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Assessing Factors Influencing Urban Household Food Security in Garden Township of Lusaka District of Zambia

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ABSTRACT
This study sought to assess factors influencing urban food security in Garden Township of Lusaka District of Zambia. This research utilized a qualitative case study design. The study target population was Garden Township residents and households. The study used a sample size of 100 and a simple random sampling technique was used to select the respondents from the target population. Questionnaire survey was used to collect primary data from the respondents. Collected data from questionnaires was analyzed using SPSS version 22 and presented informs of descriptive statistics using tables, pie charts and bar graphs. From the sample, the study revealed that found that respondents accounting for 53% where male while 47% were female. Therefore, majority of the respondents were male. Further, the study established that 36% of respondents had a monthly household income of less than K500. This was followed by 24% of respondents whose households was between K500-K900 while 17% of households had incomes of more than K3000. Additionally, the study found that 51% of households were male headed while 49% of households of respondents were female headed. Therefore, it can be deduced that majority of respondents households in Garden township were male headed. Furthermore, respondents were asked if their household was food secure. The study found that 70% of respondents' households were not food secure while 30% of households were food secure. Therefore, it can be deduced that majority of households were food insecure. Additionally, the study found that majority of respondents accounting for 47% had two (2) meals per day. This was followed by 27% of respondents who stated that they had three (3) meals per day while 21% of respondents had one (1) meal per day. Minority 5% had four or more meals per day. Therefore, majority of respondents had two (2) meals per day. The study also found that 81% of the respondents strongly believed that the employment status of head of household had an influence on household food security while 19% did not think the status of head of household has an influence on household food security. Overall, urban household food security in Garden was influenced by several factors mainly household income, marital status, gender and employment status of head of household, household size, climate change, food costs, urbanization, shrinking agricultural lands, fragmented, informal and underdeveloped urban food supply systems were the main factors influencing urban food security. Government must begin to pay attention to the challenges of urban poverty and foo security just like rural food security. This can be done by developing a deliberate urban food security policy and agenda that address factors that influence urban food security such as cost of food production, incomes, fragmented and highly informal and underdeveloped urban food distribution channels etc.

Keywords*: Food Security, Policy-Making, Undernourished, household, urban residents.*

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1.0: INTRODUCTION

According to UN (2020) food security is defined by as that all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their food preferences and dietary needs for an active and health life.

Food system planning has been overlooked in urban planning and city policy-making. This is despite the fact that more than 50 percent of the world's population is currently living in urban areas (FAO, 2015). Currently, about 40 percent of Zambia's population is urban and Lusaka, Zambia's capital, accounts for about 25 percent of this urban population. The Central Statistical Office projects that Lusaka Province should nearly double its population from 2 777 439 in 2015 to 5 465 775 by 2035 (CSO, 2013). Globally, the proportion of urban dwellers is expected to reach 70 percent by 2050 (UN-Habitat, 2015) and it is anticipated that the conventional food supply and production systems will be severely challenged to assure food and nutrition security, particularly of the urban poor. Africa is urbanizing fast. Its rate of urbanization soared from 15 percent in 1960 to 40 percent in 2010, and is projected to reach 60 percent in 2050 (UN-Habitat, 2010). The African continent is urbanizing at a historically rapid rate. The share of urban dwellers has increased from 14 percent in 1950 to 40 percent today. By the mid-2030s, 50 percent of Africans are expected to become urban residents (UN DESA, 2014). In Africa, urbanization is likely to continue and level off at about 56 percent around 2050. Urban populations in Africa are expected to triple in the next 50 years, changing the profile of the region, and challenging policy makers to harness urbanization for sustainable and inclusive growth. Thus, the phenomenon makes it impossible to deal with Africa's growth and poverty issues without sustainably managing urbanization processes (AfDB, OECD, UNDP, 2016). According to Freire et al (2014), urbanization is emerging as the main policy narrative for Africa. The high rate of urbanization continues to present major policy questions and challenges in almost all aspects of urban life (Henderson, 2005). Lusaka is the main metropolitan city that is highly urbanized and is the national capital of Zambia. It has a population of around 2.5 million people (CSO, 2010).

1.1 Background of Study

According to the FAO (2014), maintaining food security at the country level and household level is still a major challenge for many developing countries. About 870 million people are estimated to have been undernourished (in terms of dietary energy supply) in the period 2010–2012. This figure represented 12 percent of the global population. The vast majority of these, 852 million live in developing countries, where the prevalence of undernourishment was now estimated at 14.9 percent of the population.

Although food insecurity has traditionally been associated with rural areas, it is now increasingly recognized as a serious and growing problem in the cities and towns of Sub-Saharan Africa, where urbanization has not been accompanied by concomitant industrialization and economic growth (Crush et'al, 2011).

Felker, (2012), adds that some analysts have observed that poverty and food insecurity in the urban areas of developing countries are seriously underestimated. The policy challenges of ensuring food security in cities and towns characterized by high rates of unemployment and underemployment, informality, overcrowding, deteriorating infrastructure and environmental degradation are formidable. In Zambia, the urban population reached 40% in the 1980s but then stagnated and declined to about 35% by 2000 during a phase of counter-urbanization. Since then, urbanization has resumed its growth trajectory with the urban population doubling between 2000 and 2010. The 2010 Census put the urban population at 39% of

Zambia's total population of 13 million or around 5.1 million urban-dwellers (Chizuni, 1994).
Chiwele & Sikanan (2004) says that trends in food production and prices in recent years suggest

that urban food security in African towns and cities cannot be taken for granted. Africa's low level of agricultural productivity, its increasing dependency on imports to meet its food needs and the fast pace of urbanization are producing serious food security challenges Low agricultural productivity since the 1960s has resulted in most African countries becoming net food importers. In the case of Zambia, even though the production of maize (the principal staple crop) improved with the reintroduction of subsidized fertilizers in 2002, food security situation especially in poor urban areas remains poor. Originating from this background, this study sought to assess the factors influencing urban food security in garden township, Lusaka, Zambia**.**

1.2 Statement of the Problem

Crush and Frayne (2011) adds that a review of global food security policy debates in the first decade of the twentieth century showed that the "new international food security agenda" was dominated by a pervasive rural bias that focused almost exclusively on rural hunger and increased support of smallholder agriculture while neglecting urban food security and hunger especially in many Sub-Sahara Africa. In Zambia, Food security has conventionally been associated with smallholder agricultural production and household poverty in the rural areas.

Crush et'al, (2012). Most of the knowledge and policies for managing food insecurity consequently relate to the rural areas of the country. Such knowledge and experience may not, however, be relevant to the urban areas, because of differences in context and in how the majority of the rural and urban populations access food. For instance, most urban dwellers are net food buyers and depend on food purchases.

Above all, access to food in urban areas depends on the availability of food in the market, food prices, and formal and informal incomes Non-market food transfers from the rural areas can also play a role in mitigating urban food insecurity, but the overall urban food security situation depends on factors other than the supply of food and these factors remain under-researched in Zambia. The main problem in this study lies in the fact that despite the large body of literature on food security in Zambia, there is still limited empirical studies that document factors influencing urban food security particularly in Lusaka and garden in particular. It was this question that this study sought to explore and asses the factors that influence urban food security in Garden township of Lusaka district (Barret, 2006).

