that state and national bodies cannot. Today, cities are now recognized as leading actors of defending climate and social justices throughout the world. They represent efforts to engage the community in dialogs about sustainability, and typically employ the creation of local environmental reports and indicators in order to publish action plans that are comprehensive to their surrounding environment.

Public Space. Access to urban community markets that sell nutritious foods from local producers will increase food access in lower socioeconomic areas. Local governments and communities who allocate public space for these markets will aid to uphold a local food system. Regional governing bodies should invest in public spaces to establish community farmers markets. Markets should employ local producers and operate on a timely basis, allowing

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[119] United Nations Conference on Environment & Development, "Agenda 21", *United Nations Sustainable Development,* (Rio de Janerio, Brazil: June 3-14, 1992), 285.

consumers frequent access to local foods. In New York City, this would build upon the scope and mission of *GrowNYC*'s Greenmarkets, whose network operates across diverse neighborhoods within the city's limits. This will improve the regenerative efforts of an area by creating a local system that is supported by both producers and consumers.

Crisis Resilience. The devastating impacts of the global pandemic further demonstrate a need for policy makers to expand investments to develop more productive, climate-resilient, and localized food systems to improve environmental and human health. In order to reduce the risk of inflating food prices, countries must hold down inflations while they simultaneously battle health and economic crises. This calls for several actions to avoid food shortages, such as emergency food assistance, the improvement of social protection, and support for smallholder farmers to enhance productivity and ability to bring goods to markets. A successful example of this is China adopting the "Vegetable Basket" policies during the global lockdown to lessen the virus's impact on smallholder production and keep food shortages to a minimum.[120] This project increased urban access to fresh produce by expanding vegetable farms in the suburbs and establishing reserves. The pandemic further creates a greater burden for countries who already experience food injustices. These countries need international financial support so that they can import additional food without falling into deeper debt. The current state of the world demonstrates that it was awfully unprepared for the pandemic. However, through international cooperation to maintain trade and continuity of supply chains, countries can prevent food shortages and successfully prepare the world for future crises.

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[120] Maximo Torero Cullen, "COVID-19 and the risk to food supply chains: How to respond?" *Food and Agriculture Organization of the United Nations*.

The impact that COVID-19 has had on food chains demonstrates just how fragile the current system really is. Yet, although the system's maintenance failed under the pandemic, millions of people around the world continue to suffer from food insecurities. These injustices will only exacerbate as climate change continues to threaten human populations and food production. Efforts to repair and change the food system must happen at individual, local, and national levels; responsibility must not strictly be on global bodies. This is especially because, at the local level, micro transactions and injustices are far more prevalent and easier to identify. Through local surveillance, specific policies that properly reflect and integrate system needs will adhere to specific injustices and inequities. From this, building an interdependent and connected system is key to maintenance and continuity in order to eradicate the socioeconomic, human health, and environmental injustices that arise from the global food system.

Through effective policy interventions by government mandate, increasing the amount of large retail outlets and local farmers markets in food deserts and poorer urban areas will improve food equity. This will emphasize a local system and create opportunities for individuals to access nutritious produce which they have been systematically limited from. The effort to establish these initiatives will be most effective in local governments, such as city councils or community boards. In order for smaller bodies to employ these efforts, which would assume an influx of investment and resources in order to increase incentives to achieve food equity, larger governing bodies must allocate funds and resources to smaller communities, especially those classified as food deserts. This is because lower socioeconomic areas typically have a limited pool of resources and funds to increase food equity initiatives and thereby improve community health. With the promotion of local policies through a paradigm shift to lower government bodies,

community investment and engagement will improve food accessibility by combating the increasing risks that urban population growth and climate change demand on our current and unsustainable food system.

Current issues of food justice and access reflects the social, economic, physical, and climatic disparities that exist around the globe because people without access to healthy, sustainable diets live in all pockets of the world. Steering global cultures towards localized food systems and plant based diets will improve human health and mitigate the global food system's impact on climate change. Because of this, legislative action and public policy has emerged in light of climate and health issues concerned with social and environmental injustices. However, much more is to be done to improve global food chains and production, as these unsustainable practices are a leading cause in human-induced pollution and harm to both local and global environments. Not only is access to food essential, it is a human right. Creating an environment of food equity through governance and initiatives which emphasize the local and implement regenerative practices will not only build climatic resiliences against the fragile, globalized food system, but improve urban social injustices through fostering an environment that is based on equity and a shared responsibility to reciprocate care for our shared, natural home.

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