CONTRIBUTION OF HOMESTEAD GARDNENS TO HOUSEHOLD FOOD SECURITY IN OYE RURAL AREA OF EKITI, NIGERIA.

BY

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17/10AC416

A PROJECT SUBMITTED TO THE DEPARTMENT OF AGRICULTURAL EXTENSION AND RURAL DEVELOPMENT, FACULTY OF AGRICULTURE IN PARTIAL FULFILMENT OF REQUIREMENTS FOR THE AWARD OF BACHELOR OF AGRICULTURE DEGREE, UNIVERSITY OF ILORIN, ILORIN, NIGERIA

SEPTEMBER, 2023.

CERTIFICATION

This is to certify that ISOLA, Oke Mathew an undergraduate of the department of Agricultural Extension and Rural development, with matric number 17/10AC416, has satisfactorily completed the requirements for both course and research work of the Degree of Bachelor in Agriculture (B. Agric) in Agricultural Extension and Rural Development.

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DEDICATION

This project is dedicated to God Almighty, the Father of our Lord Jesus Christ, the father of glory for making this project a success.

ACKNOWLEDGEMENT

I must appreciate the God Almighty, my strength and helper for always coming through for me and giving me the opportunity to embark on this academic programme and by whose favor this work is accomplished. He is the one who has facilitated the completion of this project. I appreciate Him with the whole of my heart.

My special and sincere thanks go to my ever-supportive, accommodating, compassionate, understanding, wonderful and caring supervisor, Dr. L.L Adefalu for his fatherly care, tutelage and advices always. Despite his very busy schedule he still took time to put me through this research work. I cannot quantify the measure of knowledge which I've acquired from you, I appreciate all the knowledge you've imparted me with, I thank God for the privilege of having you as my supervisor, God bless and increase you on all sides in Jesus name.

I must also express my profound gratitude towards all the members of staff of Faculty of Agriculture, Department of Agricultural Extension and Rural development, the Head of the Department in person of Dr. Sidiqat A. Aderinoye and other fatherly and motherly lecturers who made the departmental work force, thanks a lot, God bless you all.

My deepest and sincere gratitude goes to my parents, Mr & Mrs Tunde Isola for everything the Lord has helped me to achieve through their support and guidance, Thank you for everything, the relentless prayers, the emotional, financial and moral support, the sacrifices

made on my behalf, its unquantifiable, I cannot forget your impact in my life. May the Almighty bless and reward you abundantly. I can't but acknowledge my siblings Damilola, Tosin, Shola, Tope and Alaba for their understanding, love and immerse support towards my academic pursuit. You guys are God's gift

to me, I couldn't have asked for better siblings. I love you so much and may God continue to increase you on all sides.

To my friends, you made my memory in Unilorin a beautiful one, you guys are the best, I cherish every memory we've spent together and I pray we met at the top, I love you guys and may God bless everything you lay your hands on.

To all my roommates from 100 to 500 level , staying together has instilled a lot of virtues in me , despite our differences, we were still able to cohabit successfully. I am really grateful, for with you all my days of studies in Unilorin is counted worthwhile, God bless you all.

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ABSTRACT

This study assessed the Contribution of Homestead Gardens in Household Food Security in Oye Rural Area of Ekiti State, Nigeria. The specific objectives of this study were to: describe the socio-economics characteristics of homestead gardeners in the study area, determine the relevance of homestead gardens in the food insecurity struggle, identify the types of crops planted by the gardeners, identify the constraints faced in homestead gardens in the study area.

The study was carried out in Oye Local Government Area of Ekiti State Nigeria, 120 homestead gardeners were the respondents. The use of structured questionnaire was used for data collection.

The data obtained from the field were analysed using Descriptive statistics, Multiple regression analysis and Likert scale type. The descriptive statistics reveal that 62.4% of the respondents were male, reflecting a balanced representation of both sex in homestead gardening activities. Both Men and Women play active roles in these activities, potentially contributing to a more equitable distribution of household food security and responsibility.

The size of the garden and the gardening experience are intertwined factors that contribute to the efficacy of homestead gardening. With 88.8% of respondents having garden sized between 1-2, small scale garden is prevalent, potentially highlighting the need to optimize space utilization.

In conclusion, homestead gardens in Oye Rural Area of Ekiti State, have the potential to bring about positive change by addressing food security, nutritional deficiency, and income generation. To harness this potential effectively, tailored intervention is needed to address the specific challenges faced by gardeners, with a particular focus on education, access to credit, and strategies to mitigate the identified challenges.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Home gardening is the cultivation of a small plot of land in the immediate vicinity of the family's home or within walking distance (Dilrukshi et al, 2013). Mixed cropping system or mixed farming method is used in the home garden. Livestock acts as a supplementary source of protein and revenue for families in a mixed farming system. It provides a cost-effective solution to recycle waste, conserve bio-cultural activities, diversify product offerings, and increase nonmarket value of products and services. Food production for domestic consumption is the primary focus of home gardens (Lulandala, 2010). When compared to subsistence agriculture, home garden animals offer additional benefits by providing income from the sale of a variety of products that will ensure food supply is maintained throughout the year. Today's primary challenges are hunger and poverty. As the world's population grows, the food crisis has worsened, particularly in animal protein, with the number of malnourished people growing by the day. The animals themselves (sheep, goats, pigs, rabbits, poultry, and others) as well as the products obtained from them (meat, milk, cheese, eggs, and dung) can be gotten from home garden. These products are either consumed by members of the household or sold in a marketplace to generate additional income. Homestead farm can be defined as a farm that is located near the house

which is used to produce and raise varieties of food crops and livestock for consumption, income, and environmental sustainability.

Individuals who cultivate or plant crops behind or near to their homes are known as homestead farmers. This is why it's also known as "backyard farming". One of the main reasons for this approach is the ease with which food crops can be obtained. (Enyinda, 2014) further noted that homestead farms are distinct from conventional fields or faraway farms because they are positioned close to the dwellings. Home gardens are of significant issue in terms of food security and are an intrinsic aspect of both rural and urban livelihoods, although their importance is often overlooked. This is especially true in tropical areas like Nigeria, where household gardens has been a way of life (Galhena et al 2013).

According to reports, majority of hungry and malnourished people in emerging towns lives in deplorable conditions, with chronic food insecurity afflicting more than half of the population (World Health Organization. 2019). Economic recession has been blamed for this. Improvements in household food security and nutritional status, as well as greater revenue, are all advantages of homestead agriculture.

Homestead agriculture provides employment, income, and food availability, all of which help to alleviate chronic and emergency food insecurity caused by food supply chain disruptions. It contributes significantly to making food more cheap and providing

emergency food supplies (FAO). Non-farming households are more food secure, have a better and more diverse diet, and eat more vegetables than farming households.

Food security is described as everyone having access to the food they need to live a healthy life at all times (Adebayo and Ojo, 2012). A country is deemed food secure if majority of its citizens has constant access to sufficient quantities and quality of food. It's also the state of affairs when it comes to food production and distribution, as well as how people get their hands on it.

