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Social Studies**

Erasmus

**Peri-urban vegetable Production - a food and income
Supplement for Poor urban dwellers in Gloucester
community, Freetown, Sierra Leone.**

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Disclaimer:

This document represents part of the author's study programme while at the International Institute of Social Studies. The views stated therein are those of the author and not necessarily those of the Institute.

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List of Acronyms

FAO	Food and Agriculture Organization
FCC	Freetown City Council
IDP	Internal Displaced Persons
MAFFS	Ministry of Agriculture Forestry and Food Security
MLHCP	Ministry of Lands Housing and Country Planning
SDG	Sustainable Development Goal
SRLA	Sustainable Rural Livelihood Approach
UN	United Nations
UPA	Urban and Peri-urban Agriculture
UFP	Urban Food Production

Abstract

In the past 10 to 15 years, the population of Freetown which is the capital of Sierra Leone has increased exponentially due to rural-urban migration mainly because of the quest of seeking better opportunities in the big City. This exponential increase in the population has led to food insecurity and an increase in the poverty level in Freetown. Ultimately, this research tends to investigate how agriculture, especially vegetable production has helped in supplementing the food and income status of low-income dwellers in the Peri-urban areas of Sierra Leone, with the intention of fathoming the pattern, level of production, and contribution to food security. I employed the technique of the mapping survey and interviewing to properly understand, evaluate and assess how vegetable production has helped to supplement the income and food basket of low income households in the Gloucester village, and according to the result therein, vegetable production has so far helped in supplementing the food and income status of dwellers in the community, but however, Peri-Urban agriculture faces some challenges in terms of the availability of farmland, capital to buy farming tools and seeds, etc. It is also important to note that this research is a contribution to the already existing works of literature on Urban and Peri-urban agriculture, although, it focuses mainly on vegetable production within the scope of the sustainable livelihood framework.

Relevance to Development Studies

Throughout the world, localized food systems are fundamental to individual's nutrition, revenues, economies, natural balance, and culture. Food is principally, processed, traded, and consumed locally in this manner, with lots of individuals earning their livings and supporting their families through employment and activities at various stages along the food chain, i.e. from seed to dish. Examining the current state and dynamics of this phenomenon gives the opportunity to establish facts that will help create an understanding on how various factors and systems interact. This however is relevant, for effective policy formulation and sustainability, as it is vital to grasp the socioeconomic position of peri-urban food production, as well as the gender and (or) social difficulties and challenges that come with it.

Keywords

Urban, peri-urban, Agriculture, Food production, food security, vegetable, poor, nutrition, supplement, Gloucester village, low income, Freetown.

Chapter 1

1.0 Introduction

Cadzow & Binns (2016) observed that global urbanization, which has been prevalent in developing countries, is causing a growing demand for food in the cities. As the population continues to increase in the city of Freetown, so is the demand for food and the need to increase its productivity so that the high demand can be met. In this regard, it is essential that programs and policies are tailored to address the actual needs of the people and to achieve, existing systems and structures need to be examined very closely so that future programs or policies would be well informed. Based on this backdrop, this research studies the production of vegetables in the Gloucester village a peri-urban community of Freetown, emphasizing how this activity has enabled the livelihood and socio-economic wellbeing of poor urban dwellers in this community and has contributed to meeting the food security challenge in the city, especially in present-day Sierra Leone. In this paper, particular emphasis has been placed on small-scale farming/food production taking place in peri-urban communities and its contribution to food security and livelihood of low income households in the city of Freetown. The idea of a peri-urban zone is difficult since it does not merely relate to one type of industrial arrangement or a specified geographic territory around a metropolis, (Drechsel et al., 1999). However, Houston (2005) describes peri-urban regions as superficial rural transition zones within the orbit of immediate urban hubs. It combines rural and urban components, although the resultant peri-urban structures may have unique features rather than being a blend of urban and rural characteristics, (Drechsel et al., 1999).

This research specifically targets poor urban dwellers that are engaged in the activity of vegetable production in peri-urban settlements of Freetown. Because of the diverse background of the target population, such producers cannot be classified under one specific label, however, based on the testimonies of the respondents of this research it was revealed that, prior to their involvement in vegetable production in Gloucester, some of these farmers had agricultural backgrounds while others do not, and had to learn the trade along the way. Data collection and analysis were done using a qualitative research method approach. The Sustainable Rural Livelihood Approach was contextualized into

an urban setting to examine how the production of vegetables in the Gloucester Village has been utilized as a livelihood strategy, for low income households.

Vegetable Production in the Gloucester Community can be traced back to the colonial era in Sierra Leone. Evidence indicates that Mandingo migrants from Guinea were the first to bring garden cultivation techniques to the area, with many indigenous farmers adopting their ways throughout time (Binns 1982). Due to its proximity to the city's capital, over time this community does provide a good market for its producers, however, because the geography of this community is steep and sloppy, it presents a different type of farmland. This is especially true for individuals who used to be farmers before moving to this town.

The first chapter of the paper introduces the study, stating the problem and status of urban and peri-urban food production in Sierra Leone. It will reveal the basis upon which this research is based, define urban food Production in this context, and provide justification, background, and relevance of the study. The research objectives and questions, methodology, scope, and limitation, are all included in this chapter. The second chapter of this paper contains the theoretical framework upon which this research is based. This chapter also contains concepts of Food and nutrition security thereby establishing how they intersect in this situation. The History of urban food production, the state, trend, and practice of food production, and its contribution to food sovereignty and security, for poor urban dwellers in Freetown will be explained in detail in the third chapter. Data collected during this research is being analysed in the fourth chapter. The final chapter, Chapter five, consists of recommendations that emerge from the study to help boost the sector and enhance sustainability for those involved in urban food production in Sierra Leone followed by the summary and conclusion of the study.

1.1 Problem Statement

Over the years, Food security in Sierra Leone has deteriorated, while food insecurity population has increased from 34 percent to 47.7%, (Food and Security Monitoring Report, 2020). This is a scenario in which people do not have secured access to adequate portion of safe, nutritious food to support their growth, development, and a

healthy life, (Napoli 2011). This means that nearly half of Sierra Leone's population (3,921,752) isn't eating sufficient nutritious diet to live a healthy life, (Food and Security Monitoring Report, 2020). This report further states that in the year 2020, the western area rural district register for a total food insecurity level of 16.8% and 4.6% for western area urban. According to the Food consumption score which is a composite instrument measure to assess dietary diversity, food frequency, and nutritional value of diverse food groups, western area rural represent for 33.5 % of the borderline consumption index, i.e. 'households that seldom complements the intake of carbohydrate with extra nutritive food', while a 3.2 % represent poor consumption, i.e. 'households that do not regularly eat a food with essential calorie content either or both nutritional diversity to live a hale and hearty life, (Food and Security Monitoring report, 2020). This however reveals that malnutrition continues to be a major cause of child disease and death, with 34.1% of children below the age of five undersized and 18.7% skinny as a result of food insecurity, (Bigelow, 2018).

The 2011 Sierra Leone Integrated Household Survey (SLIHS), the most current household survey for which poverty data is available, projected the occurrence of poverty to be 52.9% at the nationwide poverty level of Le 1,587,746. This is down 13.5 percentage points from 66.4 percent in 2003, when the first poverty statistics were available after the civil war ended. During this time, the number of poor people remained roughly constant, at around 3.5 million. Sierra Leone's poverty rate in 2011 was 52.2 percent, based on the international poverty line (\$1.90 PPP). Last December, the 2018 SLIHS came to a close. According to preliminary study, poverty remains high, with over 50% of the populace impoverished, (WBG, poverty and equity brief 2019). Among this are individuals and families who live in abject poverty, to which catering for at least one course meal a day for themselves and their families is a struggle, and consuming a balanced diet is a near impossibility.

Emerging from years of civil conflict from 1991-2002, the city of Freetown faces a series of challenges which is exacerbated by the worldwide increase in food and fuel costs. It is in response to this that, Urban and Peri-urban agriculture (UPA) is gradually emerging as an answer to meeting the increasing food and livelihood demands in the city. Urban and Peri-urban Agriculture is any agricultural activity in and around cities, whose outputs are at least partly meant for the city, and for which there are alternatives between agricultural and non-agricultural resource uses, Mugisa et al.,(2016). In several

instances, the need for urban populations to generate at least some portion of their own food has not really been effectively addressed; hence this sector has suffered neglect. Agricultural policies in Sierra Leone like many developing nations have focused on large-scale commercial agriculture that provides food for the market and exports, or on rural peasant farmers who produce for sustenance, (Asiama (SL), 2006). The emergence of UPA has been seen to not just increase supplies food for the urban people, but it has also created employment for the unemployed in the city, (Freetown City Strategic Agenda, 2017). Such employment would either be directly tied to land cultivation or in off-farm activities such as agricultural products marketing or food processing.

However, urban food production in Freetown has been constrained with series of obstacles for those involved in its production. Idowu et.al., (2012, pg682) observed that the in Sierra Leone, “the practice of urban and peri-urban agriculture should be legalized and incorporated into city plans in order to enhance security and reduce the fear of disruption which in turn motivate high yield cultivation and reducing food shortages in the city”. Most significantly, Sierra Leone's World Bank/FAO-sponsored Agriculture sector review (Ministry of Agriculture Forestry and Food Security, 2004) recognized UPA as an important livelihood activity for relieving poverty and increasing urban food supply, and emphasized the need to promote urban agriculture.

1.2 Contextual Background

Freetown, Sierra Leone's capital is located in West Africa. It is well known for its beautiful beaches and historical involvement in the slave trade across the Atlantic. The city's symbol “the Cotton Tree” which has been around for decades is a sign of emancipation in the old town. The king's yard Gate located on the waterfront is where former freed slaves marched to independence. According to the 2015 (latest) population and housing census data by Statistics Sierra Leone, it is reported that the current population of the country is about 7, 092,113 to which the capital city of Freetown holds a total of about 1,500,234. Freetown is administratively referred to as ‘Western Area’ which is further divided into Western area urban (with a population of about 1,055,964) and Western area rural (with a population of about 444, 270), (Statistics Sierra Leone, 2015). Like most developing municipalities in West Africa, Freetown is currently struggling to manage the demand of an ever-increasing urban population. The western area of Freetown's population has increased progressively from 8.9% in 1963 to 21.1 percent

in 2015, indicating a population rise for this region during a 52-year period. Rural regions accounted for 59 percent of the total population in the 2015 Census, while urban areas accounted for 41 percent. , (Statics Sierra Leone Population and Housing Census Report on Population Project, 2015).

This rapid urbanization has social, financial, and conservational ramifications, in adding to the provision of sufficient housing, food, water, and sanitation, (UNFPA, 2007).In Sierra Leone, urbanization has influenced increased unemployment, poverty, and inadequate food quantity not only in provinces but likewise in and near towns. According to FAO/WFP, (2008), it was mentioned that since 2007, the city's socio-economic issues have been exacerbated by the worldwide rise in food prices and oil prices, which have made living in the city more difficult for Freetown occupants especially those in the poor population. This research considers poor to be low-income individuals who are vulnerable, oppressed or underrepresented population groups, or communities that experience discrimination, neglect and exclusion because of unequal power relations across economic, political and social dimensions, i.e. "poor individuals living in households with per adult equivalent below 1,625,568 Leones (i.e. equivalent to about 134 in Euros) per year in 2011", (Poverty Profile, 2013, p9).