1.3 Justification of the Study

This study was justified on the basis that it might provide much needed baseline information on the food security situation in Garden Township and might contribute to the existing literature in helping to implement a proper policy against the urban population's vulnerability to food insecurity. Further, since urban household food security is subject to change, it was important to investigate its determinants to predict future shocks and to understand how the urban household responds to food insecurity.

1.4 Aim of Study

The aim of this study was to investigate the factors influencing household food security in Garden Township of Lusaka, Zambia.

1.5 Objective of the Study

i. To examine the food security situation in Garden township of Lusaka, Zambia
ii. To identify factors influencing household access to food in Garden township.
iii. To assess the contribution of urban farming activities to food security in Garden township.

1.6 Research Questions

i. What is the food security situation like in Garden township of Lusaka?
ii. What factors influence household's access to food in Garden Township?
iii. How has urban farming activities contributed to urban food security in Garden Township?

1.7 Delimitation

This study was only conducted in Garden township of Lusaka district and only households in Garden Township were included in the study. In addition, the study was limited only to the factors that influence urban food security in Garden Township, Lusaka.

1.8 Limitations

The study was carried out only in Garden Township; hence, the findings could not be generalized to the rest of Lusaka district or Zambia as a whole.

.9 ConceptualFramework

Several factors influence urban food security. These are illustrated in the conceptual framework below.

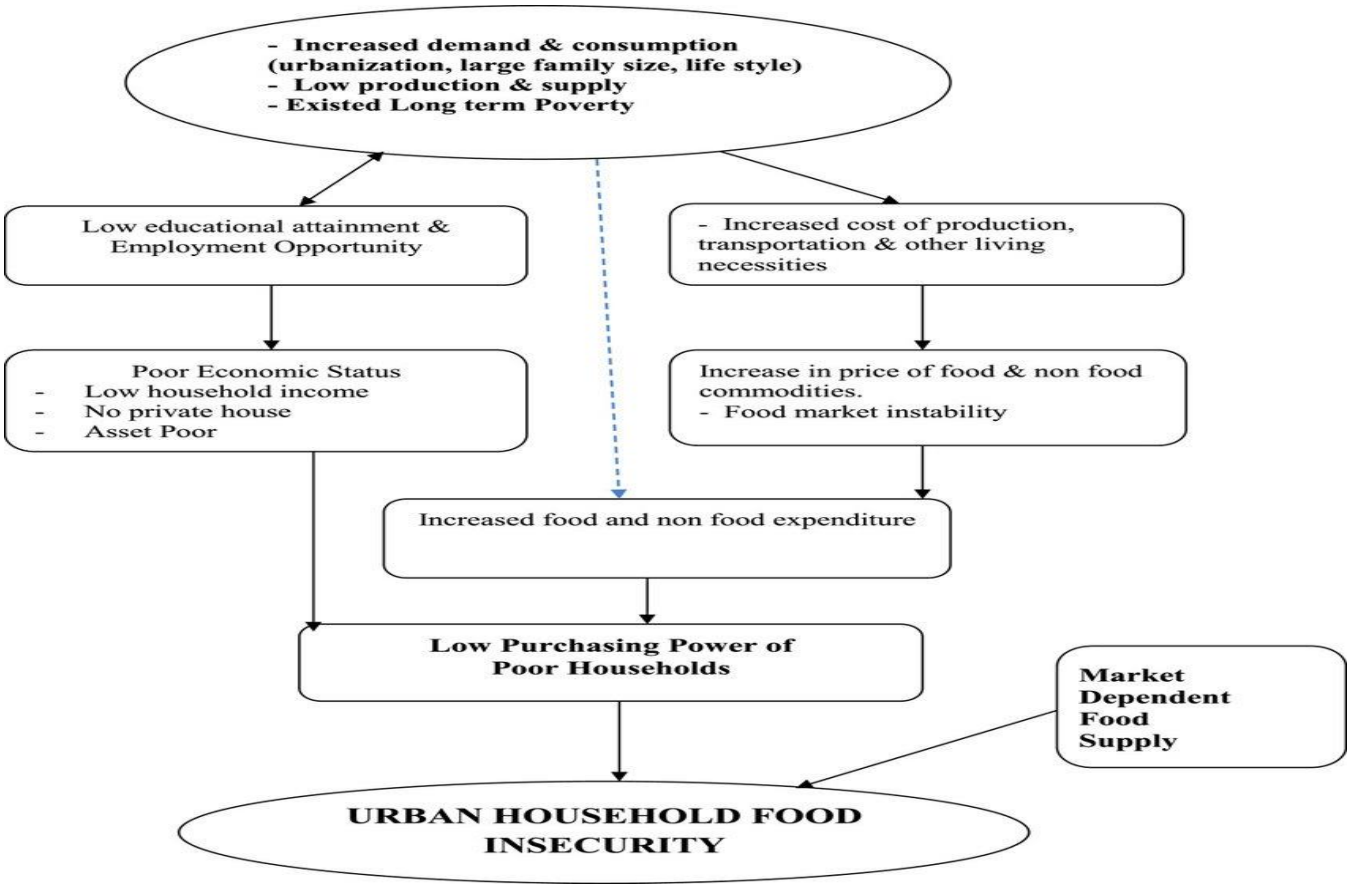

Figure 1.1: ***Conceptual framework of urban Household food Insecurity.***
Source: Fischer, E.; Qaim, M. (2012)

CHAPTER TWO: LITERETURE REVIEW

2.0: Overview

This chapter explored the various literature related to food security as well as the factors that influenced food security globally and nation

2.1 Concept of Food Security

Food availability is a problem for everyone and especially for the developing world. Food security means the provision and access to nutritionally sufficient and culturally accepted food by each member of the household for healthy life obtained through socially acceptable ways. Food insecurity, on the other hand, is the uncertain or limited access to nutritionally adequate and safe food (Bishwapriva, 1985).

(FAO, 2014) defines food security is multidimensional in nature and that makes accurate measurement and policy targeting quite challenging for the policy makers. However, food security means ‘‘consistent, dependable access to enough food for active, healthy living

Bogale (2012) suggests that food security is a situation that exists when all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life.

2.2 Global Food Security Situation

Food insecurity has become a worldwide concern due to the increasing number of people which remain undernourished amounting to 842 million, approximately 12 percent of the total world’s population. Developing countries are intensely affected. This is really true in the case of Asia and Africa where more than 92 percent of the world’s undernourished people are living; 552 and 226.4 million respectively. About 294.7 million people are food insecure only in South Asia which is almost 35 percent of the total undernourishment world population (FAO, 2013).

Almost one out of ten households are still unable to secure its food despite the considerable efforts put forward by both public and private sectors to assist poor household in getting their food needs (FAO, 2006).