Food insecurity has been highlighted as the leading cause of malnutrition, with poverty being one of the root causes of food insecurity. According to (Kumari, et al 2022), global food production will need to expand by 70% by 2050 and beyond to meet the world's population's average daily calorie needs. This indicates that there is a problem that has to be addressed right now. As a result, one of the options that households can adopt to solve the current problem of hardship and food insecurity is to grow a home garden. This can also assist homes in saving money that would otherwise be spent on purchasing the goods grown in the garden.

Food security is determined by three pillars. There are three of them: food availability, food access, and food consumption (Anderman, et al 2014). (Berry, et al 2015), adds a fourth pillar to the equation, which is the long-term stability of the first three elements of

food security. The World Summit on Food Security believes that availability, access, utilization, and stability are the four pillars of food security.

1.2 Statement of the Research Problem

Nigeria has a high level of food insecurity. According to the 2016 Global Hunger Index, one in every 15 Nigerians (out of a population of over 180 million) goes to bed hungry. The country has a worldwide hunger index of 25.5, indicating that there is considerable hunger in the country. It can be deduced that, while food is available, the source from which it is created or maintained may be hazardous to one's health. As a result, food production must take health and safety into account. In essence, a country is called food secure when food is not only available in sufficient quantities for the population to live comfortably, but also when food intake offers no health risk to citizens.

As a result, this research will help to increase household welfare, food security and backyard gardening in Ekiti State.

1.3 Research Questions

Therefore, in accordance with the foregoing, this study addressed the following research questions.

i. What are the socio-economic characteristics of the gardeners in the study area?
ii. What is the relevance of homestead Gardens in the food insecurity struggle?

iii. What is the type of crops planted by the gardeners and the quantity of output obtained from homestead gardens in the study area?

i. What are the constraints faced in homestead gardens?

1.4 Objectives of the Study

The main objective of this study was to analysis the contribution of home gardens to food security.

The specific objectives of the research are to:

- determine the socio-economic characteristics of the gardeners;
- determine the relevance of homestead gardens in the food insecurity struggle;
- identify the types of crops planted by the gardeners and the quantity of output obtained from homestead gardens; and
- identify the constraints faced in homestead gardens.

1.5 Justification of the Study

Considering the effort of the government in the struggle for food security, there is need to know how the homestead gardens are performing in terms of contributing to food security.

Therefore, the result of this provided evidence to the contribution of homestead gardens to food security by providing quick and direct access to different foods that can be

harvested, prepared and eaten by family members on daily basis as it served both as a source of income generation and food provision.

These findings contributed towards the development of short- and long-term policy for eradication of extreme poverty. It also added literature to the analysis of homestead gardens. This research helped in enlightening people on the importance and contribution of homestead gardens in the food security struggle.

1.6 Hypothesis

H_0; There is no significant relationship between socio economic characteristics and relevance of homestead gardens.

CHAPTER TWO

LITERATURE REVIEW

2.1 Definition of Homestead Garden

Home gardens are little plots of land where vegetables are grown. Planting takes place on a regular basis in this garden. Its primary goal is to produce a steady supply of nutritious, low-cost, high-quality veggies for home use. It encompasses the production of vegetables for personal use. It is a crucial, but inexperienced, method of ensuring a steady supply of fresh veggies for the family table. Home garden yields contribute to food nutrition and may even generate additional revenue. Home gardens, also known as household gardens, are a small-scale production system that provides plant and animal consumption as well as utilitarian items that are not readily available in retail marketplaces, field cultivation, hunting, gathering, fishing, or wage earning.

2.2 Concept of Home Garden

Home garden is an approach that has been widely adopted and practiced by diverse groups with limited resources and institutional assistance in a variety of settings. It is a small-scale production system that provides food for humans and animals, as well as utilitarian objects (Dilrukshi et al, 2013). Home gardens, according to Akinbobola & Awosika, (2022), are a mixed cropping system that includes vegetables, fruits, plantain crops, spices, herbs, ornamental and medicinal plants, as well as livestock that can be used as a supplementary

source of food and income. Around homesteads, the term "home garden" refers to the personal cultivation of a variety of crops, sometimes in conjunction with domestic animals. They also stated that home-grown vegetables, fruits, and herbs are primarily grown for domestic consumption, either completely or partially. Home gardens are frequently employed as a cure to reduce hunger and malnutrition in the face of global food insecurity, as evidenced by many literatures. For security, convenience, and extra care, house gardens are frequently positioned adjacent to buildings or homes. Low initial investment and basic technology distinguish them. Home gardens has traditionally featured a wide variety of perennial and semi-perennial crops, trees, and shrubs that are well adapted to local microclimates and maintained with few commercial inputs. Families value home gardens because they give revenue and sustenance throughout the year from the variety of vegetables grown there, which are collected at various seasons. Nigeria has the highest number of stunted children in Sub-Saharan Africa and the second highest number of malnourished children in the world, and the numbers aren't improving. This is despite the fact that the country's various nutrition interventions are primarily focused on food fortification and supplementation, with agricultural interventions such as integrated homestead gardens receiving very little attention. It is recognized that one of the two immediate causes of malnutrition are poor diet which in Nigeria is mostly caused by food insecurity. Integrated homestead garden could serve as an approach to achieve household food security. This is a type of farming in which crops and cattle are appropriately managed

within the homestead to enable year-round access to farm produce with minimal resource input. Household essentials such as fruits, vegetables, legumes, and other staples, as well as meat and eggs, can provide a year-round supply of healthful food, handmade beverages, and snacks. One of the most important advantages of an integrated homestead garden as a nutrition-sensitive intervention is that it reaches the most vulnerable people in society: the rural poor, women, and children. The government must go from political commitments to action by adopting policies, allocating finances, and supporting nutrition education in order to successfully use homestead gardens as a nutrition intervention. Muroyiwa, & Ts' elisang (2021).

2.3 Characteristics of Home Garden

Home garden can be characterized as follows;

- A home garden is located near the residence
- A home garden contains a high diversity of plants
- Home gardens are a production system that the poor can easily enter at some level
- A home garden Production is supplementary rather than a main source of family consumption and income
- A home garden occupies a small area.

2.4 Benefits of Home Garden

- Improved food security

- Increased availability of food and better nutrition through food diversity
- Income and enhanced rural employment through additional or off-season production
- Decreased risk through diversification;
- Environmental benefits from recycling water and waste nutrients, controlling shade, dust and erosion, and maintaining or increasing local biodiversity.

2.4.1 CATEGORIZING THE BENEFITS OF HOME GARDEN

The benefits can be categorized into the following;

❖ **Social Benefits**

✓ Improved health

Plants are employed as biological pesticides to protect crops from diseases and pest infestations, and they are a significant source of medication for humans and livestock. In home gardens all throughout the world, herbs and medicinal plants are planted. People use herbal and medicinal plants to treat a variety of ailments and diseases, as well as to improve their overall health.