The growing prevalence of urban poverty and population in emerging areas has given rise to the practice of UPA. It also contributes to food security in nations like Sierra Leone by creating the possibilities for urban residents to access nutritious, safe, acceptable, and cost-effective food. Despite urban food production emerging over time as a response to meeting the food scarcity challenges in urban and peri-urban settlements, the majority of urban food production is done as a subsistence tactic by individual households, usually in their backyards, roadsides, or open spaces to supplement their actual earnings, (Landon-Lane, 2004, Kekanan, 2006; Ruther and Dewar, 2005 in Idowu et al., 2012). Furthermore, urban food production serves as a reaction to the financial predicaments aggravated by structural modification initiatives and rising relocation, (Bryld, 2003). Farming in city areas has been shown to be an advantage for impoverished people by saving money on food expenditure, generating revenue from the size of produce, and providing a diverse variety of nutritional items.

Urban and Peri-urban agriculture – a definition

Urban and peri-urban agriculture has been defined varyingly to mean different things, -Drechel and Dongus (2010), reported that in cities across Sub-Saharan Africa, urban agriculture can take many forms, ranging from courtyard planting to poultry and livestock farming, as well as crop production on larger open spaces. Urban agriculture, as defined by the South African Council for Science and Industrial Research, is any practice and measure of agricultural activity that takes place in the confines of a city; horticulture, floriculture, forestry agriculture, and livestock production are all included, (Reuther and Denar, 2005). While, Mongeot (2005), describes urban agriculture as a production system that cultivates and rears, processes, and dispenses a range of food and non-food products and services found in and nearby towns, cities, or metropolises, providing human and material resource, product, and service primarily to that urban region. While there is no universally accepted definition, Urban and Peri-urban Agriculture (UPA) is defined as agriculture practices within and around cities that compete for resources (land, water, energy, labor) that may be used for other purposes to meet the needs of the urban population. Horticulture, cattle, fodder and milk production, aquaculture, and forestry are all important UPA areas. As a result, unless otherwise mentioned, the word UPA should be interpreted as inclusive for explanatory reasons, (FAO, Publication). However, this research is only limited to horticultural vegetable production which according to the F.A.O. are primarily annual plants grown as field and garden crops in the open and under glass, and are nearly entirely utilized for food. This includes all forms of cultivation that take place on private plots around the home, along highways/pathways, water beds, institutional properties (for example schools, hospitals), and patches of lands within and on the fringe of the city where vegetable crops are cultivated.

1.3 Research Objectives and Questions

Overall Objective –The overall objective of this research is to examine and understand how poor households in the Gloucester community have utilized the production of vegetables to improve their livelihood and socioeconomic wellbeing and to also examine how the production has contributed to the Food security for this particular population of urban dwellers. This research is based on the premise that urban and peri-urban food production is emerging as a coping mechanism for low income urban households in order to meet their subsidiary needs, and hence the need to provide recent and sufficient details relevant for policy formulation and implementation that will boost

productivity of the sector, provide the security and a conducive environment for those involve in the production.

Specific Objectives

1. To understand the pattern, dynamics and state of urban food production and its contribution to food security and the socioeconomic wellbeing of those involve in it production.
2. To provide substantial details on the state of urban food production that may serve as a resource for policy makers to formulate well informed policies in Sierra Leone.

Research Question

The main research question of this research is: How does the current food production system in peri-urban communities in Sierra Leone supplement food security and income for poor urban dwellers?

Sub-questions

1. What is the structure and pattern of vegetable food production in the Gloucester community?
2. How does vegetable production support households in improving their food security and livelihood options?
3. What has been the role of local stakeholders, Government officials, NGOs and social groups in enabling urban and peri-urban vegetable production?
4. How has the covid-19 pandemic influenced the cultivation/production of vegetables in this community and therefore it food security and livelihood options?

1.4 Methods and Methodology

The goal of this study is to look at all aspect of vegetable production i.e. what is produced, for and by whom, and for which purpose, in the Gloucester village. The data collection methods for this study is qualitative, this include the collection of primary and secondary data. The Qualitative research method has been used to provide an insight on the activities, challenges and to better evaluate the contributions of urban food production to meeting the food security challenge of poor urban dwellers in Freetown.

This includes a mapping research technique which was used to identify and plot spots in the given study area where vegetable production is visible, and the collection of Primary and Secondary Data.

Data collection- Primary data was collected from a total of six (6) respondents (Heads of households) which were purposefully selected based on their socio-economic differential characteristics provided qualitative data via conversations and interviews, while four (4) stakeholders (one from each sector) from the Ministry of Agriculture Forestry and Food Security, Ministry of Lands and Country Planning, Western Area Rural District Council, and local Head Men representing the community were also interviewed for the purpose of clarifying and understanding sensitive political issues. Data from Local vegetable producers were collected by the research assistant through face to face interviewing method, while the data collected from stakeholders was collected by myself through the Zoom online meeting platform. This study was conducted and completed within the time frame of July-August of 2021 and is included in the data for this study. Other qualitative data used in this study included in-depth interviews with and participatory observation. In addition to this, secondary data accessed was used to analyze the historical changes in vegetable production in the Gloucester community.

The Characteristics used to identify respondents for the Local vegetable producers specifically target heads of households (male or female) who are currently at the time of the research involved in the process of vegetable production in the Gloucester community. This was done purposely because these respondents have been or are in the position of catering for themselves and the rest of the family and that they could represent other family members. The age bracket for this sample was between 18-62.years. For the stakeholders, this research specifically targets community and government officials who are currently in decision-making positions in institutions that are directly connected to the activities of UPA in Freetown. Primary data for this research was collected from a total of ten (10) respondents.

The targeted population for this research involves low-income households who are currently engaged in a subsistent or short-chain urban food production activity (i.e those who produced for consumption purposes and (or) sell in their neighborhood and market) in their community or neighborhood. This is because this research aims to understand how this food production system works, and its unique role in subsidizing food and income for the targeted population. For the primary data collection, key informants were

selected as respondents from the targeted population within the defined location of this project as stated above, while the secondary data collection uses information obtained from surveys, articles, publications, reports, etc., that has been done on similar issues. These informants were identified, based on the type of population this research is targeting, what I want to get from the respondents, certain defining attributes such as age, family role, and social status. The semi-structured and structured interviewing technique was used to obtain well-informed data. The structured interviewing approach was used to interview key informants for the purpose of clarifying, and understanding sensitive issues. The semi-structured interview on the other hand has been used to collect data from six (6) selected participants who are heads of households identified from the sampling frame.

Mapping of vegetable production

A mapping research technique was carried out to identify and plot spots in the given study area where vegetable production is visible, which were identified within the given research location where urban agriculture is taking place, since it is a really strong facilitating method that exposes and explores the characterisation of what is available and what is to be explored. This was done through site visit by the research assistant. During the exercise, the research assistant moved around the community, identifying and plotting areas where vegetable cultivation is visible and the type of cultivation that is being done where. This was done in accordance with the mapping keys as prescribed by the research based on what the research intended to achieve. When this activated was completed, the draft sketch was developed using the data from the exercise, which was then drawn digitally as to what is presented in the Chapter 4. The Mapping Survey shows areas in the research site that was covered by the research assistant where vegetable cultivation is visible and to what extent.

This type of research technique has also been used by other authors conducting research relating to Urban and Peri-urban agriculture in Sierra Leone. Lynch et al., (2012), in their article on Urban Agriculture and Food Security utilises mapping survey as part of multi method approach that was used to collect data, stating that, the mapping process in their research resulted in the identification of markets and Garden sites in and around the city of Freetown.

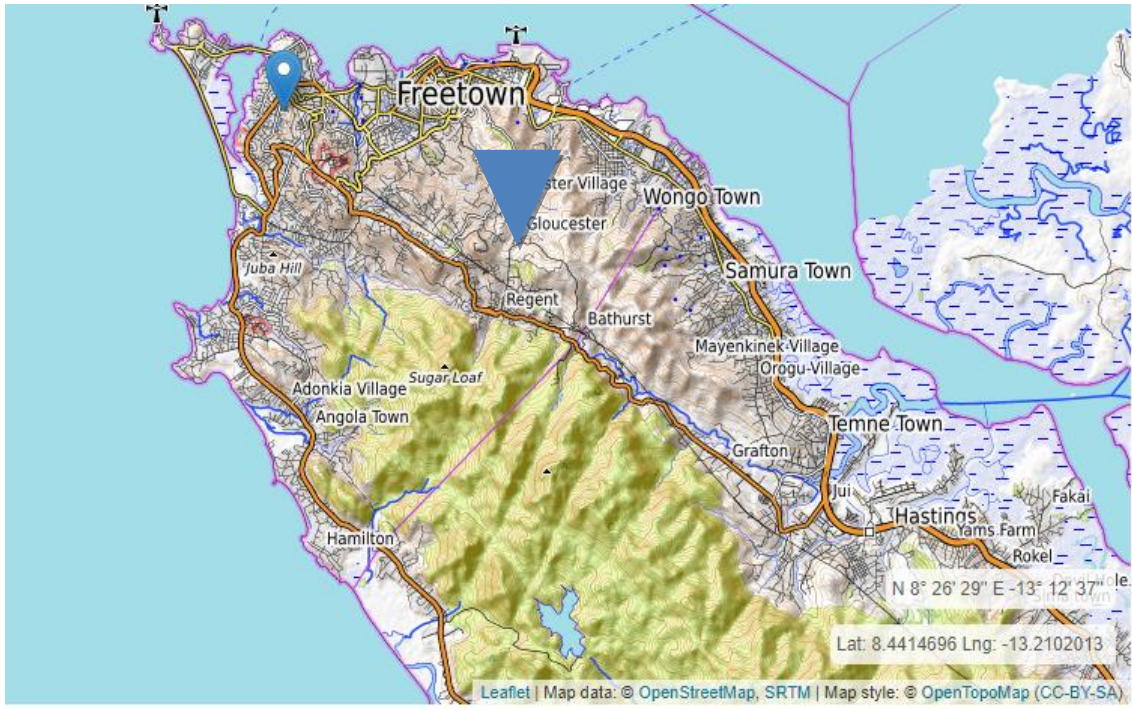
1.5 Location of the study

This study is located in Gloucester village, in the western area rural district of Freetown. According to the National Electoral Commission of Sierra Leone Local Council Ward Boundary Delimitation Report, Gloucester is a mountain village located in the western area rural district of Freetown. The Western Area, often known as the Freetown is divided into two districts: Western Area Urban and Western Area Rural, (Statistics Sierra Leone, 2015). Freetown is a seaside city on the edge of the Peninsula Mountains, a peninsula of somewhat steeply sloping hills, (Lynch et al., 2012). Gloucester village is among small settlements like Leicester and Regent, in the peri-urban slopes above Freetown that are exceptionally productive and have long been recognized for their market gardening using intensive valley-bottom and terrace cultivation methods, (Lynch et al., 2012). There have been many numerous definitions for peri-urban areas. However, the many distinct forms of Peri-urban environments have one thing in common; they are transition spaces with some degree of intertwining of urban and rural uses, (Wandl and Magoni, 2017). In reference to these evidences, this location was specifically selected and considered in this research as a Peri-urban area based on the following characteristics: geographical location, demographic characteristics, agrarian characteristics, and population dynamics. The majority of this neighbourhood is steep and hilly. Valleys run between the hills, with stream water flowing in all directions from the hill/mountain top to Freetown's core business district. This community is amongst other community that receives the city's maximum rainfall, and temperature and humidity are not prohibitive to crop development and cattle production. Tall hardwood evergreen trees dominate the vegetation in this area, providing habitat for a diverse range of species.