2.3 Locating the Urban in the Global Food Security Agenda

The rural and smallholder agriculture bias which characterised much global thinking about food security in the first decade of the twenty-first century has largely persisted into the second. The Sustainable Development Goals have an enhanced focus on food security (Goal 2) and a new focus on sustainable urbanisation (Goal 11). The objective of Goal 2 is to end hunger, achieve food security and improved nutrition and promote sustainable agriculture. This brings food security into focus as its own goal, rather than as a subset of the poverty goal as in the MDGs. The first target of Goal 2 is by 2030, to end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round. Even though the target suggests increasing awareness of food security in an urbanising global context, the overall set of targets focus on production and sustainable agriculture.

Battersby (2017), notes that SDG 2 continues to frame the food problem as one of scarcity informed by the knowledge effect of the MDGs. That is to say, the limited view of food security in the MDGs is amplified in the SDGs.

2.4 Locating Food in the Urban Agenda

The obstacles to creating policies that can address the challenge of urban food security are not limited to anti-urban biases of the food security agenda. There is a complementary absence of food security

in discourses and development interventions in the urban agenda. The new urban SDG Goal 11 promisingly aims to make cities and human settlements inclusive, safe, resilient and sustainable (UN 2017).

However, food is altogether absent from the urban SDG, which includes ten targets related to housing, transportation, participatory planning, disaster risk reduction, and other issues that may be related to food but do not specifically serve the food security agenda in cities. The effect of defining a set of urban issues of concern is to define other issues, such as food security, as not inherently urban.

Battersby (2017), notes that ironically, having a specifically urban goal may have led to a lack of engagement." And yet, by 2030 the global population will be even more urbanized and the need for a global food agenda that recognises the needs of poor urban consumers will be even more urgent.

The global picture of urbanisation presented by UNHABITAT appears to be as unengaged with food security as the international food security agenda is with the urban. UNHABITAT has traditionally avoided inclusion of urban food issues in its programming priorities. Most recently, the 2015 African Urban Agenda document prepared for HABITAT III discussions omits any reference to food security (UNHABITAT 2015).

The continuing omission of food from UNHABITAT's brief is indicative of the separation of food security from the urban agenda at the global and continental levels. The official African regional declaration for HABITAT III did not explicitly name food as an urban challenge or development priority, even though issues like housing and water were mentioned (UN 2016).

The 2016 World Cities Report potentially signifies a new UNHABITAT sensitivity when it notes that a shift towards an increasingly urbanised world constitutes a force which can be harnessed for a more sustainable development trajectory. This dramatic shift towards urban life has profound implications for energy consumption, politics, food security [emphasis added] and human progress (Moreno et al. 2016).

Yet, the report then goes on to mention food and food security primarily in terms of food production, for example in the effect of urban sprawl on the loss of farmland, the effects of climate change on agriculture and hence the urban food supply, and the potential for global food security to benefit from biodiversity in cities. The conventional framing of food security as a non-urban issue is evident in the statement that even seemingly unrelated issues such as food security and rural water supplies are closely tied to the economic growth and prosperity of cities (Moreno et al. 2016).

The integration of the African Regional Nutrition Strategy in the AU Agenda 2063 is further evidence of the increasing prominence of nutrition (AU 2017). These developments reinforce the argument that food security is a multi-sectoral problem that is far more complicated than simply growing more food. On the other hand, much of the nutritionist agenda does still tend to be production-focused, for example in advocating for nutrition-sensitive agriculture, with less attention paid to nutrition needs in cities (Jaenicke and Virchow 2013). Nutrition narratives are increasingly linked to urbanisation through concerns about the double burden of nutrition with rising obesity rates and consequential rises in non-communicable disease such as diabetes and heart disease.

2.5 Urban Food Security in Sub-Saharan Africa

In a recent overview of the urban food situation, Atkinson (1995, p. 152) suggested that given current trends, the question of urban food security may become the "greatest humanitarian challenge of the next century." Yet, this paper argues that food

insecurity in African cities is relatively invisible to policymakers and is scarcely recognized in contemporary political debate.

This paper very briefly reviews the contemporary urban situation in Africa, discusses the "disappearance" of the urban food problem, and suggests some research questions of policy relevance. The problems faced by African cities are many. Rates of urban-population growth, which had slowed during the 1980s, are again on the increase (United Nations 1995).

The infrastructural and tax bases of cities cannot catch up with the services demanded by their expanding urban populations, and this leads to increased crowding and a deteriorating urban environment Urban economy in sub-Saharan Africa declined markedly during the 1970s and 1980s, and policy reforms initiated under structural-adjustment programs (SAPs) in the 1980s cut many services and certainly cut public sector employment. In theory, the movement toward more democratic forms of government in contemporary Africa strengthens local and municipal governments. But it also puts increased demands on their already strained capacities, and questions remain about the access of the urban poor to local political processes (Farvacque and Becker et al. 1994).

Although poverty is still primarily a rural problem, the rapidly increasing level of urban poverty requires much greater policy attention (Naylor and Falcon 1995). Urban poverty is increasing over much of the continent, and urban analysts believe the extent of urban poverty may be underestimated (Satterthwaite 1995).

The urban poor spend a large portion of their income on food, which largely means that the poverty problem appears as a food-security problem. Contemporary African urban food economies comprise both a global supermarket for the well to do and a set of much localized coping strategies for the vulnerable (Smith 1991).

Development theory has been ambivalent about African urbanization, which was once equated with modernization and growth but has since been branded as a parasitic process and a cause of underdevelopment (Baker and Pedersen 1992, p. 12). Many of the reasons for the change in view have stemmed from "urban-bias" theory (Lipton, 1977)

Bates (1981) suggests that because of the greater political clout of urban populations, they are favoured at the expense of rural populations. Urban-bias theory became one of the intellectual cornerstones of SAPs in Africa. During the 1980s and 1990s, policy emphasis was on "getting the prices right," or permitting market forces, rather than (urban-biased) bureaucracies, to set prices, with urban consumers bearing much of the cost of this adjustment. Urban-bias theory is still very influential in the views of planners and policymakers in the 1990s, although perhaps not as much as in the past. Fortunately, researchers are reexamining cities and urban poverty, in terms of both research and policy. However, urban food-security issues have virtually disappeared from the political debate.

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2.6 Urban Farming and Food Security in Zambia

Urban agriculture is a feature of the food supply in many African cities and has been advocated as a solution to food insecurity among poor households. In Zambia, there is a large literature on urban agriculture, which dates back to the 1980s. Such studies have consistently argued that urban and peri-urban agriculture is all-pervasive in Zambian cities. The 2007-2008 Urban Consumption Survey in Zambia, for example, found that over 85% of households in four cities (Lusaka, Kitwe, Mansa and Kasama) had a food garden (Chizuni, 1998).

In Lusaka, 40 percent of households also had a field where they were growing food. Most households were growing vegetables (58%) in their gardens and fields, followed by maize 57 percent and fruit 57 percent (CSO, 2010). Among poor households (the lowest income tercile), 83 percent had a food garden and 49% had access to a field.