✓ Enhancing food and nutritional security

The most basic social advantage of home gardens is they directly contribute to food security by boosting food availability, accessibility and use. In both rural and urban areas,

home gardens are maintained to provide ready access to fresh plant and animal food sources. Foods grown in the home contribute significantly to the family's energy and nutrient needs on a regular basis.

- ✓ Gender equality and balance

Women plays a major role in food production in many cultures, and they are enthusiastic participants in home gardening activities. While women make a significant contribution to household food production, it is inaccurate to assume that home gardening is primarily a female pastime. Women's involvement in home gardening varies by culture and includes activities such as land preparation, planting, weeding, harvesting and marketing.

❖ **Economic Benefits**

- Income generation and improved livelihood

Income generated from the sale of home gardens fruits, vegetables, and livestock products allowed households to use the proceeds to purchase additional food items as well as for savings, education and others.

- Improved household economic welfare

Home gardens products may be sold to earn additional income. Gardening activities can be developed into a small cottage industry. Furthermore, the direct earnings from the sale

of home garden products and the savings from consuming home-grown food products can lead to more disposal income that can be used for other domestic purposes.

- **Environmental Benefits**

Home gardening is a multi-cropping system as well as a type of integrated farming system because crop farming and animal husbandry are both conducted on the same piece of land. In soil, nutrient recycling takes place. Food is produced by converting solar energy into photosynthetic energy, which is consumed by both animals and humans. Recycling aids in the reduction of soil erosion and the formation of a crop canopy layer, which reduces the velocity of water falling to the soil and so reduces split erosion and leaching.

- **Soil conditioning and conservation benefit.**

The soil profile of the land use could have been disrupted, continuous home gardening practices strengthen the soil structure and transform infertile soil into fruitful soil.

2.5 Constraints in Home Gardening and Ways out

The followings are some of the limitations that have been observed in home gardening.

- ✓ Weeds competing with growing crops
- ✓ Insect pests and diseases throughout the planting season
- ✓ Capital and labour shortages, which are also reliant on family members.
- ✓ Damages caused by inclement weather

- ✓ Information and extension/advisory services are unavailable.

Ways Out

Demand for timely information, education, and training for growers. Neighbours and other farmers, on the other hand, have been identified as the most dominant source of information for home gardening.

2.6 Integrated Homestead Gardens

A household farming system in which both animals and crops are cultivated in a well-managed manner to enable year-round access to farm produce with little resource input is known as an integrated homestead garden. Traditional gardens comprise a diverse range of annual, perennial, and semi-perennial crops, shrubs, and trees that have been properly adapted to microclimatic fluctuations and maintained with minimal agricultural inputs. Crops are sometimes kept together with small livestock such as chickens, goats, sheep, and pigs. The average size of a homestead garden is smaller than the household's arable land. Cropping fields are usually between 0.2 and 0.5 hectares in size. The practice of cultivating a home garden is an age-old one all across the world, but it receives the least attention and is one of the least understood of all agricultural techniques. Home gardens are customarily maintained in Ekiti State for food security, medical purposes, and money generating. In Nigeria, there are several different forms of traditional homestead agricultural techniques. Fruit trees growing alongside maize, yam, pumpkin, and beans is an age-old practice in the

southern region of the country. The Yorubas think that planting herbaceous plants with tree crops is a good way to make efficient use of scarce land while also conserving soil nutrients. Having gardens with tree crops, bushes, and plants, as well as cattle, all in the same farmhouse managed by family labour, is also fairly frequent. Cassava, maize, yam, fluted pumpkin, bitter leaves, water leaves, beans, curry, smell leaves, banana, and plantain, as well as mango, guava, orange, pawpaw, and palm trees, are all common crops in home gardens. It's a garden where you can find a little bit of everything, from crops to medicinal herbs. These homes also house small animals such as chickens, goats, sheep, and pigs. Traditional farms have been altered to offer food all year, and gardens serve as the family's primary source of nutrition throughout the year, even during the lean months of March, April, and May. Many of these homestead garden crops are higher in basic amino acids than the basic food things, so they not only give food during the lean times, but they also provide part of the protein, vitamins, and minerals that people in this region require. Growers and policymakers do not consider these gardens as a way to relieve the state's food security responsibility. It is fairly usual for homestead gardeners to give their gardens at home relatively little attention while devoting the majority of their time to larger farms producing cash crops. In addition, some rural households do not eat the tiny cattle they raise and instead sell them at markets for profit due to a lack of good nutrition information. Homestead gardens in Nigeria have mostly remained traditional due to a lack of sufficient attention to their development, thereby failing to meet nutritional needs. FAO and other

scholars have long taught that an integrated garden is the most sustainable type of gardening practice. This is a type of garden in which both crops and cattle are well-managed to provide year-round access to farm food with minimal resource input. Crops and animals have a symbiotic relationship in integrated gardening with animal wastes serving as manure and/or humus to increase soil health and nutritional density of crops, food leftovers and crop residue being transformed to animal feed. A well-managed integrated homestead garden produces a wide variety of vegetables all year. In such gardens, dark leafy green vegetables such fluted pumpkin, Amaratus species, water leaves, and bitter leaves are grown. Other vegetables that could be grown include okro, carrot, cucumber, cabbage, melon, green beans, tomatoes, and peppers. Bio-fortified crops are also significant in this garden. Because vitamin A deficiency is linked to the mortality of over 80,000 children in Nigeria each year, orange fleshed sweet potatoes, vitamin A maize, and yellow fleshed cassava are encouraged over conventional, less nutrient-dense cassava. Fruit trees including papaya, mango, orange, citrus grape, and banana, as well as other fruits like watermelon and pineapple, can be used as garden fences in this type of garden. Small animals should be maintained in the homestead to enhance household consumption of animal protein as well as increase intake of foods rich in B vitamins, iron, and zinc, as these minerals are in short supply in Nigeria. Pigs and poultry, particularly layers, are encouraged due to their rapid development rate, inexpensive feed input, consistent supply

of meat and eggs, and high income-generating capabilities. Goats, sheep, and rabbits are examples of other livestock that can be kept.

2.7 Food Security

2.7.1 Food Security Concept

Food security is described as everyone having access to the food they need to live a healthy life at all times (Ojo and Adebayo, 2012). Food must be available to individuals to the extent that it meets some acceptable level of nutritional standards in terms of all the classes of food that the body requires, according to the definition. According to Ojo and Adebayo (2012), while food may be available, the source from which it is produced or maintained may be dangerous to one's health. In the food production process, health and safety become increasingly vital.

2.7.2 Food Access

Food access refers to the cost of food and how it is distributed, as well as personal and household preferences. According to the United Nations, the most common cause of hunger and malnutrition is a lack of access to available food, which is mainly caused by poverty. (Ecker and Breisinger, 2012), Who also believe that this will restrict access to food and make an individual or household more sensitive to price fluctuations in food. Whether a family has enough money to buy food at current prices or enough land and other resources to grow their own food is determined by their financial situation.