From the late eighteenth century, this neighbourhood was founded and inhabited by freed transatlantic slaves. The majority of them were given farmland. Rainfall in this area has decreased resulting from a number of causes including deforestation, and the proliferation of tarmac and concrete surfaces, (Winnebah et.al, 2012). The most common type of farming in this community is the production of leafy traditional vegetable varieties, especially in metropolitan areas. Tree crop plantations that existed before and during the colonial period have been reduced to side-lines or abandoned entirely. Poultry and piggy production on a modest scale for human consumption are the only livestock activity being done in this study sight.

Figure 1

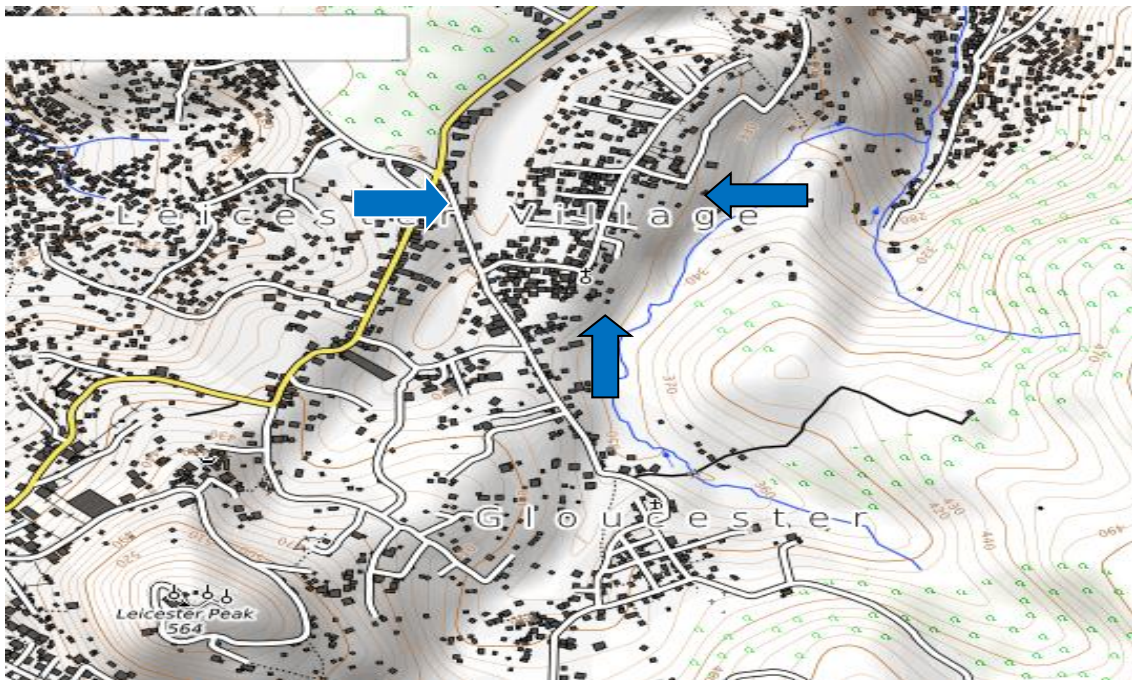
A Section of Freetown map showing the location of the Gloucester Village.



Source: Elevation map for Localities. <https://elevationmap.net/freetown-west-iii-western-urban-sl-1011300780>.

Figure 2

Map of Gloucester Indicating the study area.



Source: Elevation map for Localities. <https://elevationmap.net/freetown-west-iii-western-urban-sl-1011300780>.

Research Assistant

Primary Data collection including interviews and mapping survey was made possible with the help of a research assistant. The research assistant was chosen based on certain eligibility criteria which were specifically set for the role. These criteria include; must have attained a tertiary education, ability to speak the local and common languages fluently, knows how to relate with people, and must be living or have lived close to the research location. Being an indigene of the community, the research assistant was very efficient in getting things done and navigating smoothly in the community, and getting people to willingly participate in the research.

Ethical considerations

Before the start of this research process, I made sure to position myself in an ethical manner as prescribe by the ISS and the International ethical standards. I also made sure to articulate these standards to my research assistant and ensure that all prescribed standards were duly followed.

1.6 Limitations

The Covid-19 pandemic constrained me from travelling to the research location; hence I had to rely on the assistance of a Research Assistant to collect primary data on my behalf. This however prevented me from acquiring data through my personally observation of things around, and body language of my respondents, etc. Due to time and financial constraints, the research area has been restricted to the purposefully chosen neighbourhood. In addition, the sample size chosen reflects this restriction yet is compatible with statistical principles for studies with the goal of explaining the phenomena. The research was been limited to the Gloucester community of Freetown for the same reason. Accessing secondary data especially form national institutions on similar issues/ research proved very difficult especially because most institutions in the country still rely on the analogue system of record keeping and most documents or publications are outdated and un-updated. The research was conducted in the rainy season and hence getting to research locations was a constrain for the research assistant. Because this research has limited budget and time frame, the mapping survey was done locally and manually.

Chapter 2. Concepts, Theoretical Framework and Literature review

This chapter starts by briefly introducing the ideas of food security, food sovereignty, and food nutrition. While the advantages of UPA are much wider than the scope of this article, the framework for this research was created to look at the evidence of a link between Urban Food production and food security, in order to examine how this concepts complement each other; in achieving food security, and improve nutrition and promote sustainable agriculture'. From these bases, this chapter continues by exploring the Sustainable Rural Livelihood Approach which will be used to theoretically examine the situation of poor urban vegetable producers in Gloucester. I have used this Approach to examine the mediating process, i.e. the translation of a set of assets into a livelihood strategy and to examine how this approach can be featured in an urban perspective to understand how poor households in the community have utilized urban food production to supplement their food, improve their socioeconomic wellbeing, what's at stake and what are the odds. Finally, a literature review was included to examine what others have written on comparable topics in order to identify similarities, gaps or parallels on similar subject matter.

2.1 Understanding Food security

The idea of food security has grown, expanded, profiled, and varied since the year 1974 world food conference. At the time of writing, there were almost 200 distinct meanings of the word (Smith et al., 1993). Maxwell (1996) in his argument suggests that the many definitions of food security describe the dynamics of food issues as experienced by impoverished people. He further states that since the world food conference, there have been three major and overlapping paradigm changes in how people think about security, all of which have moved theory and policy closer to actual food poverty, (Hewitt de Alcantara 1993 in Maxwell 1996). The three shifts he mentioned are: (i) from worldwide and national, to household and individual levels, (ii) from a food-first to a livelihood-first mindset, and (iii) from objective indicators to subjective perceptions, (Hewitt de Alcantara 1993 in Maxwell 1996). However, it's evident that food se-

curity evolved from its humble origins into a veritable cornucopia of concepts. Some may believe that development on these conditions is undesirable, that a term's value is limited when it is employed in many ways or offers multiple views on reality. With all of these considered, what then is food security and how can it be measured? The phrase 'Food Security' was at the outset used to indicate whether a nation has sufficient food to satisfy its dietary needs. Whereas many have deduced national food security to imply self-sufficient which means that the country produces the food it requires or its people wants. But this never made clear if self-sufficiency meant that all people had access to sufficient food to satisfy their energy and nutritious needs, or whether meeting domestic demand was sufficient to claim self-sufficiency.

Furthermore, food security has been widely utilized as a measure of wellbeing at the household level, and various efforts have been made to operationalize the notion in the design, implementation, and assessment of programs, initiatives, and policies, (Andersen, 2009). Simply put home is called food secured if it can get the food that its members need to be healthy. At this point, it is, however, emphasized that food security happens when "all people at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life", (FAO 1996, p1). The five general pillars of food security according to Thompson et al., (2012), includes availability, accessibility, acceptability, adequacy, and action. The absence of any or all of these pillars of food security may result in food insecurity which according to (Tarasuk, 2009), is a result of scarce or uncertain access to healthy food in terms of quantity or quality, and is most often associated with poverty, which may eventually reflect in harmful dietary patterns like, low consumption of fruits and vegetables that may link to broader food-related health issues.

2.1.2. Understanding Food Nutrition Security

Food and nutrition are the elements of energy for our bodies. Every day we must eat to replenish the nutrients that we have lost. Nutritional food is abundant in a healthy diet. Fruits and vegetables should make up a significant percentage of a balanced diet, (healthline.com, 2017). According to the FAO, Global Food Nutrition Security is accomplished when every individual always, has physical, social, and economic access to adequate, harmless, and nutritious food that satisfies their nutritional requirements and

food preference for a good and healthy living. Although this definition contains elements of nutrition, it is insufficient, (Bokeloh et al, 2005). According to a widely recognized definition by FAO (2000), any item that people ingest in order to stay alive and develop is referred to as food. As a result, safe and clean water must be included in food items. They went on to say that there is an increasing need to include nutrition in food security. The nutrition emphasis strengthens features of attentive behavior, health services, and healthy places in this image and notion. This strives for ‘nutritious security which is defined as ‘adequate, nutritional status in terms of protein, energy, vitamin, and minerals, for all family members at all time’’, (Quisumbing 1995, p12), and therefore is more than food security in concept.

Bokeloh et al., (2005), use the term Food security to emphasize several aspects, i.e. not only availability, accessibility but also use and utilization. However, they define food and nutrition security to mean that, food and nutrition security is realized when adequate food is available and accessible and satisfactorily consumed by all individuals at all times to live a healthy and happy life, (Bokeloh et al., 2005). A nutritious diet helps to maintain body weight, promotes good pregnancy results, supports growth, development, and aging, and lowers the threat of prolonged illness.

However, urban areas in Africa have been ignored as ideal locations for producing food, according to sceptics of food security discourses (Crush &Frayne, 2011). They claim that food security ideologies favor rural growth over urban agriculture, despite the fact that urban agriculture has long existed in Africa and other parts of the world. In another event, Hansen, 2011; Pudup, 2008, argue that, due to the complexity, leadership, and goals surrounding each project, urban agriculture may both show food sovereignty or replicate neoliberal philosophy and exercise. At the national and local levels, food security and food sovereignty concepts are intertwined with unique political and economic histories, ecologies, and identities. Both discursive practices are built on the foundations of access and control of land and water resources, crop specificity in relation to producing, distributing, and consuming patterns, governance, energy production and consumption, and commodification and capital amassing processes, but they are deployed differently depending on the geographic context, (Jarosz, 2014).