They were also more likely to grow maize and less likely to grow fruit than better-off households. Around 20% of households sold homegrown maize and these households sold 60 percent of their produce, suggesting a commercial motive for urban agriculture among some households (Chiwele, 2004).

Despite the seemingly widespread practice of urban agriculture in Lusaka, various studies have identified numerous obstacles to its further expansion including unsupportive municipal policy, urban expansion and in-filling, land shortages and, most recently, climate change. Some

have argued that the urban poor face additional obstacles that make them far less likely to engage in urban agriculture for home consumption and sale. This report focuses on the situation of poor urban households in Lusaka and offers an opportunity to explore this question in greater depth (Crush et'al, 2011).

2.7 Empirical Studies on the factors Associated with Food Security

Following prior literature, several factors are associated and considered as determinants of food security. Holden and Ghebru (2017) contended that, for smallholder farmers, the ultimate goal is to achieve food security. There are a number of studies that investigated the effect of gender of household head on food security.

Mallick and Rafi (2019) examined the food security status of male- and female-headed households in Bangladesh. Their results revealed that gender of household head had no effect on household security and this was attributed to no cultural and social restriction for women's participation in labor force. A study by Kassie et al. (2017) assessed how gender of household heads was associated with food security in Kenya. They documented that female-headed households were more vulnerable to food insecurity than male-headed households.

Similarly, Tibesigwa and Visser (2019) evaluated the impacts of gender inequality among smallholder households in South Africa on food security. Their results revealed that male-headed households were more food-secure when compared to their female counterparts. Further, they indicated that a wider gap in food security was observed in rural areas in contrast to the households in urban areas.

CHAPTER THREE: RESEARCH METHODOLOGY

3.0 Overview

This chapter provided the research methodology that was used in the research. In particular, it provided the research design, target population, sample size and sampling procedure, data collection tools and methods of data analysis. The ethics considered during data collection were also provided in this chapter.

3.1 Research Design

This study employed a case study research design to collect data on the factors influencing food security in Garden Township of Lusaka District. Case study design was used because of its ability to collect data from large populations by using questionnaires and its usefulness in describing the characteristics of a large population.

3.2 Target Populations

The target population for this study was the urban households in Garden township of Lusaka. The Study targeted 100 households. The total population therefore was 100.

3.3 Sample Size and Sampling Technique

The sample size for this study was 398 randomly selected respondents across Garden Township in Lusaka District arrived at using the Taro Yamen Fomular for sample size as shown below.

$$n = \frac{N}{1 + N(\alpha)^2}$$

WHERE:

α is the level of significance or margin of error (5%)
n is sample size
N is the sample frame, in this case the population of Garden Township in Lusaka District which was estimated at 80,000 according to CSO (2015).

Therefore;

$$n = \frac{N}{1 + N(\alpha)^2}$$

n= 80, 000/1+80,000 (0.05) ^2
n = 398

In terms of sampling procedure, simple random sampling was used to select 100 households from Garden Township. Ten (10) numbers were placed in a secrete box and a random number at K^{th} interval was picked. One number representing households was randomly selected as the starting point. Thereafter, every K^{th} household was selected into the study until 100 household were interviewed

3.4 Instrument of Data Collections

Questionnaires were used collect data and administered by the researcher. In case of language barrier, the questionnaire was translated to local language the respondents understood. Furthermore, researcher was present to give further clarification where necessary and, to ensure that all questionnaires were collected. In addition, the respondents' anonymity and confidentially was maintained by requiring that they did not write their names on questionnaire.

3.5 Data Collection Procedure

Questionnaires were distributed to all respondents. Respondents who had challenges reading or understanding the questionnaires were assisted by reading out the questions to them and explaining any elements they might not understand. Questionnaires were then collected immediately from respondents by the researcher for data analysis. At the same time, the study made use of primary and secondary techniques of gathering information. While primary techniques involved questionnaire interviews with participants, secondary techniques made use of available literature.

3.6 :Data Analysis

Statistical Package for the Microsoft Excel (2016) was used for analyzing the collected data for this study. It was the most frequently used software for quantitative analysis. With SPSS, the data was entered and stored, and data output files were generated and Microsoft excel 2016 was used to create charts from SPSS data outputs. This was then presented in form of descriptive statistics using pie charts, tables and bar graphs etc.

3.7 Ethical Considerations

This study considered the following ethical issues, among others:

- Permission was sought from all participants/respondents before they were interviewed or have a questionnaire administered to them. This ensured freedom of expression. At the sites where permission was granted, the expected respondents were briefed about the procedures to be used, and the value of the research.
- To maintain confidentiality, participants were assured that no names would be used on the interview schedules and questionnaires; serial numbers was used instead. In this manner, all participants' details were treated anonymously.
- Participants were also assured that data to be collected would not be disclosed to other persons, and that the data would only be used for academic purpose only.

CHAPTER FOUR: FINDINGS/RESULTS

4.0 Chapter :Overview

This chapter presented the results of the research in relation to factors influencing urban household food security in Garden township of Lusaka, Zambia. For easy understanding, tables and figures are used to present the results. This chapter presented the results of the research according to each objective.

4.1 Socio-Democratic Characteristics of Respondents

Sex of Respondent

As shown in table 4.1, the study found that respondents accounting for 53% where male while 47% were female. Therefore, the majority of the respondents were male.

TABLE 4.1: SEX OF RESPONDENTS

Sex	Percent	Valid Percent	Cumulative Percent
Male	53	53	53
Female	47	47	100
Total	100	100	

4.2 Age of Respondents

The study found that respondents in the age bracket of 18-25 accounted for 21%, followed by those in the age bracket of 26-30 accounted for 33% of respondents. Those in the age bracket of 31-35 accounted for 21% of respondents while those in the category of 36-40 accounted for 5% of the respondents. The respondents in the age category of 45-50 accounted for 10% of respondents while those above 51 years accounted for 10% as well Therefore, it can be deduced that majority of respondents where in the age bracket of 26-30 years.

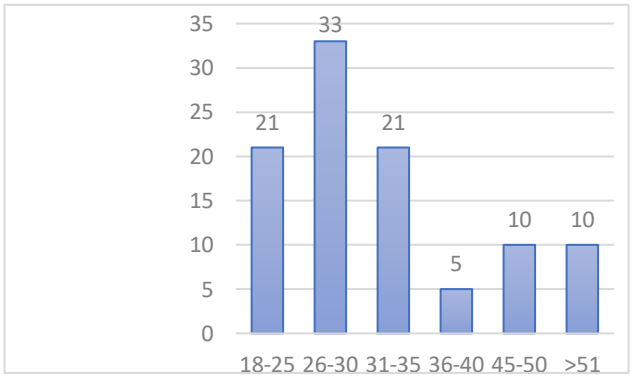


Figure 4.1: *Age of Respondents.*

4.3 Martial Status of Respondants

The research established that majority of respondents' marital status were as follows: 47% were married, 25% were single, 12% were separated, and 10% were widowed with minority 6% divorced. Therefore, it can be deduced that majority of the respondents were married.

