Investigation of the failure of critical Food Security Community Gardens as poverty alleviation projects in Cape Town.

By

Mvuyisi Steven Mtshisazwe

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Supervisor: Dr. Larry E. Jowah

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DECLARATION

I, Mvuyisi Mtshisazwe, declare that the contents of this dissertation represent my own unaided work, and that the dissertation has not previously been submitted for academic examination towards any qualification. Furthermore, it represents my own opinions and not necessarily those of the Cape Peninsula University of Technology.

Signed:  **Date: 16/03/2018**

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- My wife, Siphokazi Mtshisazwe and my son Emihle Mtshisazwe, for their love and patience, and for believing in me.
- All the community members who gave their time to fill in the questionnaires for my study

DEDICATION

This thesis is dedicated to the women, Siphokazi Mtshisazwe. There is no doubt in my mind that without her continued support emotionally and love, I would not have made this far.

ABSTRACT

The purpose of this study was to investigate the failure of critical Food Security Community Gardens as poverty alleviation projects in Cape Town. Community garden projects have been used as poverty alleviation many years ago and as it are today. Community garden projects provide food like, fresh vegetables, fruits, grain, and other natural products such as wood, flowers and herbs for poor communities. The unemployment rate in South Africa is an ongoing issue; however this has made the South African government to an emphasis on community garden projects. Although there has been a commitment by South African government to promote use of community garden projects to address food insecurity, however food security still remain a major developing problem in this country. The objectives of this study were to identify aspects that may contribute to failure of critical Food Security Community Gardens as poverty alleviation projects. To identify critical success factors related to community garden projects. To address the issue of food insecurity cape flats residents in Cape Town. To find a solution to failure of critical Food Security Community Gardens as poverty alleviation. A questionnaire was developed and used as a tool to acquire inputs to satisfy the research questions. This study was based on material that was collected from school, churches, clinics, and community residents. The findings were: identification of the project risk, horticultural skills, project leadership, and land tenure and water accessibility is critical for project success. Households sometimes spend a day without eating any vegetable. The households are not always got their vegetable from community garden projects. There is a lack of project leadership skills and effective communication. Community members are educated on garden skills, Opportunity are given to children to apply gardening skills, Community parks and gardens are used to share knowledge. The analysed data has led to recommendations that it is most important to identify critical success factors that are specifically to community garden projects in order to succeed. The results from the study could enable community members, professionals and assist government officials who are involved in addressing food insecurity in order to alleviate poverty.

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GLOSSARY

Terms/Acronyms/Abbreviations Definition/Explanation

- Community gardens: is a single piece of land gardened collectively by a group of people.
- Critical success factors: is the term for an element that is necessary for an organization or project to achieve its mission. It is a critical factor or activity required for ensuring the success of a company or an organization.
- Food insecurity: the state of being without reliable access to a sufficient quantity of affordable, nutritious food.
- Project management: is the application of processes, methods, knowledge, skills and experience to achieve the project objectives. General. A project is a unique, transient endeavor, undertaken to achieve planned objectives, which could be defined in terms of outputs, outcomes or benefits.
- Cape flats: is an expansive, low-lying, flat area situated to the southeast of the central business district of Cape Town.
- Project success: is the basis from which your client concludes, for
- example, whether the project of high quality, that money paid to you was well spent, that you did a good job as a consultant, and whether you might be hired again (if you are an external consultant).
- Horticulture: the art or practice of garden cultivation and management.
- Malnutrition: is a condition that results from a diet in which nutrients are either not enough or are too much such that the diet causes health problems.