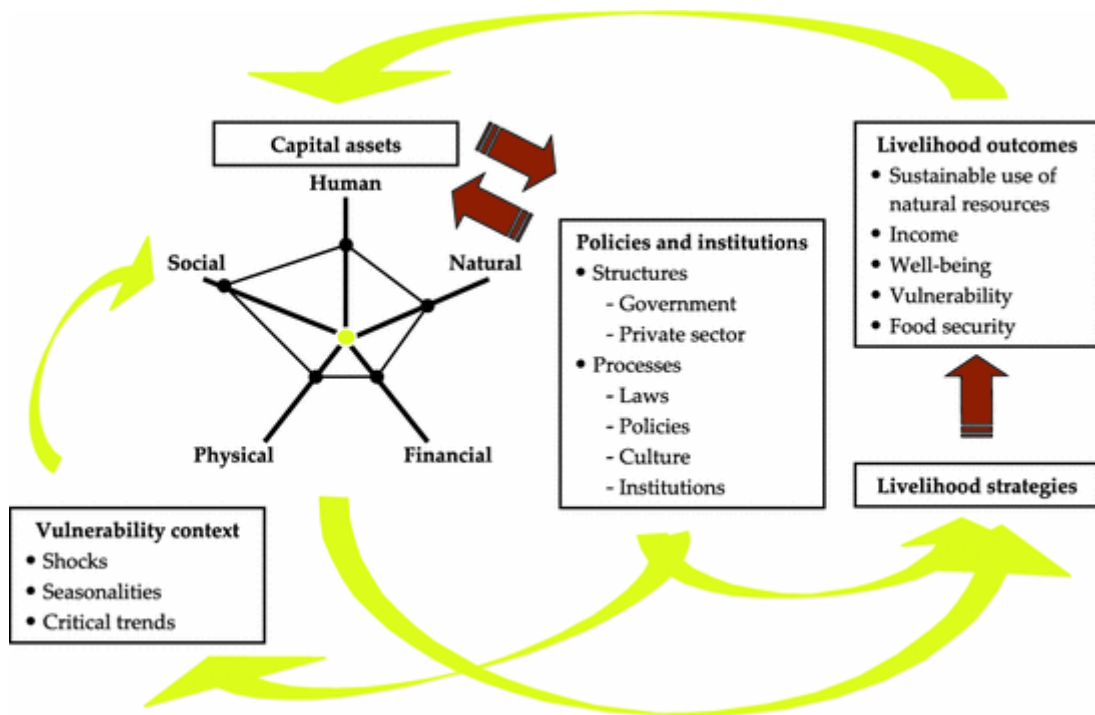
2.2 Theoretical Framework

Despite UPA's worldwide reach, research has shown that it has a stronghold in the global South due to rising food security concerns. Although available data suggests that UPA has been practiced by families for decades, knowledge of the practice is limited. In this research, I have used contemporary agrarian approaches, which were originally structured to fit rural settings to see how best they can be contextualized in to an urban setting in order to understand the structures and dynamics associated with small-scale food producers in urban communities.

2.2.1 The Contextualization of the Sustainable Rural Livelihood Approach in to an Urban Setting

While many social scientists believe the SRLA technique lacks a theoretical basis for the political realm, especially for an approach that improves the quality of policy recommendations in development studies, it is also important to consider this framework. Despite this approach may be discouraging at times, especially when dealing with political problems like land deprivation, in my research, I found it is a very useful framework that emphasizes the significance of actors' agency in any development process and therefore, I used this approach as a framework for understanding individual or household agency.

Figure 3
The sustainable livelihood Framework



Source: Serrat O. (2017) The Sustainable Livelihoods Approach. In: Knowledge Solutions. Springer, Singapore. https://doi.org/10.1007/978-981-10-0983-9_5

Figure 3 above visualizes the framework of the SRLA in its entirety. The sustainable livelihoods approach increases knowledge of impoverished people's lives. It organizes and illustrates the variables that limit or improve living possibilities, (Serrat, 2017). The SRLA places a greater emphasis on what people currently have instead of what people need. In this instance, what do poor urban dwellers have that can be utilized? As much as majority of this population are landless and lacks the financial capital to start something meaning to support themselves and their families, yet they possess other fundamental assets (natural, and human) which when put into meaningfully use will be productive in their survival. The SRLA distinguishes five kinds of capital: natural, physical, human, financial, and social capital. Individual agency exerted by individual members of households is emphasized at the household level, since the unit of analysis employed in this approach focuses mainly on micro processes. Because each household would use different techniques, it is believed that there is no "one livelihood strategy" that fits all. In the households interviewed, it was revealed that different households im-

plement different livelihood and survival strategies based on their unique constructs, availability and access.

2.3 Literature Review

While there is some doubt about the efficacy of urban agricultural operations in producing food for urban settlers, this research has looked into the evidence of its effectiveness in contributing to food security and nutritional balance to urban residents and, as a result, lowering a significant portion of their food expenditures especially for low income households. According to FAO, urban landscapes in Sub-Saharan Africa are among the poorest and most malnourished in the world, (FAO, 2012). Food security research has exploded as a result of the global financial crisis and subsequent rise in fuel and food costs (2007/8). Urbanization has increased the visibility of food insecurity in Sub-Saharan African (SSA) cities, which was formerly considered a rural issue. These advances have piqued the continent's interest in urban food security studies, (Battersby, 2011; Torio, 2009). UPA has been convincingly proven to contribute to food security at various levels, (Chihambakwe et al., 2018). They further emphasized that, the development of urban food production in cities, as well as increasing research on UPA, has occurred in the last decade.

Table 1

Summary of Literature review Table.

<i>Year of Publication</i>	<i>Author (s)</i>	<i>Title</i>	<i>Origin/location</i>	<i>Method of the study</i>	<i>Salient Conclusion</i>	<i>What frame do they use</i>
1994	Axumie G. Egzibher, Diana Lee-Smith, Danien G. Maxwell, Pyar Ali Memon, Luc J.A. Mougeot and Camillus J. Sawio	Cities feeding People: An Examination of urban agriculture in East Africa.	East Africa	Quantitative comparative studies.	Emphasize the importance of vegetable production in urban and peri-urban agriculture as a source of both revenue and food.	None
1994	Luc J.A. Mougeot	African city Farming from a world's Perspective.	Africa	Quantitative comparative Study.	Urban Agriculture is much than just a poor person's livelihood, an informal or illegal enterprise.	None
1999	P. Drechsel, C. Ouasah, and	Urban and Peri-urban Agriculture	West Africa	Comparative case	Because governments have histo-	None

	Devries F. Penning	in West Africa-Contributing to Food Security and urban Sanitation		analysis	ry of failure to promote UPA and rural-urban connections in most West African countries, the economic potential is mostly unrealized.	
2010	Marc J. Cohen and Jane L. Garrett	The food price crisis and urban food (in) security	West Africa	Qualitative	Food insecurity in cities equaled or exceeded rural levels, and policymakers must also consider urban issues.	Impact of food price rises on urban dwellers.
2011	Roy Maconachie, Tony Binns and Paul Tengbe	Urban farming Associations, youth and Food Security in Post-war Freetown, Sierra Leone.	Freetown	Mixed Method.	Gendered partitioning of labour exist in the operation of UPA operations in Freetown. Contrary to the views of others youth and men are also significantly involved in the practice as others.	None
2018	Michelle Chihambakwe, Paramu, Mafongoya and Robert Jiri.	Urban and Peri-urban Agriculture a Pathway to food Security.	Freetown	Qualitative	Availability, Access, Utilisation and Stability are all equally essential aspects as a prerequisite for food Security.	Food Sovereignty within urban spaces.

2.3.1 Urban and Peri-Urban Agriculture a Pathway to Food Security

Egziabher et al., (1994).

Despite this, Egziabher et al. feel it is past time for UA to be acknowledged as a significant component of the urban informal sector that offers income or income-substituting food to a substantial number of city residents (Egziabher, et al., 1994). They also emphasize that there has long been a perception that there is a contradiction between cities and the countryside, between agriculture and urban areas, and as a result, agricultural production has been allocated exclusively to rural regions, despite the fact that both animals and vegetable gardens have long been a part of city life. For families to preserve their nutritional condition, home-grown food is crucial. According to their survey, "25 percent of urban families in the six largest cities in (Tanzania, Uganda, Kenya, Ethiopia, Mali, and other countries) claim they cannot live without self-

produced food." Despite the fact that most food is produced for human use, 23 percent of urban farmers in these regions sell a portion of their harvest, which is typically used to purchase cooking fuel. Approximately 30% of the female food dealers grow their own vegetables. Their studies also show that in Kampala, around 30% of the population farms 50% of the city's land, and 70% of the city's poultry and eggs are produced there. Even the most basic staple crop, tubers, is grown in the city: around 20% of the product is consumed by farmers, with the remaining sold. The cooperative members in Addis Ababa mostly farm vegetables for commercial purposes, but a portion of their output is consumed by families, saving more than 20% of Mali's earnings and generating enough veggies to make Bamako self-sufficient in vegetables. Subsistence farming is also common during the wet season. Gardens are regarded less leniently in Zimbabwe, particularly in Harare, than in the other African cities mentioned; nonetheless, crops planted along riverbeds, as well as hens and pigs maintained at home, are commonly permitted in Bulawayo. In Bolivia, however, the government promotes community gardening in schoolyards and at home, (Egiabher, et al., 1994).

According to research undertaken by Save the Children in Kampala, the protracted effect on the nutritional welfare of adolescents from low-income households who cultivate a portion of their own food is expected to be significant, (Egiabher, et al., 1994).

Michelle Chihambakwe et al., (2018)

The simultaneous achievement of four essential aspects (availability, access, utilisation, and stability) contained in this concept, as highlighted in literature, is a prerequisite for food security, and as such opined that most UPA studies, on the other hand, fail to completely recognize the significance of all components, referring to definitional ambiguities. Food insecurity, on the other hand, happens when the availability of nutritionally adequate and safe meals, as well as the capacity to access appropriate foods in socially acceptable ways, is restricted or uncertain., (Hwalla et al., (2016); Jones et al., (2013); Upton et al., (2016); Cabannes, (2012); in Chihambakwe, et al., 2018). This however is dependent on the national, household and individual preference.

2.3.2 Urban and Peri-urban Agriculture in West Africa

Drechsel et al., (1999).

Urban farming is not a new concept; in fact, it appears to be as old as cities themselves. At the beginning of the twenty-first century, Asia is foremost in the sector with

exceptionally complex and efficient methods for the production and sale of urban agriculture. For example, in Asia, high-value perishable commodities such as vegetables, whereas staple food production will be centred in greater rural locations, (Drechsel et al., 1999). The literature, on the other hand, has been revealing the sector's development in many other emerging areas since the late 1970s. In developing nations, urban food supply can no longer be taken for granted. Urban food production has grown into a sophisticated and successful enterprise in terms of practicing households and the provision of diverse nutritious food items to urban markets. Furthermore, research on the benefits of practicing families in terms of self-grown food consumption, child nutritional status and general health, monetary savings, and income production is growing. The expanding collection of evidence should prompt humanitarian organizations and others to reconsider traditional food aid strategies and incorporate UA into more long-term and cost-effective food security programs. In terms of urban planning, research reveal that the area or space successfully used by UA activities is far broader than standard categories and land-use maps can capture. Urban planners must also consider the fact that UA is almost ubiquitous because to its incredible flexibility and mobility. There is evidence of rural-urban links in terms of food production at the national level in this book, in the sense that both the rural and urban sectors of food production have been given equal focus, implying that no one sector operates in isolation, as in Asia. With such approach and attitude, the tendency and possibility for a nation to be food sufficient is high, given that the right structures and policies are put in place to support its growth.