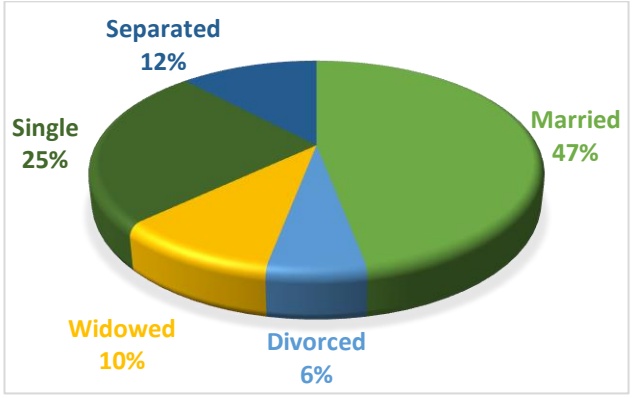


Figure 4.2: *Respondents' Marital Status.*

4.5 Occupation of Respondents

The study found that 36% of the were artisans, 31% were traders, 19% were in business as business man/woman while the minority 14% where of the respondents were civil servants. Therefore, majority of the respondents were artisans involved in activities such as brink laying, welding, carpentry to name a few.

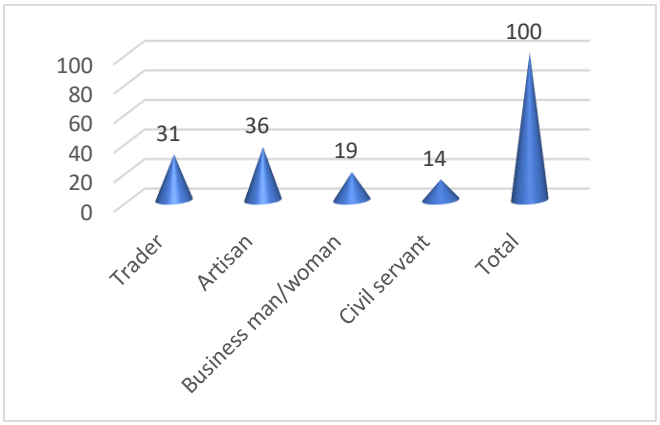


Figure 4.3: *Respondents Occupation*

4.4 Area of Residence of Respondent

The study established that 88% of respondents designated their area of residency as high-density area while minority 12% designated their residential area as medium density area. Therefore, majority of the respondents are from high-density areas as shown in figure 4.4 below.

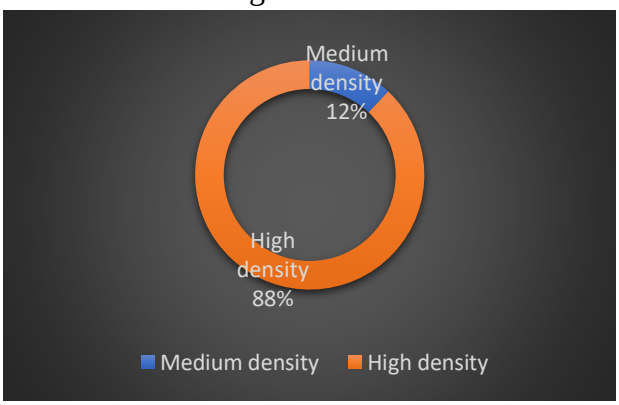
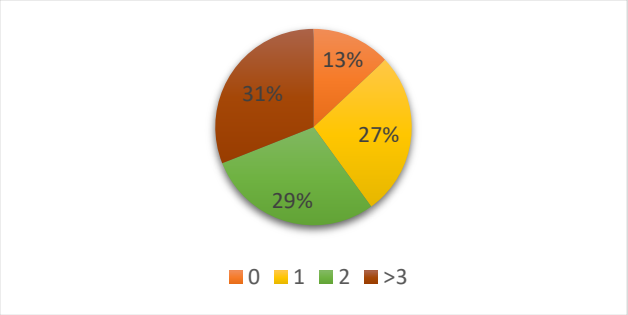


Figure 4.4: *Respondents Area of Residency.*

4.7 Respondents Number of Children

The study found that 31% of respondents had more than three (3) children. This was followed by 29% of respondents who indicated that they had two (2) children while respondents who had one (1) child

accounted for 27%. The minority 13% of respondents did not have any children. Therefore, majority of the respondents had more than three (3) children.



4.6 Respondents Household Level of Income

The study found that 36% of respondents had a monthly household income of less than K500. This was followed by 24% of respondents whose households was between K500-K900 while 17% of households had incomes of more than K3000. Further, 12% of respondents had incomes of K1000-K1900 with the minority 11% having incomes between K2000-K3000. Therefore, majority of respondents had incomes of less than K500.

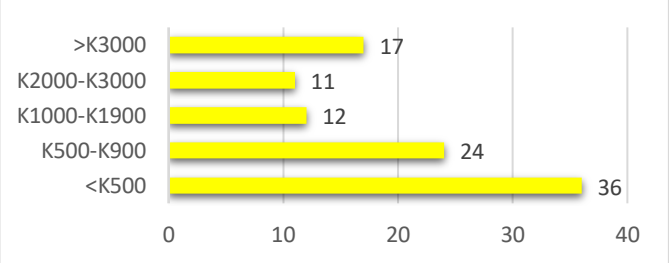
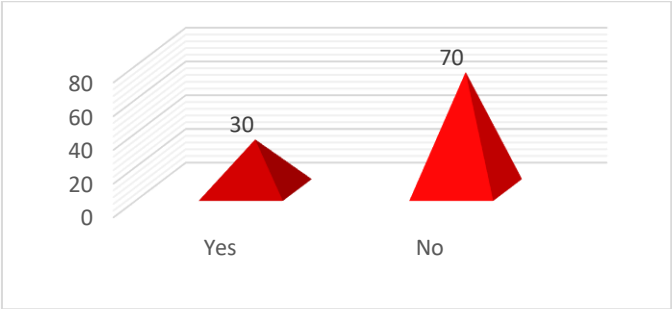


Figure 4.5: *Respondents Level of Monthly Income.*

4.8: Household Food Security

Respondents were asked if their household was food secure. The study found that 70% of respondents' households were not food secure while 30% of households were food secure. Therefore, it can be deduced that majority of households were food insecure.



4.9 Contribution of Urban Farming Food security in Garden Township

The study found that 56% stated that urban farming did not contribute to urban food security in Garden while 44% stated that urban farming had contributed to urban food security. Therefore, urban farming did not contribute to food security in Garden.

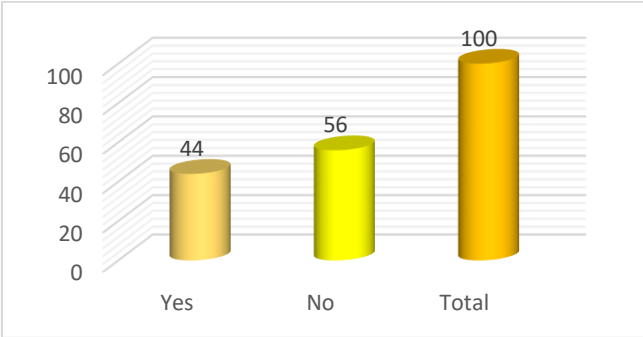


Figure 4.8: *Urban Farming Contribution to Food Security.*

CHAPTER FIVE: DISCUSION, CONCLUSION AND RECOMMENDATIONS

5.0: Overview

This chapter presents the discussion of findings as well as conclusions and recommendations of the study.