2.7.3. Food Utilization

After households obtains food, a number of factors influence the quantity and quality of food that reaches its members. In order to attain food security, the food consumed must be safe and sufficient to meet each individual's physiological needs. Food safety has an impact on food usage, and it can be influenced by how food is prepared, processed, and cooked in the community and at home. Food selection is influenced by knowledge of the household's nutritional needs. Access to healthcare is another driver of food consumption, as people's health influences how food is metabolized. Intestinal parasites, for example, takes nutrients from the body and reduce dietary consumption. Sanitation can also help to reduce the emergence and spread of diseases that have a negative impact on food consumption. Food usage and security can be improved with understanding of nutrition and food preparation. This is because education encourages individuals to be accountable and promotes awareness, both of which contribute to food security (Ecker and Breisinger, 2012).

2.8 Ekiti State Food Security

The majority of the population lives in rural areas, where farming is their primary occupation and source of income. It is a homogeneous state that, until recently, was the primary producer of agricultural products for Southwestern Nigerian cities. Ekiti is also one of Nigeria's largest cocoa producers (Odeyemi, 2014).

According to statistics, 35.8% of the population was food insecure in 2010. In 2015, the situation worsened when UNDP assessments revealed that the state's percentage of food poverty had grown to 51.1 percent (Crush, J., & Fayne, B. (2010). This is unfortunate since, despite being known as the "food basket of South Western Nigeria," the state's food situation is poor. This could be due to persistent food insecurity in Southwestern Nigeria. This could be due to two factors: first, a lack of interest in agriculture despite the state's fertile soil. Two, food insecurity as a result of prior governments' continual denial of rights in terms of budget distribution. Having enough food has always been a major challenge for governments at all levels, as the problem has eluded resolution. However, evidence suggests that the government has failed to play its part in the food security struggle. Youths have abandoned the industry, which was formerly the economy's mainstay and the largest employer of labour, in favour of positions in corporate offices. The administration of Ekiti State launched the Youth Commercial Agriculture Development (Y-CAD) program in 2012 to engage youths in agriculture (Oloba,& Amusan, 2019). With agriculture on the state's side, the sector will continue to play a significant role in the state's fortunes. The Y-CAD scheme encouraged more young people to work in agriculture, and data from the first three months showed that unemployment and food insecurity rates have decreased (Oloba,& Amusan, 2019). However, the plan did not continue long due to a lack of proper maintenance culture and commitment from the government, and the scheme's goal was never met. According to the data, food poverty in the state increased from 35.8% to 43.2

percent at the end of 2013, despite multiple interventions by the administration, as well as federal and external entities (Von Grebmer, et al 2017).

2.9 The Contribution of Homestead Garden to Food Security

When land and water are not a major constraint, a well-developed home garden has the ability to provide most of the non-staple foods that a family requires throughout the year, including roots and tubers, vegetables and fruits, legumes, herbs and spices, and meat (Charrondière, et al 2013). In terms of nutrition, roots and tubers are high in calories, whereas legumes are high in protein, fat, iron, and vitamins. Essential vitamins and minerals, including foliate and vitamins A, E, and C, are found in green leafy vegetables and yellow or orange-colored fruits. Fruits and vegetables are essential components of a balanced diet and should be included in every meal. Protein, fat, and micronutrients, particularly iron and zinc, are abundant in beef, chicken, and fish. They're especially crucial in children's diets to help them grow and develop normally. Any family that engages in or practices home gardening will have a healthy family since they will have more direct access to nutritional foods, so addressing the issue of malnutrition associated with food insecurity. For families who want to be financially secure, a home garden is a significant source of additional income. The whole value of garden production, including crop surpluses and animal items sold.

2.10 Homestead Gardens as a Means to Reduce Food Insecurity

Homestead gardens are becoming more widely acknowledged as a viable solution to food insecurity. They have helped feed economically disadvantaged families and communities. They continue to provide fresh food and opportunities for community contact and networking in order to increase access to social security and economic prospects. Members of the community garden have the opportunity to communicate with one another and share their knowledge, as the majority of this knowledge is indigenous (Datta, R. 2019). Homestead and community food gardens are important tools for reducing poverty and food insecurity. These initiatives can be viewed as a long-term strategy that works in conjunction with supplements and food fortification programs. Food gardens can give low-income communities and households with direct access to nutritious veggies that aren't always readily available or affordable. Gardening in the home has a lot of potential for increasing household food security and reducing micronutrient deficits. Gardening may help with food security in a variety of ways, the most important of which are;

- Provide direct access to a wide range of nutrient-dense foods.
- Increased purchasing power as a result of food bill savings and money from garden product sales, and
- Back-up food supply during seasonal food shortages.

In both rural and urban areas, home gardens are maintained to provide ready access to fresh plant and animal food sources. Because of the scarcity of land, urban home garden systems are a little different (Jayavanan et al, 2014).

However, home gardening is one option to provide food security for the poor, and it should be addressed as part of a larger national food security strategy (Adekunle, 2013).

CHAPTER THREE

METHODOLOGY

3.1 The Study Area

This study was carried out in Ekiti State, Nigeria. The state lies in the rain forest zone of Nigeria. Ekiti State is bounded in the north by Kwara State, west by Osun State, south by Ondo state and in the east by Kogi State. Ekiti State lies between Latitude $7^0 40^1$N $5^0 15^1$E and longitude 7.667^0N 5.250^0E occupying 6,353km^2 (2,453sq m) of land and ranked 31st of the 36 states in the federal republic in terms of land mass. The State has 16 local councils. The state is credited for having high level of educated citizens in the country as education is highly regarded and prioritized in the state. There are two distinct seasons which are wet and dry seasons. The dry season lasts from November to March. The area is blessed with 12 diurnal sunshine hours and a moderate year-round temperature of 25^0 C. Annual rainfall averages at 200mm. A large percentage of the inhabitants of the state engage in agriculture. The major food crops include, rice, maize, yam, cocoyam, cassava, pepper, tomatoes and varieties. The main cash crops are cocoa, kola nut, oil palm. Other tree crops are citrus fruits, coconut, mango, sugar cane, guava and pineapple. As the state is within the ecological belt known for abundant forest resources the state produces high quality woods which are raw materials for wood-based industries within and outside the state. Ekiti State is home to a number of homestead garden farmers.

Homestead gardens' keeping is prominent in the state with arable crops, vegetables and spices among the commonly cultivated, due to the recurrent household consumption.

3.2 Study Population

The population for the study were comprised of homestead garden keepers in Oye local government area in Ekiti State, Nigeria.

3.3 Sampling Procedure and Sampling size

A three-stage sampling technique was used to select respondents for the study. The first stage involves purposive selection of Oye Local government area. This area is known to have more homestead gardeners. Second stage involve random selection of 4 communities in the selected Local government area. Final stage entails selection of 30 respondents from each community to give a total of 120 homestead gardeners as respondents. The use of structured questionnaire will be put in place for data collection.