Peri-urban and urban vegetable production will be critical to accomplishing development policy objectives (food security and malnutrition, employment creation and poverty reduction, and women's empowerment). It is critical to properly grasp urban-rural linkages when creating future development plans; neither urban nor rural development should be considered in isolation, (Drechsel et al., 1999). Drechsel et al., in their opinion of the term 'urban' and 'peri-urban' opined that, when cities flourish, urban and peri-urban agriculture can become a spatial and temporal continuum. In reality, when discussing agricultural output for urban food consumption, both phrases are frequently used interchangeably. The idea of a peri-urban zone, on the other hand, is difficult since it does not simply refer to one sort of industrial system or a set geographical area around a city. It combines rural and urban aspects, although the resulting peri-urban systems may have specific characteristics of their own, rather than just a blend of

urban and rural traits, (Drechsel et al., 1999: p24). They further states that, too often in the past, rural and urban regions were considered as distinct, which is the polar opposite of how food production structures are perceived in Asia. However, there are several intricate interrelationships between them, including their "hot point" in the peri-urban crossing point, (Drechsel et al., 1999: p24). According to them, the favored/preferred crops produced in an urban or peri-urban region may vary depending on the population's culture and lifestyle.

Furthermore, they believe that, the peri-urban region is known for its intensive vegetable growing method, but it is not unique to it. According to them, even if it's just look at vegetable growers as a possible peri-urban target population, we'll discover that they're not all the same, even in the same town. It's possible there will be:

- typical small-scale farmers, such as women attempting to keep the household afloat with increasing vegetable growing in the face of dwindling plot sizes and deteriorating soil quality;
- Adult or married families who really can successfully respond to mutable requirements and who can serve as an outstanding target population for ground-breaking, participant observation, impoverished folks with short-term leases who aim to get whatever little out from the land These type of farmers have serious implications for soil extraction.
- small holders with a deep-rooted commercial strategy; or
- Commercial farmers who rely mostly on agricultural laborers acquire property in peri-urban locations, generally beside major roadways, to feed metropolitan food market-places.

Drechsel et al., (1999) believes that because governments have a history of failure to promote urban agriculture and rural-urban connections in most West African countries, the sector's economic potential is mostly unrealized, and there is frequently no authority directly accountable for it. National and local institutions, as well as stakeholders, must work together to streamline their operations in a participative manner in order to address this issue. It is essential for them to coordinate their actions. This necessitates the creation of the required legislative and regulatory framework, as well as the development of the essential urban management capability. The establishment of rural-urban links, so neither urban nor rural growth is handled in exclusion, as well as the assessment and valorisation of peri-urban and urban agriculture, as well as the discovery

of various options for nutritional reutilizing and waste decrease, are two critical issues for the formulation of future development initiatives.

2.3.3 Urban Agriculture, more than just a livelihood strategy. -Luc J.A. Mougeot, (1994)

As strange as the melding of urban and agricultural into a single manifestation may appear, urban agriculture as a core urban activity is nothing new. Urban agriculture is being examined as a result of these features, which are commonly referred to as uncommon or transient, numerous, and repeating. In many areas of the globe, their cumulative consequences are growing so widespread that a return to normalcy is becoming a dubious, if not vanishing, prospect, (Mougeot, 1994). Mougeot argues that much UA flourishes away from the obviously apparent crops on open-land surfaces, behind tree covers, in shelter or on thatched surfaces, on wall shelves and railings, in tunnels, or grazes other undeveloped land areas, (Mougeot, 1994). In the national sphere, he further pointed out in that, even in years of food need, most UA remains generally unacknowledged, unaided, or discriminated against, when not banned or harassed. More countries, on the other hand, are establishing agencies to regulate UA, and many more are actively encouraging it. For instance, Ministries, municipalities, nutrition agencies, organizations and councilors in urban district have lately grown increasingly tolerant, if not helpful, of city farming in several East African nations, (Mougeot, 1994).

According to PCC 1990 in Mougeot 1994, food is becoming a fundamental luxury for the urban poor, a huge and rising proportion of the population. Households in over half of the LDCs' major urban areas spent 50-80 percent of their median budget on food in 1990. (Mougeot, 1994). In African cities, eating just one meal per day is becoming more prevalent, which has a negative impact on people's nutritional health. If you are poor, you will pay a greater price for the food you must purchase than better-income customers, and you will be compelled to engage in wasteful purchasing habits ("smaller, more frequent buys from various and distant sources, more spent on transportation, more losses from bad storage, and so forth"), (Venetier 1988, p. 222 in Mougeot 1994). Mougeot further emphasized that, the proportion of the household budget spent on bought food increases household food insecurity. In terms of food security levels in urban cities, Mougeot believes that, malnourishment is a common in big municipalities

as it is in rural regions in certain nations; malnutrition is frequently greater in urban slums than in a normal rural location.

Another very important point Mougeot made in this publication was the fact that, the intricacy of urban agriculture demonstrates that it is much more than a poor person's livelihood, an informal or illegal enterprise. He further states that, surveys conducted in middle- and upper-class neighbourhoods reveal a completely different picture. The UNDP research identified seven categories of urban farmers, vary from low survival to agribusiness, encompassing middle-income farmers and gardeners, low, middle, and high-income businesses, and farmers' associations and unions. Top executives, for example, benefit from animal breeding. The scope of UA may be very broad. A single big company in Bangkok contracts approximately 10,000 out growers of hens, operates hatcheries and dressing facilities, and controls a significant portion of the national and worldwide markets, (Mougeot, 1994). This simply emphasizes the fact that urban agriculture has the potential to be bigger markets opportunities that can not only provide food and income for improvised population; it can also contribute to countries GDP (Gross Domestic Product) through exports of produce from urban communities.

Furthermore, Mougeot position on UA states that, 'cumulative consequence and the widespread growing of UA will make a return to normalcy for most if not all cities a dubious and vanishing project', vehemently contradicts economic development theorists, Marxists, and modernists who believe that UA is the unsuitable preservation of rural culture in cities and thus firmly anticipate its extinction.

2.3.4 Causes of hunger and Malnutrition among poor urban dwellers in urban communities and Coping Strategies.

-Cohen and Garrett (2010).

Cohen and Garrett in their position argued that "although poverty in low- and middle-income countries is often deeper and more widespread in rural than in urban areas, disproportionate attention to rural dwellers is probably misplaced. Many rural dwellers are food producers, and so may have their own crops or livestock to buffer shocks and may even benefit from higher prices. Few urban dwellers have these options", (Cohen and Garrett, 2010: p467-468). It is safe to say that the majority of poor people live in rural regions, although there are significant numbers of impoverished urban inhabitants in market towns and megacities. One of the findings included in their research reveals that,

urban food insecurity equalled or surpassed rural levels in 12 of 18 low- and middle-income nations conducted between 1996 and 2003. Food security is dependent on food availability, regardless of location, and families' capacity to obtain food is dependent on both income and food costs.

As opposed to many other article or publications on urban food security and its impact on poor urban dwellers, this article did very well to trace the causes of hunger and malnutrition in urban communities. They pointed out that, food is likely to be accessible at marketplaces in towns and cities, even if it is out of reach. Almost all of their food, as well as housing, transportation, health care, and education, must be purchased by city residents. Individual family conditions are reflected in urban food security. Increased urban earnings may not be enough to compensate for higher food costs and financial needs. Urban dwellers often lack land and other resources necessary to grow their own food and therefore buffer shocks (urban agriculture is banned in many cities). Nutritional status is influenced by a combination of factors including diet, health and cleanliness, and care. Low-income areas are often congested, and the housing is of low quality. In low- and middle-income nations' metropolitan areas, 25–50% of the population lacks access to safe drinking water and sanitation. Many urban poor individuals lack physical and financial access to health care.

Furthermore, when food prices skyrocket and became unaffordable for urban poor people, households will result to cushion food prices by reducing expenditure on other items, they may also reduce their food intake by eating less or switching to less nutritious items that are less expensive. They will purchase on credit, borrow food from neighbours, depend on food assistance programs, and alter intra-household distribution. When food is limited, mothers often forego it, and boys typically get bigger portions than girls. Poor families are more vulnerable to price rises than others because they spend a larger portion of their income on food. Female-headed families are more vulnerable to poverty since they spend a higher proportion of their income on food. Poor families have decreased their intake of comparatively more cost animal source foods, fruits, vegetables, and pulses in favor of cheaper, non-processed staples in the past when food prices spiked, (Cohen and Garrett, 2010). In this regard, because many urban poor individuals have limited options, their coping strategies may jeopardize their food security. Households in smaller cities and market towns, on the other hand, may have a

greater connections to agriculture. These families may be able to produce their own food, reducing the impact of price increases over time.

2.3.5 Urban food production and Gender Partitioning – Maconachie et al., (2011).

This study examines the spread of UPA as a reaction to increasing claim for food and jobs in and around Sierra Leone's capital city, Freetown. In this context, the study investigates a recent uptick in UPA-related cooperative activity in Freetown, based on the knowledge and views of individuals engaged in urban farming organizations. They place of interest on how UPA activities are now driving a renaissance in community-based organization, as a development that will play an essential role in securing source of revenue and urban food security at a particular critical point in the country's post-conflict recovery. Who are involved and how? Several additional studies in West Africa have shown that males are just as likely as women to engage in UPA under certain circumstances, especially when they have greater access to land and resources or may profit monetarily, (Maconachie et al., 2011). They further stated that, although there was approximately equal number of male and female farmers in our research, there seemed to be a gendered partition of labour in UPA operations. Majority of the urban farmers that were interviewed had moved to the city from the countryside, taking along their agricultural expertise, methods, and 'orthodox' labour divides with them. In Addition, their findings indicate that, contrary to popular perception, today's youth are uninterested in agriculture, young people do participate in UPA activities in large numbers. Their study shows that 62% of UPA farmers questioned are under the age of 35, and 27% are under the age of 15.

2.3.6 Summary of Literatures

Chihambakwe et al., (2018), believes all four component (availability, access utilization and stability) carries equal prerequisites for food security, while Cohan and Garrett 2010 emphasized that food security is dependent on availability regardless of location and families capacity to obtain food is dependent on both income and food cost. For this reason Cohan and Garrett believed that the cause of hunger and malnutrition of in urban and peri-urban communities can be traced back to the rise in food prices and low income of families to afford them. While Egziabher et al, (1994), and other articles

above in their article provides instances to prove that UPA is an informal sector that provides income, or income substituting food to a large number of city people, Mougeot, (1994), argues that the intricacy of UPA demonstrates that it is much more than a poor person's livelihood, an informal or illegal enterprise. In agreement to this, Drechsel (1999) emphasized that urban food supply can no longer be taken for granted, as UPA can be evolved into sophisticated and flourishing businesses.