5.1 Discussion of Results

5.1.1 Social Economic Characteristics of Respondents

The study found that respondents accounting for 53% where male while 47% were female. Therefore, majority of the respondents were male. A similar study conducted on the prevalence of urban gardening in Garden Township by Mbuzi (2018) found that this finding is supported by several studies that indicate the participation of women in farming is still low globally and worse in Africa due to cultural and other barriers. For instance, a study was carried out on factors hindering small urban farming growth in Ibadan, Oyo state Nigeria which showed that women are still segregated in agriculture and their presence in the sector is still low (Aderemi, 2003). The OECD equally reports similar findings in Niger suggesting that women are still facing challenges to participate in urban food systems owing to cultural limitations such as failure to open bank accounts, own land or borrow money from the bank without approval and permission from their husbands.

In addition to the above, this result is consistent with the findings of Clarke et al (2010, p.24) found that females tend to be fewer than males in the in agriculture/farming sector. The reasons why there are fewer females than males in the sector are plentiful but states that female agri preneurs face challenges such as illiteracy, innumeracy and inadequate business skills to run successful urban farming enterprises (Chisala, 2008).

On level of education of respondents, the study found that 37% of respondents had attained tertiary level of education, 35% had attained secondary education while 13% had attained primary level of education with 15% having not attained any form education. Therefore, it can be deduced that majority of respondents had attained tertiary level of education. Further, this shows that the respondents were able to understand the questions of the researcher and therefore, the quality of their responses can be believed largely. The higher levels of education may be due to the fact that this is a predominately youthful population, confirming that the youth of nowadays tend to be more educated than before. This better education also means that literacy levels in this group are higher and would allow these micro enterprise owners to be able to write and keep basic business records. Business records are essential to business operations and are usually a requirement when one is trying to access finance from a lender, (Olorunshola, 2003).

The results of this study highlight to some extent the high level of lack of formal employment in the country, at present a lot of university graduates are unable to find formal employment and therefore end up setting up their own micro enterprises just to sustain their lives.

Furthermore, the study found that 65% of respondents where in formal employment while 35% were in informal type of employment. Therefore, majority of respondents were in informal employment. This finding is supported by several studies, which indicates that Zambia has a high level of unemployment and this is particularly worse for youth unemployment.

Conversely, the study found that 36% of respondents had a monthly household income of less than K500. This was followed by 24% of respondents whose households was between K500-K900 while 17% of households had incomes of more than K3000. Further, 12% of respondents had incomes of K1000-K1900 with the minority 11% having incomes between K2000-K3000. Therefore, majority of respondents had incomes of less than K500. A study by Mwansa (2013) found that majority of poor households in Lusaka's unplanned

settlements are characterized by poor incomes due to limited social economic activities.

Further Mudenda states that economically, the major activities that take place in Lusaka include operation of small-scale businesses such as retail shops and vending of local commodities. Added to that, construction of domestic business structures such as housing units and shops is another major economic activity. Economic in the sense that such structures are meant to be the sources of income for land owners from between the range of K400 and K800 (Zambian currency) (US$40-80) is generated every month in high density areas while in middle and low density it ranges from K1, 200 to above K10, 000 (Mudenda, 2009).

5.2 Household Food Security Situation

The study found that 51% of households were male headed while 49% of households of respondents were female headed. Therefore, it can be deduced that majority of respondents households in Garden township were male headed. There are a number of studies that investigated the effect of gender of household head on food security. Mallick and Rafi (2019) examined the food security status of male- and female-headed households in Bangladesh. Their results revealed that gender of household head had no effect on household security and this was attributed to no cultural and social restriction for women's participation in labor force. A study by Kassie et al. (2017) assessed how gender of household heads was associated with food security in Kenya. They documented that female-headed households were more vulnerable to food insecurity than male-headed households. Similarly, Tibesigwa and Visser (2019) evaluated the impacts of gender inequality among smallholder households in South Africa on food security. Their results revealed that male-headed households were more food-secure when compared to their female counterparts. Further, they indicated that a wider gap in food security was observed in rural areas in contrast to the households in urban areas.

Conversely, the study found that majority of respondents accounting for 47% had two (2) meals per day. This was followed by 27% of respondents who stated that they had three (3) meals per day while 21% of respondents had one (1) meal per day. Minority 5% had four or more meals per day. Therefore, majority of respondents had two (2) meals per day. Households in garden were not food secure and majority of respondents only had two meals per day. This could be due to either availability of food, accessing of food or utilization of food. Meal frequency is an important indicator of food security and nutritional status. Defining food insecurity as a household's inability to consume at least three meals a day, this study uses a logic model to investigate the socioeconomic determinants of food insecurity among Zambian households. Primary data from the 2010 Living Conditions Monitoring Survey data set developed by the Central Statistical Office were used. The 2010 Living Conditions Monitoring Survey used a nationally representative sample of about 20,000 households. This study found that urban households, households with higher income, and households with younger, more educated and male heads were more likely to be food-secure.

5.3 Factors Influencing Urban Food Security in Garden Township

5.3.1 Household Income

The study established that 82 percent of respondents viewed household income as having an influence on household food security while 18 percent of respondents did not hold the view that income had an influence on food security. Although poverty is still primarily a rural problem, the rapidly increasing level of urban poverty requires much greater policy attention (Naylor and Falcon 1995). Urban poverty is increasing over much of the continent, and urban analysts believe the extent of urban poverty may be underestimated (Satterthwaite 1995).

Smith (1991) suggests that the urban poor spend a large portion of their income on food, which largely means that the poverty problem appears as a food-security problem. Contemporary African urban food economies comprise both a global supermarket for the well to do and a set of much localized coping strategies for the vulnerable Thus, limited income leads to household poverty and therefore food insecurity at household level.

The root cause of urban food insecurity is income poverty. Urban residents rely primarily on food purchases, and any decline in incomes and/or increases in food prices can have catastrophic consequences. In recent research on how the food, fuel and financial shocks affected low-income groups in the period 2008–2011, food security emerged as the most severe cumulative impact (Heltberg et al., 2012). A large majority of low-income urban residents rely on informal sector activities and casual labour that only provide low and irregular earnings. In low-income nations, it is estimated that informal employment accounts for half to three-quarters of all non-agricultural employment (Chen, 2010). Since 2008, the economic crisis has had a devastating impact on informal sector workers following increases in the cost of food, fuel and transport and increased competition from workers laid-off from formal sector jobs (Horn, 2011).