3.4 Instrument for Collection of Data

The data for the study was obtained using primary source. The primary data was obtained through structured questionnaire. The questionnaires were divided into sections A to D.

3.5 Validity and Reliability of the Instrument

The test instrument (Questionnaire) was subjected to examination by supervisor in Agricultural Extension and Rural Development of the University of Ilorin to ensure its' validity.

3.6 Analytical Techniques

Data collected were subjected to descriptive and inferential statistical methods. Descriptive statistics such as frequency distribution, averages, percentages and likert scale will be used to determine the socioeconomic characteristics of the gardeners, relevance of homestead gardens in the food insecurity struggle and to know the types of crop planted by the gardeners in the study area.

Regression Model Specification

The regression analysis model is as follows: $\ln(Yi)=\beta 0+\Sigma i\beta i\ln Xij + \varepsilon i$ …….(1)

Then, εi = a "composed" error term. The error term (εi) is the essential component that distinguishes the regression model from other models (Chavas *et .al,* 2005). The error term (εi) can be rewritten as: $\varepsilon i=vi - ui$ …….(2)

When εi is substituted by $vi - ui$, then equation (1) is rewritten as: $\ln(Yi)=\beta 0+\Sigma i\beta i\ln Xij + vi - ui$ …(3)

Where ln= is natural logarithm,

Yi = output of the gardener,

$\beta 0$ = Constant,

βi = Coefficient,

Xij = input used by farmer

εi = composite error term

A Cobb-Douglas function was fitted to the stochastic frontier production function and estimated. This functional form has been consistently used in related efficiency studies. A more flexible form like the translog function can as well be used. However, functional forms have limited effect on empirical efficiency measurement. The specified production function;

$$\text{Ln } Q = \text{Ln}\alpha 0X1 + \alpha 1\text{Ln}X1 + \alpha\ 2\text{Ln } X2 + \alpha\ 3\text{Ln } X3 + \alpha\ 4\text{Ln } X4 + \alpha\ 5\text{Ln}X5 + \varepsilon i \quad \ldots\ldots (4)$$

Q = Output (kg) per gardener

X1= Land allocated to garden (ha)

X2= Amount of fertilizers used

X3= Amount of seed planted

X4= Amount of pesticides

X5= Amount of herbicides

X6 = Number of irrigations/ha/season Ln= Natural logarithm α0 – α5 = parameters to be estimated εi= composite error term defined as V-U in equation (2)

Some farm/farmers characteristics were incorporated into the frontier model with the belief that they have a direct influence on efficiency. The computer programme Frontier 4.1 developed by Coelli was used in the estimation. The efficiency function was specified as;

T.E = Õ0 + Õ 1Z1 + Õ 2Z2 + Õ3Z3 + Õ4Z4 + Õ5Z5 +

Õ6Z6 + Õ7Z7 + Õ8Z8 + Õ 9Z9 + e …….. (5)

Where;

T.E = Technical efficiency

Z1 = Year of Schooling (Education)

Z2 = Age of farmers in years

Z3 = Farm size in hectares

Z4 = Farming experience in years

Z5 = Household size (numbers)

Z6 = Membership of cooperative/farmers

Organization

Z7 = Extension contact (dummy)

Z8 = Credit access (dummy)

Z9 = Sex (dummy)

CHAPTER FOUR

RESULTS AND DISCUSSION

This chapter reveals the outcome and analysis of the study in accordance with the define objective. Socio-economic characteristics traits of rice farmer in the study area were depicted using descriptive statistics such as frequency distribution, mean, standard deviation, and percentage.

4.1 Socioeconomic Characteristics of Respondents

Table 2 provides information about the demographic and socioeconomic attributes of 117 respondents in a research survey.

Table 1: Socio economic characteristics of the respondents

Variables	Frequency	Percentage	Mean	Standard Deviation
Sex				
Male	73	62.4		
Female	44	37.6		
Age				
20-30	23	20.0	39years	9.309
31-40	41	35.7		
41-50	44	38.3		
51-60	7	6.1		
>60	1	0.8		
Marital Status				
Single	21	17.9		
Married	88	75.2		
Divorced	2	1.7		
Widow/Widower	6	5.1		
Household size				
1-5	103	88.8	5	1.48
6-10	13	11.2		
Highest education level attained				
No formal education	1	0.9		
Primary	26	22.2		
Secondary	30	25.6		
Tertiary	28	23.9		
Primary Occupation				
Farming	42	35.9		
Others	74	63.2		
Monthly Income				
10000-20000	23	19.8	₦35,213.68	16406.385
20100-30000	37	31.9		
30100-40000	18	15.5		
40100-50000	25	21.6		

50100-60000	6		5.2		
60100-70000	7		6.0		
70000 and above	23		19.8		
Size of garden					
1-2	103		88.8	2years	0.804
3-4	13		11.2		
Gardening experience					
1-5	63		53.8	6years	4.306
6-10	38		32.5		
11-20	16		13.7		
Access to credit					
Yes	27	23.1			
Land ownership	57		48.7		
Inheritance	18		15.4		
Lease	42		35.9		
Purchase	57		48.7		

Source: Filed survey, 2023

The gender distribution reveals that 62.4% of the respondents are male, reflecting a relatively balanced representation of both sexes. This suggests that both men and women play active roles in homestead gardening activities, potentially contributing to a more equitable distribution of household food security responsibilities. However, with 37.6% being female, there might still be gender-specific considerations that need to be addressed to ensure that women's contributions to food security are adequately recognized and supported.

The mean age of the respondents in the study is approximately 39 years. This age range often represents a period of prime productivity and active engagement. The fact that the mean age aligns with this demographic suggests that those involved in homestead

gardening are likely to be in a stage of life where they have the energy and capacity to actively participate in agricultural and gardening activities. This could lead to a more efficient and effective cultivation process, potentially contributing to increased food production within households. Additionally, individuals in this age group might have acquired a certain level of experience and knowledge that could positively impact the success of their gardening endeavors.

The marital status of the respondents reveals that a considerable percentage (75.2%) are married. This could imply that homestead gardening is often a family-based endeavor, potentially leading to increased collaboration and shared responsibilities within households. Single individuals (17.9%) might be relying more on personal efforts, while widows and widowers (5.1%) could find homestead gardening to be a valuable source of both sustenance and income.

Household size has a direct bearing on food security, with 88.8% of respondents having a household size of 1-5 members. This suggests that a majority of participants are dealing with relatively smaller households, possibly leading to easier management of resources and distribution of produce. On the other hand, the remaining 11.2% of households with 6-10 members might face greater challenges in achieving food security, potentially indicating the need for additional support and resources for larger households.

The education level attained by respondents spans a wide range, with 25.6% having secondary education and 23.9% having tertiary education. This distribution highlights the potential for varied levels of awareness and knowledge about sustainable gardening practices, which could influence the efficacy of homestead gardens in ensuring long-term food security.