Inadequacies of International and national inclusion policy prescriptions has been a very common concern in almost all the articles/ publications featured above. For this reason, Drechsel, (1999), believes that as a result of the growing body of data should encourage humanitarians groups, and others to rethink traditional food assistance method and integration. Yet if this is to happen, there should be recent data resources that will provide adequate information for proper policy formulation and assistance. Despite the fact that there has been many publications on Urban Agriculture/food production from various research angles, more need to be done locally in providing recent data in understanding the dynamics and role of poor urban dwellers and their involvement in the sector especially in Sierra Leone, thereby observing both the presence of internal and external factors/agents that influences production and its outcome. This however in my opinion will provide the prerequisites for the development of future policies that will enhance growth in the sector, and its sustainability.

Chapter 3

3.0 Vegetable Production in Gloucester Freetown – History, and Pattern of production.

3.1 History of vegetable production in the Gloucester Community

Evidence indicates that Mandingo migrants from Guinea were the first to bring garden cultivation techniques to the area, with many indigenous farmers adopting their ways throughout time (Binns 1982). During colonial control (1809-1961), the Creoles, who descended from freed slaves from America and Europe, dominated cultivation in the Western area, but they were soon accompanied by other migratory groups from the rural areas, such as the Limba, Loko, and Mende (Koroma and Rhodes, 2006). Farmers who actively cultivate the hillsides with vegetables, taking benefit of the near proximity to Freetown markets, have long occupied the peri-urban settlements along the Freetown peninsular. As the creoles became wealthier as a result of their engagement in the colonial administration and other commercial endeavours with Europeans, their membership in the UPA started to dwindle as they chose to employ province-based migrants (Davies, 2004). By the time of liberation from Colonial rule in 1961, the bulk of Freetown's farmers were made up of immigrants from the provinces (Koroma and Rhodes, 2006). Even as UPA remained an essential practice in Freetown during the post-colonial era, especially during the period of the one-party state (1971-1985), it later became a crucial factor in food and livelihood security for both rural refugees and city dwellers during the war (Maconachie et al., 2011).

Gloucester community, like the rest of Freetown and Sierra Leone, experiences typical tropical climatic conditions mainly influenced by the movement of the Inter-Tropical Discontinuity (ITD). Its movement results in two distinct seasons: rainy and dry. The rainy season spans from May through November, while the rest of the year is dry. With an annual rainfall of over 3500 mm, Freetown receives higher rainfall than other parts of the country because of the proximity of the Peninsula Mountains. Temperature varies from 22°C to 27°C almost throughout the year, with the exception of occasional extreme lows at night and highs during the day in the middle of rainy and dry seasons, respectively. The relative humidity is high, reaching 100% in the rainy season, (Forkuor and Cofie, 2011). The primary kinds of farming in this community are leafy conventional vegetable production. Lettuce, cabbage, carrots, runner beans, krain-

krain, okra, potato leaves, etc., are among the most common crops produced in this community. Pre and colonial tree crop plantations have either been reduced to backyard operations (e.g. mangoes, citrus, coconut, etc.) or have been abandoned entirely (e.g. Cocoa and coffee), (Wennibah et al., 2004).

Figure 4
A Typical Garden Site in Gloucester.



Source: Photo from research assistant's site visit, 3rd August 2021.

For many years, urban and peri-urban agriculture has served as a major source of family nourishment, income, and employment in and around Freetown, (Kanu et al., 2009). Yet, policymakers and funders would not officially acknowledge UPA as a significant contributor to Freetown's urban food chain until after the war ended. Most significantly, Sierra Leone's World Bank/FAO-sponsored Agriculture sector review (MAFFS, 2004) recognized UPA as an important livelihood activity for relieving poverty and increasing urban food supply, while also emphasizing the need to promote urban agriculture. Ever since, a host of UPA programs have been launched in Freetown by local and foreign NGOs such as the International Water Management Institute (IMWI), the Dutch Resource Centre on Urban Agriculture and Food Security' (RAUF), and the Italian NGO COOPI (Maconachie et al., 2011).

3.2 Practices and Motives

Before and after independence, urban and peri-urban agriculture was a prevalent activity that benefits people living in Sierra Leone's cities. Intense farming arose as a result of enormous rural urban migration that occurred between 1991 and 2002 as a result of the civil unrest, (Kanu et al., 2009). In the absence of conventional employment, many of these migrants with agricultural backgrounds that arrived in the western area turned to urban and peri-urban agriculture growing green vegetables and fruits within and near Freetown, (Nabay et al., 2017). A combination of an economic blockade on the junta regime in 1997 and the "cut-off" of Freetown from its food supply catchment during the war fuelled its practice, (Gbanie et al., 2018). Many diverse plant crops (vegetables, cereals, tree fruits, ornamentals, spices, seedlings and plants, and flowers) and animal products (dairy, pigs, poultry, cattle, and aquacultural products) are produced by urban agriculture. As previously stated, this review focused on vegetables, which are typical urban crops due to their short cycles, such as 30 days for choysum in Hanoi, short shelf life, high manpower requirements, and high value, (Bon et al., 2002 in De Bon et al., 2008).

Furthermore, some of the farmers were members of community organizations, since many of them feel that organizations are essential to address the many limitations that come with urban food production. How certain is this assumption is another interesting notion I would love to explore in the future. It is clear that urban farmers are motivated to engage in associational life by a variety of reasons. Typically, three types of production constraints were identified during this study: (i) difficulty obtaining access to land for cultivation, (ii) obstacles organizing farm workers, and (iii) difficulties transporting food to market to sell. Many of them thought that by banding together as an organization, they would be able to assist one another and solve these issues together.

Chapter 4

4.0 Findings and Analysis

This chapter analyse and interpret primary and secondary findings and data collected, in order to figure out how urban food production has contributed to food security and the socio economic wellbeing of the targeted population, and the contribution made by stakeholders in addressing some of the challenges. This findings and analysis seeks to answer the Research Question.

Research Question - How does the current food production system in peri-urban communities in Sierra Leone supplement food security and income for poor urban dwellers?

This study was conducted to look at all elements of vegetable production in the Gloucester village, including what is being produced, how, for whom, for what purpose and under which circumstance. In other to attain this, a Qualitative Research Method was used. This includes a mapping research technique which was used to identify and plot spots in the given study area where vegetable production is visible, and the collection of Primary and Secondary Data.

4.1 Mapping Survey

The study set out to map the numerous vegetable locations that might be found in the neighbourhood in the absence of any current baseline data. This was deemed necessary in order to comprehend the spatial scope of the operations and to supply the project with fundamental geographic data for future stages. During on-site visits to locations and marketplaces, this was utilized to locate and identify garden sites or production activity within the study area. Additional data on crop kinds, altitude, and physical and land ownership information, if available, were collected during site visits. Presented below in figure 6 is a graphic representation of the mapping survey that was carried out feature the areas covered by the research assistant during the site visitation in the community where cultivation is visible. This mapping survey shows the areas of cultivation in the research site that was covered by the research assistant, identifying the type of cultivation that is being done where, .i.e. areas where cultivation is being done on water actual garden plots, road side gardening, back yard garden, and on open spaces. This gives an impression of the extent to which these types of cultivations are done. Form the map it is evident that cultivation on actual garden plots are in the majority,

compared to road side cultivation, backyard gardening and cultivation on open spaces. This map also shows important landmarks in the research site that gives a picture of how this area is structured.

Figure 5
Mapping Survey of the research site visited



Source: Authors creation.

4.2. Structure and pattern of production

What is being produced and for which purpose?

Based on data collected from the respondents and the site observation from the mapping survey, the following vegetables are the main type of crop being produced by the farmers: (i) Lettuces (ii) Carrot (iii) Cabbage (iv) Thyme (v) Cucumber (vi) sweet potato green leaves (vii) cassava leaves (viii) okra (ix) peanuts (x) Krainkrain. In addition to this, they further highlight that other crops such as: (i) Tea bush (ii) Lemon Grass, (that mostly grow as wild plants in backyards or on roadsides) etc. are being used for medicinal purposes, especially as a local remedy to cure common cold in children and adults.

When asked about what is being cultivated when and for which purpose, one of the respondents replied saying,

As you can see on my plots I grow mainly lettuce, cabbage, leaf onion and carrot on my plots throughout the year, and upon harvesting, majority of my produced are being sold while I keep some portion at home for me and my family to add to our daily meal. I also nurture tea bush and lemon grass, in my back yard which I used mainly for medicinal purposes for myself, my family and share with others in my neighbourhood. (Respondent number five, women, age.....)

Another respondent answered saying that,

I cultivate mainly cassava leaves, sweet potato leaves and krain krain leaves on my plot. After my harvest, majority of my produce I will take to the market to sell, a reasonable portion of it will be kept home for our everyday cooking. (Respondent number 3, woman, age...)

Who does what?

Division of Labour and Responsibilities

In all of the households questioned for this research, both sexes engage in agricultural production. The males are mostly involved in the cultivation of the crops, while the women are primarily involved in the transportation and selling of the harvest. Although in certain cases, women do all three tasks, namely, growing/cultivating, transporting, and selling the product. It is worth noting that both male and female farmers have access

and control over family labour in this community, yet female farmers are sometimes disadvantaged when they must outsource labour (mostly male) for harder tasks such as brushing, clearing, ploughing, seedbed preparation, stone bonding, terracing, and its repair if male labour is not available in the family.

The male household members are mostly physically involved in physical aspect of cultivation, while the female members are mostly involved in the nurturing, harvesting, transporting and selling of produce to nearby markets and communities. When asked about the pattern of labour division in his household with regard to the production of vegetables, the second respondent responded saying,

Because of the energy requirements and labour needed for preparing the plot for the planting season, me and my sons mostly do the digging, seed bedding and planting, while my wife and daughter are involved in the, watering, weeding, harvesting, transporting and selling of the produce, so one way or the other we are all involved. – (Respondent number 2, male, age 62)

In another scenario, respondent 4 who is a single mother responded to this same question with a completely different answer stating that,

I do all the work myself hard or soft. From digging, seed bedding, planting, harvesting down to selling my produce. Although most of the times I had my daughter assisting in the activities but my son is still an infant and I can't afford pay for extra labour, my plot is small and my harvest is also small, what I make out of it can only be enough to feed me and my kids. (Respondent number 4, female, age 4).

Furthermore, this study polled different parts of the neighbourhood to find out where the cultivation sites were visible. All six (6) of these respondents who were interviewed in this research are residents in this community some of whom have lived in their present home for somewhat more than half a generation (on average 15 years), with others having lived there for just a few years. Some also say they've been cultivating at their present locations for a longer time (on average 15 years) than those who rent plots for cultivation or operate on government-owned property. However, four (4) out of the six (6) respondents interviewed of the city farmers also claim to be migrants from the prov-

inces, the majority of whom arrived in Freetown during the war. The first respondent revealed in his interview that he moved to the Gloucester village with his family over 15 years ago when they first came to Freetown after the war.

After the war ended, and our village burnt down during the war, life for me and my family was extremely difficult, we were left with nothing and had nothing. The only option we had was to move to Freetown in search of green a pasture - (Respondent number 1, male, age 57.).