5.3.2 Marital Status, Gender of Head of Household and Household Size

According to Rakodi, (1985) on marital status, 73 percent of respondents did not view marital status of head of household as having an influence on household food security while 27 percent view marital status has a factor of household food security. Conversely, 54 percent of respondents did not view gender of head of household, as a factor in ensuring household food security while 46 percent though gender was a factor in ensuring food security at household level. non-farm work affects household food security in Ghana and the result of the study supported the widely accepted view about nonfarm income; that it adds to eradication of poverty, while (Gebre, 2012) investigated factors affecting household food security in district Mudzi of Zimbabwe by using data obtained from 120 randomly selected household through a structured questionnaire. Age of the household head, education of household head, household labor size, and ownership of livestock, remittances and access to market information were found to be positively influencing household food security.

Conversely, Bogal (2012) examined the factors which determine the household level of susceptibility to food insecurity by utilizing method of expected poverty approach having data obtained from 277 randomly selected household in Ethiopia. The food insecurity of household is associated with many factors including the size of the family, cultivated land size, the fertility of soil, irrigation access, number of extension visits, fertilizer use and improved seed.

De Cock et al. (2002) investigated the household food security situation in rural South Africa. The multivariate analyses indicated that education of household head positively contributed to food security. Maitra and Rao (2010) examined the factors affecting household food security in Kolkata, India. The findings of the ordered probit model revealed that a household head with higher education level increased the chance of household being food-secure. Using the logistic regression model, Zhou et al. (2011) explored the factors that influence food security in rural Pakistan. The results demonstrated that education of the household level played an important contribution toward households being food-secure.

A study by De Cock et al (2019) investigated the determinants of food security in rural South Africa, and the multivariate regression analyses found that household size was a major determinant of household food security, and a smaller household size was less likely to be food-insecure. A study by

Kabunga et al. (2012) used the Household Food Insecurity Access Scale to measure household food security, and found that larger household sizes are associated with higher food insecurity in Kenya. In contrast, the findings of the study by Maitra and Rao (2010) in India indicated that a larger household size had less likelihood to be found in a food-insecure category. The contention is that, with a larger household, the number of breadwinners that the household may depend on for household provision is higher.

5.3.3 Cost/Prince of Food and Increase in Non-Food Expenditure

The cost or price of food was seen as factor influencing food security by 73 percent of respondents while 27 percent of respondents did not. Therefore, the price of food was found to be a factor influencing household food security in Garden. The high rate of joblessness and low wages, and the unpredictable nature of casual labour within informal settlements, lead to generalised food insecurity for residents (Muungano Support Trust et al., 2012).

What is perhaps even more extraordinary is that in all but one of the 'villages' (neighbourhoods) overall expenditure is regularly much higher than incomes, suggesting high levels of indebtedness. Clearly, any shock has devastating impacts on such stretched budgets. This is also the case in low-income areas of Colombo, Sri Lanka's capital city and Kitwe in Zambia, where 30 per cent and 20 per cent of households respectively report spending almost all their available income on food (Prain, 2010).

The higher proportion of income spent on food by low-income households reflects their limited financial resources. It also reflects the fact that there is a sometimes-considerable difference in prices within cities and between different types of retailers. In Cape Town, such difference between supermarkets and small shops can be as high as 20–26 per cent (Battersby, 2012). In Egypt, although most poverty line studies take regional food price differences into account, they miss significant intra-city differences.

The residents of Greater Cairo's ashwa'iyyat (informal settlements) can pay much more for food than the residents of wealthier neighborhoods. In part, this is because markets and supermarkets, where prices are lower, are not usually located near informal settlements and therefore buyers incur additional costs for transport. Food is also available locally in small shops and from street vendors, but supplies are usually bought through intermediaries, which increases prices. For low-income households depending on daily wages, food has to be bought on a daily basis in small quantities, which is typically much more expensive.

5.3.4 Climate Change

Climate change was not found to be a major factor influencing household food security in Garden by 71 percent of respondent while 29 percent though climate change had an influence on food security. Therefore, climate change was not a factor influencing household food security in Garden Township. Climate change amplifies the environmental and socio-economic drivers of food insecurity, as its impacts are deeply affected by poverty and inequality. Over time, climate change will affect all four components of food security: availability, access, utilisation and stability (FAO, 2009).

Currently, attention focuses mainly on availability, that is, on production. However, climate change impacts on incomes and livelihoods and thus on access is equally important for the vast and growing majority of people, and in particular for low-income groups in both rural and urban areas, who purchase their food rather than produce it. The majority of the food consumed in urban areas comes from rural regions or is imported, and therefore disruptions in production, transport and storage affect urban food supplies and prices (Ziervogel and Frayne, 2011).

In other words, in terms of availability, urban food security is affected not only by the local impacts of climate change, but also on impacts that take place in other locations and indeed globally, especially with regards to imported foods. Changing climatic conditions will affect crop growth and livestock performance, the availability of water, fisheries and aquaculture yields and the functioning of ecosystem services in all regions. Saltwater intrusion threatens some of the major food-producing regions in the world that are located in mega-deltas, where also much of the world's population lives Impacts are expected to be very unevenly distributed geographically (Beddington et al., 2012).

5.3.5 Urbanization, Limited Urban Farming and Urban Sprawl

Urbanization was considered by 76% of respondents as a factor influencing household food security while 24% of the respondents did not. Further, 65% of respondents considered limited urban farming as a factor influencing urban household food security while 35% did not. Conversely, 73% of respondents considered urban sprawl as a factor influencing food security while 27% of respondents did not. In many cases, urbanisation is implicitly assumed to lead to changes in consumption behavior and dietary patterns that are resource intensive, such as greater consumption of meat, and therefore have a negative impact on increasingly scarce natural resources. A review of the relationship between urbanization and food prices suggests, however, that there is little evidence to support this view (Stage et al., 2009).

The term urbanisation is often used to include urban population growth, urban expansion, income growth and cultural change. But conflating all these dimensions can be problematic and of little help to understanding the role of urbanisation in food security. In demographic terms, urbanisation is a much simpler concept, which refers to the share of the total population living in areas classified as urban, while the rate of urbanisation is the annual percentage increase in this level. As noted earlier, virtually all global population growth in the next four decades is projected to be in urban areas of Africa and Asia. Urbanization is often conflated with the expansion of built-up areas and the loss of agricultural land. To some extent this is inevitable: most cities tend to be located in areas with fertile soils, and in many cases, it is precisely such fertility and the availability of fresh water that determine the location of urban centers (Satterthwaite et al., 2010).

Overall, urban built-up areas represent a very small proportion of global land area at 0.5 per cent (Schneider et al., 2009) and only in Europe does this exceed 1 per cent. Other estimates suggest 2.7 percent, taking into account open land of various types within urban boundaries (McGranahan et al., 2007). The higher density of urban centres compared to rural settlements means that urban populations tend to occupy less land. But there are significant variations in the average urban built-up areas per person.