The distribution of primary occupations is noteworthy, with 35.9% engaged in farming. This finding suggests a strong link between farming and homestead gardening, potentially indicating that respondents with agricultural backgrounds have an inherent advantage in implementing effective gardening practices. However, the substantial proportion (63.2%) engaged in other occupations highlights the diversification of income sources, indicating that homestead gardening is not limited to a specific occupational group and has the potential to benefit a wide range of individuals.

The income distribution indicates that the majority of respondents earn between 10,000-50,000 Naira, with the mean income being approximately 35,213.68 Naira. This implies that a significant portion of the population relies on relatively modest incomes, further underscoring the importance of homestead gardens in supplementing household food security. Moreover, the presence of respondents earning 70,000 Naira and above suggests a potential for leveraging higher incomes to invest in gardening practices and potentially expand food production capabilities.

The size of the garden and gardening experience are intertwined factors that contribute to the efficacy of homestead gardening. With 88.8% of respondents having gardens sized between 1-2, it appears that smaller-scale gardening is prevalent. This could have implications for the diversity and quantity of crops produced, potentially highlighting the need to optimize space utilization. Additionally, the mean gardening experience of approximately 6 years underscores the importance of cumulative knowledge and skills in successful gardening. Respondents with longer gardening experience might have honed their practices, leading to improved food security outcomes.

The distribution of land ownership among the respondents in the study provides valuable insights into the land tenure dynamics that influence homestead gardening practices in the the study area. The findings indicate that 48.7% of the respondents own land. This ownership rate reflects a significant portion of participants who have secure land tenure, which can play a crucial role in promoting long-term and sustainable gardening practices. Individuals who own land might have a vested interest in investing time, effort, and resources into developing and maintaining productive homestead gardens, which, in turn, could enhance household food security outcomes.

The sources of land ownership further contribute to the complexity of the land tenure system. Notably, 15.4% of respondents inherited land, emphasizing the significance of traditional practices and cultural factors in shaping land ownership patterns. This suggests

that land ownership might not solely be a transactional process but could have historical and intergenerational implications. Additionally, the prevalence of leased land (35.9%) and purchased land (48.7%) highlights the diversity of ways in which individuals access land for gardening. Leasing might allow for more flexible arrangements, while land purchases could indicate a deeper commitment to establishing sustainable food production spaces.

The implications of these land ownership patterns are multifaceted. Secure land ownership, whether through inheritance, leasing, or purchase, can foster a sense of ownership and responsibility among individuals engaged in homestead gardening. It can motivate individuals to invest in soil improvement, infrastructure development, and the cultivation of diverse crops.

Tabe:2 Relevance of homestead gardens

Statements	SD F(%)	D F(%)	A F(%)	SA F(%)	Mean Score	Rank
Availability of fresh products for local consumption	3(2.6)	18(15.4)	64(54.7)	32(27.4)	3.07	1st
Reduces the risk of production failure	0(0.0)	27(23.1)	65(55.6)	25(21.4)	2.98	2nd
Enable year-round production of different products	3(2.6)	32(27.4)	53(45.3)	29(21.8)	2.92	3rd
Produce supplementary staple crops	2(1.7)	22(18.8)	80(68.4)	13(11.1)	2.89	4th
Sources of income for several families	4(3.4)	26(22.2)	67(57.3)	20(11.1)	2.88	5th
Trade in homestead garden products strengthens family relationships	6(5.1)	28(23.9)	59(50.4)	24(20.5)	2.86.	6th
Buffer households during times of stress	1(0.9)	29(24.8)	73(62.4)	14(12.0	2.85	7th
Home-garden produce serves as gift to neighbors and relatives	7(6.0)	25(21.4)	65(55.6)	20(17.1)	2.84	8th
Few plant products from home-gardens are sold	1(0.9)	40(34.2)	55(47.0)	21(17.9)	2.82	9th

Source: Field survey, 2023

On the other hand, individuals with less secure land tenure might face challenges in making long-term investments in their gardens.

SA = strongly agree, A = Agree, D = Disagree, SD = Strongly disagree

The assessment of the relevance of homestead gardens among respondents provides a comprehensive understanding of their multifaceted contributions to household food security, economic empowerment, and social cohesion. The range of responses, from Strongly Disagree to Strongly Agree, illuminates various dimensions of the impact of homestead gardens on participants' lives. At the forefront, the agreement that homestead gardens ensure the availability of fresh products for local consumption (mean score: 3.07) underscores their potential in addressing nutritional deficiencies, enhancing health, and improving overall well-being. Following closely, the recognition of homestead gardens in reducing the risk of production failure (mean score: 2.98) carries implications for bolstering food security through diversification and resilience-building. Similarly, the acknowledgment that these gardens enable year-round production of different products (mean score: 2.92) underscores their role in ensuring a consistent food supply, vital for sustenance during lean periods. The perceived capacity of homestead gardens to produce supplementary staple crops (mean score: 2.89) suggests their importance in augmenting dietary staples and reducing dependence on external sources. Notably, respondents' agreement that homestead gardens serve as sources of income for several families (mean score: 2.88) highlights their role in economic empowerment and livelihood enhancement, particularly for vulnerable households. Furthermore, the belief that trade in garden products

strengthens family relationships (mean score: 2.86) emphasizes their potential in not only economic but also social spheres, encouraging community bonding. The understanding that homestead gardens buffer households during times of stress (mean score: 2.85) signifies their pivotal role in ensuring resilience and food security during challenging circumstances. The perception that garden produce serves as gifts to neighbours and relatives (mean score: 2.84) underscores their communal aspect, fostering reciprocity and support within the community. Lastly, the recognition that few garden products are sold (mean score: 2.82) suggests that while commercialization might not be a primary focus, the core significance lies in safeguarding household consumption and nutritional security. These findings collectively emphasize the holistic potential of homestead gardens as catalysts for positive change, urging tailored interventions that harness their diverse benefits to improve the livelihoods and food security of households in the Oye rural area.