This situation is not only peculiar to only Respondent 1; there were other respondents who also have shared similar experience. Respondent 3 during her interview said that,

I moved to Freetown shortly after I lost my Husband, when my husband's family took everything we had. I was left with nothing to take care of myself and my child, so I moved to the city in search of green pasture has I had no one to help me and no money to start up a business. – (Respondent number 4, female, age 43).

They also confirm that bulk of their produce is mostly sold in Freetown's central and western wards (in markets and in front of supermarkets or big stores). Figure 6 below is a photo representation on one of the participants selling her produce in the market.

Figure 6

Photo representation of how vegetable is being sold in the market



Source: Photo by research assistant on site visitation.

4.2.1 Stakeholder's perception and contribution.

When asked about the contribution of the village heads on the activity of vegetable production in Gloucester, the Head man (an elected tribal head who advises on problems pertaining to their village, as prescribe by the Local Government Act of 2004), who carries the symbol of authority in the community emphasized in his responds that,

As the Headman, I am only supervising the affairs of the community thereby ensuring that law and order generally among community people is maintained at all times. Deciding on who cultivate on what land and what is being produced, has never been the position of the headman to dictate, rather; I am here to also preserve the legacy of this community by doing my best to ensure that the production of vegetable crops in the community is continue to thrive as majority of it community members rely on it for their survival.–community head man

He further stated during his interview that,

Community own lands are however in full custody of the government, through the Ministry of Lands, housing and Country planning, hence; given out lands or selling out community lands is the responsibility of Ministry and therefore, one can only own community land when all the right legitimate procedures have been completed and approved by the ministry, however, as a form of support for those who can't afford to rent, lease or buy land, people are allowed to cultivate on empty lands in the community temporarily. –Fred Hanciles

When asked about external support for vegetable production in the community the Headman also revealed that financial support has been one of the most important challenge for vegetable producers in his community, this is due to the fact that, micro credit and loan facilities are very limited for this type of crops in UPA. Most credit institutes are reluctant in giving out loans to community people, due to several factors. Most prominent among these factors he mentioned are: (i) lack of awareness by the farmers, (ii) inability to fulfill borrowing criteria, (iii) insufficient financial understanding and discipline, (iv) high default rate. On the side of the institution, the following were stated: (i) misappropriation of money by the producers, and so on. (i) a perception of risk, (ii) a propensity to target mainly large-scale community businesses, (iii) a lack of

worthwhile projects to qualify for a loan, (iv) the inherent risk in agricultural activity, and (v) the absence of a clear government policy on financing to farmers.

On the side of the municipality, when asked about their position on urban and peri-urban food production activity, one of the respondents, a senior staff of the Freetown city council, in his response to the contribution made by the council to promote UPA stated that,

To date there is no specific policy on Urban Agriculture existing in Freetown and its environs; however, the council has made several strides in this direction. Nevertheless, stakeholder administration processes seemed to be more rigid and mandated, and any new method required extremely high levels of approval. As a result, the institutionalization process is sluggish even at the initial stages. – Representative from the council.

Speaking on behalf of the Ministry of Agriculture, Forestry and Food Security, an official from the Ministry stated that,

The ministry is being promoting urban farming in most urban settlements in the country. He further referenced that in 2005, the ministry under the UNFAO's special project for food security have been promoting and supporting urban and peri-urban agriculture, this was geared towards help local councils recognize the benefits of urban agriculture while also tackling urban poverty, food security, and bettering urban environmental protection. – Representative from MAFFS.

Ministry of Lands, Housing and Country Planning – In his response, an official from the Ministry of lands in Sierra Leone stated that,

Land tenure in Sierra Leone is complicated due to governmental ownership, private ownership, commercial ownership, and familial ownership. In the western regions and the capital, statutory rules recognize private freehold property, but customary laws regulate land tenure in the remainder of the nation. – Representative from the MLHCP.

Furthermore, when asked about the gender sensitive issues related to land acquisition and administration he clarifies by stating that,

Women are not prohibited from property ownership in Sierra Leone, the land tenure policy of the country asserted that both men and women can administer land, and it aims to promote equal access to land through improving land tenure security, as well as effective and creative land management delivery methods. – Representative from the MLHCP.

Nevertheless, he also emphasized that the government is working on a National Urban Policy, as described in the UN's new urban agenda that will serve as a blueprint for sustainable urban development, urban economic growth, and spatial planning, including urban agriculture as a major component. This, on the other hand, will encourage equitable urban development, guarantee income equality, and offer job possibilities, among other things.

A host of UPA programs have been launched in Freetown by local and foreign NGOs such as the International Water Management Institute (IMWI), the Dutch 'Resource Centre on Urban Agriculture and Food Security' (RAUF), and the Italian NGO COOPI (Maconachie et al., 2011).

4.2.2. Impact of the Covid-19 Pandemic on vegetable production in the Gloucester community.

The impact of the Covid-19 pandemic was also examined in this study. When asked about the impact of the Covid-19 pandemic on vegetable production and its activities, all of the six (6) respondents indicated that the pandemic has an adverse negative impact on their production. The social distancing restrictions, lockdowns, and sickness during the pandemic affected the marketing of these products and cultivation especially during the planting season when more labour is needed to prepare the seed beds, as it was difficult employing labour as people were social distancing themselves from others because of the fear of contacting or spreading the virus. Also due to the many lockdowns most people stayed at home for days as it was prohibited to go outside your homes during lockdown period. This reduces production quantity and sale of produce. Sharing her experience respondent six (6) who is a 32 year old widow stated in her interview that,

when the first lockdown was announced, a lot of people rushed in to the market to secure food stuff and hence all the stock I had harvested then was sold out, but as the cases began to increase and more and more lockdown measures were instituted there was a drastic drop in our sales, produce we harvested were perishing at home, I barely managed to survive with the little I had. – (Respondent number six, female, age 32).

Similarly to her experience, other respondents share almost if not the same experience during the pandemic. The data indicate that there were some who felt that the impact of the Covid-19 pandemic positive and some who felt that it was negative. However, most respondents, not surprisingly perhaps, suggest that the impact was negative. Similarly, there was a decrease in sales for most, but for some an increase. This may be a result of the city being cut off from the interior of the country for long periods during the during lock downs, resulting in a high demand for locally produced vegetables.

4.3. Livelihood Strategy

The accounts given by all six (6) respondents have very similar production pattern except that crop produce differ by respondents. Nevertheless, evidences and testimonies from this research reveals that some portion of the produce are being used as food supplement by all of the respondent while at the same time they are income generating produce that are being sold as a main or supplement income strategy. These incidents according to the Sustainable Rural livelihood approach is one wherein the people utilizes and transforms their available assets (human, natural, physical, social and financial) into a livelihood strategy.

4.3.1 Case Experiences of individual producers (Source: Authors' survey).

Respondent 01

“I moved to this community two years after I came to Freetown with my family after the war. I first settled here working as caretaker for a friend. We stayed in a makeshift zinc apartment in the compound of my friends building site. I was paid at the time Le. 500,000 as a monthly wage. This amount wasn't even enough to provide food for my family for even two weeks, so I had to consider utilizing my agricultural skills by planting small vegetable crops in my backyard, as this was very common in Gloucester at the time. My first seeds were given to me by a friend on credit as I had no money to buy. Initially I only planted with the intention of having some produce to eat at home and reduce spending on food stuffs, but little by little it transforms into a business strategy for my family. Now I have managed to acquire a small piece of land in the community which was finance from a loan, to grow my crops. This cultivation has little by little grown from just a food supplement to my main source of income”.

Respondent 02

“I was displaced by the war; I used to live in a displaced camp in Freetown with my wife and two children. I moved to this Community when our camp was folding up and repatriating people to the provinces. By the time I didn’t want to go back because my children were schooling here and they prefer it here, so I was able to get a bedroom apartment in Gloucester from the little money I was getting from my Carpentry. I started cultivating vegetable because I saw how productive it was here and how it has been sustaining other families here. I had no agricultural Background as I have always been a carpenter, but I didn’t let that stop me because my family cannot surviving only on what I make from Carpentry as the jobs are not coming every day. Majority of the cultivation is being done by my wife and children who had to learn from others in the community. The little crop we are able to harvest is being sold by my wife and children who are also actively involve in the marketing of the produce. This has however, provided extra income for us to survive and business opportunity for my wife and children and prevents too much spending on food”.

Respondent 03

“I have been selling vegetable crops since I stopped going to school in 2008. I had no money and no one to take care of me as I lost both parent at a very early age and been moving from one family member to the other. I came to this community when I was pregnant with my first child to live with my boyfriend, when the things became had and the relationship ended, I moved out and to live with a friend of mine. After given birth, I needed money to take care of my child, this was when my friend advice me to try selling vegetable produce for people in the community who have harvested their crops and needed someone to market it for them. Since I have no land and no agricultural experience I embraced the idea and started marketing this produce on a daily bases on percentage, till I was able to raise some money to buy the produce from them at whole sale and then sell in the market at retail. This since then has been my main source of income and survival”.

Respondent 04

“I’ve been farming this land for almost 15 years, since I moved here from Lunsar, says the farmer. Farming has been a source of income for both my family and me since after I lost my job as a security guard. I needed this income to fulfil my family's requirements, such as education, feeding, and medical costs. My agricultural job, which I perform with the assistance of my family, provides me with money, to at sustain myself and my family. I grow

my crops on property that I inherited from my late husband, who bought it from the owner a few years after the war, with whom he had a close connection. In reality, this property was purchased at a cheap cost as a reward for his devotion to them”.

Respondent 05

“when we first moved to Gloucester, my husband as an ordinary security officer, his salary was barely around Le. 300,000 per month. That could only afford for a bag of rice and kerosene for our lamp. We had to pay for rent, school fees for our children and medical bills there was no other source of income. When we first arrived its felt like nature had smiled on us, there was vegetable cultivation everywhere, and with my agricultural background immediately I felt the urge to try it out. Unfortunately we had no space for cultivation the apartment we rented, but along the road that leads to our house was water that runs from the stream. So I decided to plant few local leafy crops for a start. Fortunately the plants were growing nicely, little by little it expended to other vegetable crops. Ever since I have managed to grow my crops here. I didn’t regret this venture as now I can make some money from the sale of my produce, and this has sustained my family”.

Respondent 06

“ I became fully involved in vegetable production shortly after I lost my husband to Ebola. He was actively involved in the cultivation of the produce while I and the children were engaged in the marketing of the produce. This was something my husband has been doing since I met him; it is all that my family know and have. I am uneducated and widow I can only rely on the production of vegetable to survive and cater for the family”.

Commonalities and differences between respondents.

The case studies above provide an illustrative case by case experience of an individual farmer. These have been extracted from the data received during the in-depth interviews. These were included because they illustrates a wide range of producers’ experiences, and demonstrate the sorts of cultivation businesses in which these respondent are engaged, the links with other livelihood sources and the impact of other social agents in their activity and its motivation. According to the SRLA approach, there is no one livelihood approach, some household depending on their human, physical, and social capital may employ one livelihood strategy, while other may employ more than one

livelihood strategy in other to meet the current livelihood demand of the household. These evidences are pre-requisites to understanding how vegetable production can be both a main source of income or a supplementary food and income strategy.