Wealth and the changing nature of economic activities, with the delocalisation of manufacturing and investment in smaller centres, are also at the origin of profound changes in the form of urban centres and the emergence of urban sprawl in high- and middle-income countries. In Mexico City, for example, between 1990 and 2000 the population of the core city declined by 2.1 per cent annually on average, while that of the suburbanised zones increased by 2.8 per cent. In the last two decades, Buenos Aires, Santiago and Mexico City have experienced a polycentric urban expansion of first- and second-order urban localities sprawling along major highways and functionally linked to the main city (Romero-Lankao, 2007). Urban sprawl (and the increased use of the private sector it involves) increases emissions, while densely built-up urban centres are typically more energy efficient (Hoornweg et al., 2011).

5.3.6 Cost of Living, Food Market Instability and Low Purchasing Power

Increased cost of living was found to be factor influencing urban food security by 52% of respondents while 48% did not. Further, the study found that 64% of respondents' views instabilities in food markets as a factor influencing food security while 36% did not. Conversely, 74% of respondents associated poor purchasing power as a major factor influencing food security while 26% did not. Expenditure on food represents an often-extraordinary proportion of low-income households' total expenditure. Research in 11 southern African cities shows that, albeit with great variations between cities, food purchase is the most important expenditure for most households, and that it is greater among poorer households (Crush and Frayne, 2010).

Frayne et al (2010) suggest that the same research suggests that four out of five poor urban households do not have enough to eat at any given time. Research in one of Nairobi's largest informal settlements, Mathare, suggests similar patterns. Food is the single largest expense for residents, accounting for nearly half of household expenses.

5.4 Urban Farming and Food Security in Garden

In terms prevalence of urban farming in Garden, the study found that 68% of respondents stated that urban farming was very prevalent in Garden especially vegetable farming while 18% stated that urban farming was not prevalent in Garden with the minority 14% indicating that urban farming was non-existent in the area. This finding was reported by other studies, which showed that urban agriculture is a feature of the food supply in many African cities and has been advocated as a solution to food insecurity among poor households. In Zambia, there is a large literature on urban agriculture, which dates back to the 1980s. Such studies have consistently argued that urban and peri-urban agriculture is all-pervasive in Zambian cities.

According to UCSZ (2008), for example, found that over 85 percent of households in four cities (Lusaka, Kitwe, Mansa and Kasama) had a food garden (Chizuni, 1998). In Lusaka, 40% of households also had a field where they were growing food. Most households were growing vegetables (58%) in their gardens and fields, followed by maize (57%) and fruit (57%) (CSO, 2010). Among poor households (the lowest income tercile), 83% had a food garden and 49% had access to a field.

They were also more likely to grow maize and less likely to grow fruit than better-off households. Around 20% of households sold homegrown maize and these households sold 60% of their produce, suggesting a commercial motive for urban agriculture among some households (Chiwele, 2004). Despite the seemingly widespread practice of urban agriculture in Lusaka, various studies have identified numerous obstacles to its further expansion including unsupportive municipal policy, urban expansion and in-filling, land shortages and, most recently, climate change. Some have argued that the urban poor face additional obstacles that make them far less likely to engage in urban agriculture for home consumption and sale (Crush et'al, 2011). This report focuses on the situation of poor urban households in Lusaka and offers an opportunity to explore this question in greater depth.

5.5 Contribution of Urban Farming Food Security in Garden Township

The study found that 56 percent stated that urban farming did not contribute to urban food security in Garden while 44% stated that urban farming had contributed to urban food security. Therefore, urban farming did not contribute to food security in Garden. This study shows that urban farming has not contributed to food security in Lusaka's Garden Township and maintaining food security at household level is still a challenge. This finding is

echoed by FOA, which contends that maintaining food security at the country level and household level is still a major challenge for many developing countries.

According to the FAO (2014), about 870 million people are estimated to have been undernourished (in terms of dietary energy supply) in the period 2010–2012. This figure represented 12 percent of the global population. The vast majority of these, 852 million live in developing countries, where the prevalence of undernourishment was now estimated at 14.9 percent of the population.

Further although food insecurity has traditionally been associated with rural areas, it is now increasingly recognized as a serious and growing problem in the cities and towns of Sub-Saharan Africa, where urbanization has not been accompanied by concomitant industrialization and economic growth (Crush et'al, 2011).

(Felker, 2012) adds that the policy challenges of ensuring food security in cities and towns characterized by high rates of unemployment and underemployment, informality, overcrowding, deteriorating infrastructure and environmental degradation are formidable. In Zambia, the urban population reached 40% in the 1980s but then stagnated and declined to about 35% by 2000 during a phase of counter-urbanization. Since then, urbanization has resumed its growth trajectory with the urban population doubling between 2000 and 2010. The 2010 Census put the urban population at 39% of Zambia's total population of 13 million or around 5.1 million urban-dwellers (Chizuni, 1994).

Conclusion

The main aim of this study was to investigate the factors influencing household food security in Garden Township of Lusaka District. The study adopted a case study design with a sample size of 100 and targeted residents and households in Garden township. From the sample, the study revealed that found that respondents accounting for 53% where male while 47% were female. Therefore, majority of the respondents were male. Further, the study established that 36% of respondents had a monthly household income of less than K500. This was followed by 24% of respondents whose households was between K500-K900 while 17% of households had incomes of more than K3000. Additionally, the study found that 51% of households were male headed while 49% of households of respondents were female headed. Therefore, it can be deduced that majority of respondents households in Garden township were male headed. Furthermore, respondents were asked if their household was food secure. The study found that 70% of respondents' households were not food secure while 30% of households were food secure. Therefore, it can be deduced that majority of households were food insecure. Additionally, the study found that majority of respondents accounting for 47% had two (2) meals per day. This was followed by 27% of respondents who stated that they had three (3) meals per day while 21% of respondents had one (1) meal per day. Minority 5% had four or more meals per day. Therefore, majority of respondents had two (2) meals per day. The study also found that 81% of the respondents strongly believed that the employment status of head of household had an influence on household food security while 19% did not think the status of head of household has an influence on household food security. Overall, urban household food security in Garden was influenced by several factors mainly household income, marital status, gender and employment status of head of household, household size, climate change, food costs, urbanization, shrinking agricultural lands, fragmented, informal and underdeveloped urban food supply systems were the main factors influencing urban food security. The study found that cost of food was not a factor influencing household food security in Garden. This is evident in the fact that 67% of respondents responded no to the question on whether cost of food production was a major factor

influencing food security while minority 33% viewed it as a factor.

Recommendations

- There is need to conduct a study on the awareness levels of the impact of climate change on urban food security in Lusaka urban as community does not know much about climate yet studies project that Lusaka will be one of the most hit areas by climate change by 2030.
- Government must begin to pay attention to the challenges of urban poverty and food security just like rural food security. This can be done by developing a deliberate urban food security policy and agenda that address factors that influence urban food security such as cost of food production, incomes, fragmented and highly informal and underdeveloped urban food distribution channels etc.
- There is need to begin to encourage urban farming at any level to counter the cost associated with food purchasing in urban areas.
- There is need to accelerate investments in formal education, narrow the urban socio-economic divide, and reduce gender inequities through deliberate policies to increase women's access to and control over economic resources and assets.
- There is also need to develop a deliberate policy to control urban sprawl, urbanization in order to address its associated impact on urban farming and urban agriculture in Zambia's major cities.

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