4.2 Types of Crops planted by gardeners

Table 2 shows the array of crops cultivated by gardeners in the Oye rural area of Ekiti State, Nigeria, offers a glimpse into the diverse agricultural landscape of homestead gardens

Table 3: Distribution of Respondents by Types of Crops planted by gardeners

Crops	Frequency	Percentage
Oranges	98	83.8
Mangoes	72	61.5
Cucumber	39	33.3
Carrots	20	17.1
Cabbage	15	12.8
Guava	62	53.0
Pumpkin	21	17.9
Tomatoes	102	87.2
Chili pepper	68	58.1
Garden egg	35	29.9
Amaranth	54	46.2
Water melon	27	23.1

Source: Field survey, 2023

The array of crops cultivated by gardeners in the Oye rural area of Ekiti State, Nigeria, offers a glimpse into the diverse agricultural landscape of homestead gardens. Based on the frequency and percentage distribution, it's evident that oranges take the lead, being grown by 83.8% of gardeners, highlighting their significance as a popular and potentially

nutritional fruit choice. Mangoes follow closely at 61.5%, underlining their prominence in providing both nourishment and economic value. Cucumber's cultivation at 33.3% signifies its role in enhancing dietary diversity and potentially serving as a source of income. While less common, the cultivation of carrots (17.1%) and cabbage (12.8%) emphasizes the attention given to nutrient-rich vegetables. Guava's cultivation by 53.0% of gardeners highlights its contribution to essential vitamins and minerals. Meanwhile, the prevalence of tomatoes (87.2%), chili pepper (58.1%), and garden egg (29.9%) underscores the value of diverse vegetables in catering to household preferences and nutritional needs. Amarant's presence among 46.2% of gardens emphasizes the significance of leafy greens. Lastly, watermelon's cultivation at 23.1% demonstrates a preference for refreshing fruits. This diversity in crops underscores the potential of homestead gardens to holistically address food security, nutritional requirements, and potential income generation, reinforcing their role as vital contributors to sustainable livelihoods within the community.

4.3 Constraints faced in home stead gardens

The examination of constraints encountered by homestead gardeners in the Oye rural area provides a comprehensive understanding of the challenges that impact the potential of these gardens to enhance household food security. Through the utilization of mean scores and categories such as "Not severe," "Severe," and "Very severe," the severity of each constraint is elucidated, offering a nuanced view of their impact.

Table4: Distribution of Constraints faced in home stead gardens by Respondents

Constraints	Not severe F(%)	Severe F(%)	Very severe F(%)	Mean score	Rank
Destruction by animals	19(16.2)	54(46.2)	44(37.6)	2.21	1st
Weed infestation	11(9.4)	73(62.4)	33(28.2)	2.19	2nd
Insect attack	5(4.3)	88(75.2)	24(20.5)	2.16	3rd
Disease infestation	17(14.5)	71(60.7)	29(24.8)	2.10	4th
Drought	40(34.2)	49(41.9)	28(28.9)	1.91	5th
Lack of planting materials	40(34.2)	49(41.9)	28(23.9)	1.90	6th
Pilfering	36(30.8)	69(59.0)	12(10.3)	1.79	7th

Source: Field survey, 2023

"Destruction by animals" takes precedence as the most severe challenge, with a mean score of 2.21, underlining the substantial damage caused by animal intrusion. This implies an urgent need for protective measures to safeguard crops from wildlife threats. "Weed infestation" closely follows with a mean score of 2.19, emphasizing the serious impact of weeds on garden productivity. Effective weed management practices become imperative to curtail this challenge and ensure optimal yields. Ranking third, "Insect attack" carries a mean score of 2.16, showcasing the pervasive influence of pests on gardening efforts. Integrated pest management strategies are crucial to mitigate this constraint and prevent substantial yield losses. "Disease infestation," ranked fourth with a mean score of 2.10, underscores the vulnerability of plants to diseases that can decimate harvests. This necessitates proactive disease prevention and control measures. The fifth-ranked challenge, "Drought," with a mean score of 1.91, signifies the need to address water scarcity through efficient irrigation techniques and water conservation practices. "Lack of planting materials," ranking sixth with a mean score of 1.90, underscores the significance of access to quality planting resources. The prevalence of this constraint signifies potential limitations in garden establishment and expansion, necessitating initiatives to ensure the availability of diverse and suitable planting materials. The seventh-ranked constraint, "Pilfering," with a mean score of 1.79, highlights the impact of theft on garden productivity. The substantial severity suggests that security concerns can impede the benefits of

homestead gardens, underscoring the need for community-level measures to protect the produce and ensure its intended contribution to household food security.

4.4 Hypothesis Testing

Table 5: Linear regression showing the relationship between socio economic characteristics and constraints faced in homestead gardens

Predictors	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	19.323	2.411		8.015	.000
Age	-.087	.064	-.234	-1.367	.174
Gender	.379	.603	.053	.628	.531
Marital Status	.703	.743	.128	.946	.346
Household size	.359	.223	.153	1.607	.111
Education	1.179	.299	.381	3.944	.000
Occupation	.553	.527	.084	1.051	.296
Income	6.961E-006	.000	.035	.394	.695
Garden Size	.592	.412	.137	1.438	.153
Years of experience	.333	.074	.413	4.475	.000
Access to credit	-1.880	.638	-.229	-2.948	.004
Land Ownership	-.158	.313	-.042	-.505	.615

Source: SPSS output 2023, R^2 = .467, Adjusted R square= .411, F = 8.360

In the linear regression analysis, the significant variables emerge as key determinants of the relationship between socio-economic characteristics and constraints faced by homestead gardeners in the Oye rural area. Notably, education stands out as a significant factor ($B = 1.179$, $t = 3.944$, $p < .001$), where higher education levels correspond to heightened constraints. Additionally, "Years of experience" in gardening significantly influences constraints ($B = 0.333$, $t = 4.475$, $p < .001$), indicating that gardeners with more experience encounter fewer challenges. "Access to credit" plays a crucial role in mitigating constraints significantly ($B = -1.880$, $t = -2.948$, $p = .004$), underlining its importance in enabling gardeners to overcome obstacles. Among the non-significant variables, age, gender, marital status, household size, income, land ownership, "Garden Size," and "Occupation" exhibit weaker relationships with constraints. While these factors might not have a significant impact individually, their cumulative effects underscore the complexities of the interplay between socio-economic characteristics and constraints in the context of homestead gardens. The collective model explains 46.7% of variance in constraints ($R^2 = 0.467$), underscoring the combined influence of these significant variables.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This section presents the summary of major findings, conclusion of the study as well recommendations made from the study.

5.1 Summary of Major Findings

The study assessed the contribution of homestead gardens to household food security in Oye Rural Area of Ekiti State, Nigeria. The analysis was based on primary data obtained through a set of well-structured questionnaires personally administered to 120 households in the study area. The questionnaire was used obtain information on socio economic characteristics of the respondents. Data were analysed using descriptive statistics, multiple regression analysis and likert scale type.

The descriptive statistics revealed that 62.4% of respondents are male, reflecting a balanced representation of both sexes in homestead gardening activities. Both men and women play active roles in these activities, potentially contributing to a more equitable distribution of household food security responsibilities.

The mean age of the respondents is approximately 39 years, suggesting that those involved in homestead gardening are likely to be in a stage of life where they have the energy and capacity to actively participate in agricultural and gardening activities. The study also

revealed that household size has a direct bearing on food security, with 88.8% of respondents having a household size of 1-5 members.

The size of the garden and gardening experience are intertwined factors that contribute to the efficacy of homestead gardening. With 88.8% of respondents having gardens sized between 1-2, smaller-scale gardening is prevalent, potentially highlighting the need to optimize space utilization. The land tenure dynamics of the study provide valuable insights into the effectiveness of homestead gardening practices. The study highlights the importance of homestead gardens in addressing nutritional deficiencies, enhancing health, and improving overall well-being.