Vegetable production was taken up by all six respondents as a food supplement, while at the same time it was a main source of income for three (3) out of six (6) respondents. All the respondents confirmed in their interviews that the produce from their harvest have for a very long time provided food supplements for themselves and their families. Even for those who do not have the means/resources to cultivate or own lands, it's presented other opportunities through which they could survive and earn income even by just marketing the produce. It is also important to note that two (2) out of (6) respondents were rural-urban migrants who were displaced by the war while others came in search of better opportunities in the city, although this is not a justification that vegetable production in the Gloucester village is only done by rural-urban migrants. Few of the respondents were low-wage workers, some of who are formerly unemployed and uneducated, these however, are mediating process that influence certain change in the livelihood strategy of an individual or household.

4.3.2 Socioeconomic characteristics of respondents

During the interviews, it was revealed that none of the participants had ever earned more than Le 10 million per year, indicating the extent of poverty among such. (The currency rates were as follows at the time of the study (2021): Leones 14.444 14 £1.00, Leones 10.4450 14 US\$ 1.00, Leones 1412.353. Only rare instances earned a medium income; none got a high income, and the bulk earned a poor income.

Before taking after my mum and engaging full time in the production of vegetables, I was employed as a Maid when we first arrived in Freetown where I worked for over 2 years, and I was being paid Le 250,000 per month as a monthly wage. The income from that job couldn't even feed us and take care of our expenses for a week, we were managing with very little to survive. – (Respondent number four)

The average size per household in this research is about 5 persons on the average. All six respondents (heads of households) in this research have no formal education. According to the findings of this study, vegetable cultivation is the primary employment and main source of income for three (3) of the respondents, while for the other three (3)

is generates extra income. According to the study, five (5) out of (6) respondents had access to tiny parcels of land. These findings suggest that for the poorest members of this community, cultivation and vegetable production is a significant source of revenue.

4.3.3. Access to and control over production Resources

This research found out that, access to production resources is usually more challenging for women farmers than it is for men. The following indicators summarizes the degree of gardening differences in access to and control over production resources in the Gloucester community as revealed by the respondents: **Land-** Land is a significant constraint for both male and female producers in all areas of the community if space is available and the appropriate kind of social connection exists (e.g. long-standing friendship and good will based on agricultural product), only a tiny proportion of the respondents (both male and female) cultivate privately held property on a leased basis, and only a small percentage possess land due to family inheritance. **Labour-** Males and females have equal access to and control over household work. Most farmers depend on personal and learned knowledge to raise their crop, thus technical competence is limited. **Credit and loans-** Lack of access to credit is a significant constraint for most Sierra Leoneans, but women have a harder time getting credit than males. Micro loan programs for women have been offered by the government on occasion as a poverty reduction approach, but only a tiny fraction has benefitted thus far. Women, on the other hand, establish "osusu" groups as a solution to their financial difficulties. Benefits from production -In general, husbands have greater influence over the advantages from production for married women, while widows and single women have more power over the profits from their crops.

Production constraints - Funding- Several obstacles hampered vegetable production, but a lack of funds to employ labour for land preparation was particularly acute among women. Other issues include pest damage (including theft), equipment purchases, sickness, and accidents. Despite the fact that both men and women are impacted by the agricultural restriction, women are disproportionately afflicted. **Land Tenure -** Farmers' lack of knowledge of the wetland tenure regulation. Some farmers are being charged rent for wet areas that should be state holdings, while others are facing evictions from landowners claiming ownership of wet fields. **Lack of proper storage facility-** there is relative no modern preservation facility in this community for them to store

and preserve their produce. They further stated that, in most cases, if these produced are not sold in time, producers have to incur losses as their produce will perish. **Transportation-** transporting goods to the centre of town where bulk of the produced are being sold is very difficult. There are very limited transport systems running to and fro this community. Lack of seedlings, fertilizer and adequate extension services, are among these constraint that poor vegetable producers in the Gloucester community faces every day.

4.3.4 Stakeholder Analysis

Stakeholders are an important part of any development agenda. Stakeholders are people or organizations that are anxious about/interested in the subject at hand. They include everyone who influences and/or is influenced by a system's policies, choices, and actions, (Warner, 2005 in Amerasinghe et al., 2013). In other to explore certain sensitive political issues especially in understanding current state of peri-urban Agriculture in Sierra Leone and Vegetable production particularly in the Gloucester community, key questions were channelled to different stakeholders identify for this research.

The Freetown City Council participated in the 'Multi-stakeholder Policy Formulation and Action Planning' program which was geared towards the development of a Short and long term "City Strategic Agenda" that will devise a strategy for urban and peri-urban agricultural operations in Freetown. Some of the successes they have achieved so far was the acknowledgement of Urban Agriculture into the 'Draft Agricultural Sector Policy', the Urban Development Plan of the FCC and even the inclusion of UA in University Curriculum for Njala University.

Chapter 5

5.0 Recommendations and Conclusion

5.1 Recommendations

- Municipal councils together with government should work together in the development and full implementation of 'City Strategic Agenda' that will plan and devise strategies to support urban agriculture operations in the western area.
- Government through the Ministry of Agriculture Forestry and Food Security should intensify lobbying and collaborating with NGOs, INGOs, and financial institutions in the country to increase support for urban farmers, through capacity building programs and financial assistant programs, in order for them to have the prerequisites that will aid production activities and increasing their harvest.
- Land Tenure- special attention should be given to female farmers for not only accessing land but also owning lands for farming.
- Credit and loan programs should be established in abundance to offer financial assistance to prospective farmers without sufficient capital so that they may be able to acquire farm lands, purchase seeds and production equipment's, which will in turn, increase production outcome.
- More Capacity building and training programs should be conducted in these communities to educate producers on the skills and technique required in improving production and coping with shocks. Financial awareness programs must be introduced in order to help these producers manage their proceeds and loans.
- Local governments has an essential role in addressing local needs and goals, hence, local action must be backed up by regional and national initiatives. This assistance must include managing natural resources while meeting urban and rural demands, assisting local economies by providing physical and social (health and education) infrastructure, and facilitating low-income households' efforts to make a living.

5.2 Concluding Remarks

Urban and peri-urban Agriculture's worth in terms of food security, income generation, nutritional intake, and economic possibilities is context dependent. Nutritional stability, food accessibility and availability, cost-effective food supply, and revenue creation via sales are all variables that UPA has an impact on food security, (Rezai et al.,

2015). The success of peri-urban food production by communities in meeting the food security challenge in Freetown and its environs is highly dependent on several factors, i.e. availability and access to resources, social and financial capital and mediating processes. It is important to note that the findings established in this study focused on answering one key research questions that is concerned with the current food production system in urban communities and its contribution to food security among poor urban dwellers. Using Vegetable production in the Gloucester community as my case study, I was able to establish motive, and utilization pattern of the produce. From all evidence gathered in this research it is safe to say that peri-urban food production produces opportunities for these respondents to meet some of their food and financial needs through vegetable production, even amidst all the challenges they encounter on a daily bases. In its contribution to food Security, this research reveals that, the production of vegetable in Gloucester community provides nutritional supplement for low income households directly involved in its production and by extension a whole lot of the urban population. On the other hand, it also generates income through which they are able to provide other food items like staples for themselves and their families even though it is still very minimal.

One key observation from this research reveals that, despite the assumptions that, many policies of the Government through the Ministry of Agriculture Forestry and Food Security (MAFFS) and Non-Governmental Organizations (NGOs) are normally pro-rural, and that government support to UPA is nothing but lip service, data collected from secondary data sources and interviews with key officials/stakeholders reveals that the government of Sierra Leone is gradually implementing institutional and other policy changes that acknowledge, tolerate, manage, and promote the activity of UPA, which is a remarkable trend. However, the problem of Urban and Peri-urban agriculture in this present day Sierra Leone is not the recognition of the sector as a Main Stream Agriculture activity in the country, rather, it's with completion and implementation of proposed policies that would protect, promote and support the activities of urban and peri-urban agriculture especially in peri-urban zones of the city.

Finally, the study established that lack of resources especially Land and finance reduces the amount of productivity, i.e. relatively small production resources and can only cater for a very small income for the family. For instance, lack of capital to acquire land

was mentioned by some of the respondents. The only way they could have access to land (for cultivation) is through renting, buying, or inheritance from parents/spouse. This according to their testimony is because Land as a natural resource is scarce and very expensive commodity, especially for low income earners.

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Appendix 1

Interview Guide

1. Respondents Demographics.
 - I. Name, age, sex, ethnicity, religion, etc.
 - II. Number and demographic details of household members.
2. What is the structure and pattern of vegetable production in Gloucester community?
 - I. Who owns the land and who has access to land?
 - II. Who determines what is being grown?
 - III. What happens to the produce after production and what are they used for?
3. What is being grown, when and by whom?
 - I. What is produced and when?
 - II. Are they considered food?
 - III. Who is involved and who does what?
4. Other than food, what other things are these produces used for?
5. What constraint do they face?
6. What are the proceeds from these produced being used for if they are sold
7. What has been done by local stakeholders, Government officials, NGOs and social groups to support these activities?
8. Is there any existing policy that addresses issues of urban agriculture in the country/municipality? If yes, what are it key features.
9. How influential is community stakeholders in urban food production?
10. How has the covid-19 pandemic affect the cultivation/production of food this community.

Appendix 2

Demographic Characteristic of Local Respondents.

Socio-economic Characteristics	Respondent 1	Respondent 2	Respondent 3	Respondent 4	Respondent 5	Respondent 6
Heads of household Gender	Male	Male	Female	Female	Female	Female
Marital Status	Married	Married	Single	Widow	Married	Widow
Number of persons per household	7	6	3	4	6	4
Age bracket per Household (years)	2-57	15-62	6-32	1-43	7-60	5-41
Ethnic group	Limba	Loko	Loko	Temne	Mende	Loko
Religion	Christian	Muslim	Christian	Muslim	Christian	Christian
Labour	Family	Self	Self	Self	Family	Self
Type of land tenure	Family owned	Rented	N/A	Self-owned	Rented	Community owned
Precise Size of Crop Land	Small	Small	N/A	Smaller	Medium	Smaller
Amount of income from crops	Small	Small	Smaller	Smaller	Medium	Smaller
Reason for cultivating or Marketing vegetable	Main source of Income & food supplement	Extra income & food supplement	Main source of income and Food Supplement	Main Source of Income & food supplement	Food supplement & extra income	Main source of income & food supplement.
Market Engagement	Always	Frequently	Always	Always	Occasionally	Frequently

Demographic characteristics of stakeholders.

Key informants	Institution	Position
Respondent 1	Village Headman Gloucester village.	Village Headman
Respondents 2	Freetown City Council	Staff

Respondent 3	Ministry of Agriculture forestry and food Security	Staff
Respondent 4	Ministry of lands housing and country planning	Staff

Appendix 3



Photo representation of a back yard garden in Gloucester.

Source: Research assistant, field visitation. August 2021.



Photo representation of vegetable cultivation in Gloucester.

Source: Research assistant, field visitation. August 2021