Homestead gardens provide fresh products for local consumption, reduce production failure risks, and ensure consistent food supply. They also produce supplementary staple crops, serve as sources of income for families, strengthen family relationships, buffer households during stress, and serve as gifts to neighbours and relatives. These findings highlight the holistic potential of homestead gardens as catalysts for positive change, urging tailored interventions to improve livelihoods and food security in rural areas.

Furthermore, Gardeners in Oye, Nigeria, cultivate a diverse range of crops, with oranges being the most popular and potentially nutritional fruit choice. This diversity highlights the potential of homestead gardens to address food security, nutritional needs, and income generation, contributing to sustainable livelihoods.

The Oye rural area homestead gardeners face several challenges that impact their ability to enhance household food security. The most severe challenge is animal destruction, followed by weed infestation, insect attack, disease infestation, water scarcity, lack of planting materials, and theft.

The linear regression analysis reveals significant factors influencing the relationship between socio-economic characteristics and constraints faced by homestead gardeners in the Oye rural area. Education is a significant factor, with higher levels corresponding to heightened constraints. Years of experience and access to credit significantly impact constraints, while non-significant variables like age, gender, marital status, household size, income, land ownership, garden size, and occupation show weaker relationships. The collective model explains 46.7% of the variance in constraints, emphasizing the complexities of the interplay between socio-economic characteristics and constraints in homestead gardens.

5.2 Conclusion

Based on the descriptive statistics and findings from the study of homestead gardening activities in Oye, Nigeria, it is clear that these gardens play a crucial role in addressing food security, enhancing livelihoods, and improving overall well-being in rural areas. The study has revealed a balanced representation of both sexes in gardening activities, with an average age that suggests an active and energetic participation of individuals. Additionally,

the size of the garden, gardening experience, and land tenure dynamics are key factors influencing the effectiveness of homestead gardening.

The diverse range of crops cultivated by gardeners in Oye, particularly the popularity of oranges, highlights the potential of these gardens to address not only food security but also nutritional needs and income generation. However, the study has also identified several challenges, including animal destruction, weed infestation, and water scarcity, which impact the ability of gardeners to enhance household food security.

In terms of socio-economic factors, education, years of experience, and access to credit have been identified as significant influencers of constraints faced by homestead gardeners. These findings underscore the complexities of the relationship between socio-economic characteristics and gardening challenges.

In conclusion, homestead gardens in Oye, Nigeria, have the potential to bring about positive change by addressing food security, nutritional deficiencies, and income generation. To harness this potential effectively, tailored interventions are needed to address the specific challenges faced by gardeners, with a particular focus on education, access to credit, and strategies to mitigate the identified challenges.

5.3 Recommendations:

Based on the findings, the following recommendations were made:

1. There is a need to integrate home garden into our farming system by agricultural policy makers and adequate extension services in area of pests and diseases management as well as supply of improved farm inputs to home gardeners by appropriate government authorities is also required.
2. Provision training and educational programs to enhance gardening skills and knowledge, particularly targeting those with limited education.
3. Facilitation of access to credit or micro-financing options for gardeners to invest in garden maintenance and expansion.
4. Encouragement of community-based initiatives to help gardeners share resources, tools, and knowledge to overcome common challenges collectively.
5. There should be promotion of cultivation of a diverse range of crops to enhance nutritional diversity and income generation.

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APPENDIX

QUESTIONAIRE

UNIVERSITY OF ILORIN

FACULTY OF AGRICULTURE

DEPARTMENT OF AGRICULTURAL EXTENSION AND RURAL DEVELOPMENT

TOPIC: CONTRIBUTION OF HOMESTEAD GARDENS TO HOUSEHOLD FOOD SECURITY IN OYE RURAL AREA OF EKITI STATE, NIGERIA.

Dear respondent,

I am a student of the above-named university and department. I am currently writing my undergraduate project on the above-named topic**.** Your aid will be needed in providing answers to the questions in this questionnaire. The information provided will be treated with uttermost confidentiality. Thank you.

Yours faithfully,

Isola Oke Mathew

LGA ……

Date of Administration ……

NOTE: Kindly tick/fill in with appropriate answers only.

SECTION A: SOCIO-ECONOMIC AND DEMOGRAPHIC INFORMATION.

1. Age (in years): …….

2. Gender: Male ( ) Female ( )

3. Marital status: Single ( ) Married ( ) Divorced ( ) Widow/Widower ( )

4. Household size: ……

5. Highest education level attained: a. No formal education ( ) b. Primary education ( ) c. Secondary education ( ) d. Tertiary education ( )

6. Primary occupation: a. Farming ( ) b.Other ( )

7. Monthly income from farming (Naira): …….....

8. Size of garden (ha): …….....

9. Gardening experience (years): …….....

10. Access to credit. a. access( ) b. No access ( )

11. Land ownership: a. inheritance ( ) b. lease ( ) c. purchase( )

12. Extension contact: …….....number of contact in the immediate past six (6) months

SECTION B: Relevance of Homestead Gardens

S/N	Statement	Strongly disagree	Disagree	Agree	Strongly agree
1	Produce supplementary staple crops				
2	Sources of income for several families				
3	Enables year-round production of different products				
4	Reduces the risk of production failure				
5	Buffer households during times of stress				
6	Few plant products from home-gardens are sold				
7	Home-garden produce serves as gift to neighbors and relatives				
8	Trade in homestead garden products strengthens family relationships				
9	Availability of fresh products for local consumption				
10	Other Specify				

SECTION C: Types of Crop Planted and the quantity of output obtained from homestead. garden

S/N	Crops	Scientific Name	Yes	No	Quantity of output
1	Oranges	*Citrus Spp.*			
2	Mangoes	*Mangifera indica*			
3	Cucumber	*Cucumis sativus*			
4	Cassava	*Mahinot esculenta*			
5	Maize	*Zea mays*			
6	Yam	*Dioscorea alata*			
7	Pumpkin	*Cucurbita spp.*			
8	Tomatoes	*Solanum lycopersicum*			
9	Chili pepper	*Capsicum spp.*			
10	Garden egg	*Solanum spp.*			
11	Amaranth	*Amaranthus spp.*			
12	Water melon	*Citrullus lanatus*			
13	Other Specify				

SECTION D: Cost of input used in the production of homestead gardens.

S/N	**Factors**	**Quantity**	**Cost**
1	Land allocated to garden (ha)		
2	Fertilizer (kg)		
3	Seed planted		
4	Pesticide (lt)		
5	Herbicide (lt)		
6	Irrigation (ha/season)		
7	Labour (man days)		

SECTION E: CONSTRAINTS FACED IN HOMESTEAD GARDENS.

S/N	Constraints	Very severe	Severe	Not severe
1	Insect attack			
2	Destruction by animals			
3	Disease infestation			
4	Lack of planting materials			
5	Drought			
6	Weed infestation			
7	Pilfering			