List of acronyms

- AFSUN: African Food Security Urban Network
- IFSS: Integrated Food Security Strategy
- SPSS: Software Program Social Science
- IAFP: International Association for Food Protection
- AIDS: Acquired immune deficiency syndrome
- HIV: Human Immunodeficiency Virus infection
- GMO: Genetically Modified Organism

CHAPTER 1:
BACKGROUND OF THE STUDY

1.1 INTRODUCTION

The purpose of this study was to investigate the failure of critical Food Security Community Gardens as poverty alleviation projects in Cape Town. However South Africa is experiencing enormous challenge of food security on both rural and urban dwellers. Food is a human right and it is critical for every resident to have unlimited access on a daily basis *(*Fian international, 2015: 234-278*).*

The initiative from the Cape Town City Council on alleviation of poverty among the low income residents through gardening projects is the most important strategy. This initiative enabled the poor resident to be able to grow their own basic needs without waiting for the government. The most affected areas by food insecurity are amongst informal settlement residents (Ruysenaar, 2012:219-249). Throughout the country the term agriculture seems to be known and understood, however an escalation of poverty among poor residents is unacceptable. Whenever there is an escalation in food prices, it always has an adversely impact on low income residents. These residents are largely in the informal settlements and townships. The Cape Town local government is facing a social, economic and political challenge that need to be addressed by the city. The low income residents occupy small amount of land characterised by their small houses the occupied and too often crowded with large families (Wilkinson, 2000:195-205).

According to Barrett (2010:825-828), the initiative of food security program aims at utilization of small land especially the community spaces that have been rehabilitated to community gardens. Years ago most communities worldwide have utilized their small land to grow basic foods for their survival. Most of which would be tomatoes, onions, green vegetables, okra and under such crops that were needed and used on a regular basis. Community spaces have history ever since the beginning of time and it has become a tradition in many countries. It was used for growing flowers meant to beautify the homes (Gregory *et al*., 2005:2139-2148). The lawn was a common practice among high income residents Fischer (2016:1185-1194), but very little cultivation of crop and

vegetables. The high income residents are not affected by the current situation of food security; however they don't see a need to grow crops or vegetables as they can afford it. Swindale and Bilinsky (2006:1449-1452), perceived the low income residents to be most affected, because of the absence of the growth of any plans in the little spaces they have. Most people think that the only high income residents who can be able to plant a tree in their gardens. According to Sheldon (2001:1-58), growing of plants like, lawn, flowers, herbs and fruit tress by high income residents is for social, educational and economic purpose, rather than poverty alleviation. On the other hand low income residents cultivate plants with the purpose of producing food for their families.

1.2 BACKGROUND

According to Hannah and Oh (2000:207-216), define community garden as any piece of land used by a group of people who work as individuals or sharing to produce food. These community gardens are managed by nonprofit organisations or directly by the local government. These community gardens differ in size according to countries and their legislation that governs them and may be small plots to large greening projects (Ferris, Norman and Sempik, 2001:559-568). The establishment of garden has different purpose either in affluent or not affluent area some residents grow for recreational purposes or food production (Harris, 2009:24-27).

In most affluent areas like Europe have numerous of plots in hundreds square meters, most of the time they may be rented by the same family for generations and used for both growing of ornamental and vegetable plants (Nelson, 1996:10-17). On the other hand in most developing countries the plots are relatively small and are used as market gardens. Kishler (2010:9) stated that climate change has been classified as a major unruly issue in food production; however community garden projects assist in reducing the food shortage. Community gardens reinforce the positive ideas and improve on the general health of the community as whole. Community gardens are the fundamental aspect of a health community through healthy fresh and balanced food and adequate nutrition Hartley *et al*., (2012:89) as well as prevention of cardiovascular diseases through continued exercise. They provide increasingly fresh vegetables generally rich in the diet with fresh fruits, vegetables and many other plant based food nutrients which

assist in preventing diseases caused by a shortage of proper nutrients. Davis *et al*., (2011:1224-1230) stated that community gardens has social benefits like sharing of food and knowledge among residents. Also has a positive influence crime reduction, hence the unity of the community.

1.2.1 Cape Town climatic conditions

The majority of low income residents live on a place called Cape flats, this area is very cold and wet in winter time. Cape flats are always experiencing a huge problem of flooding during rainy seasons (Ogawa, 2009:11125). Cape flat residents are experiencing environmental health problems as results of atmospheric pollution from vehicles and are trapped under inversion layer formed during winter time (Fraser, 2007:495-514). The South Western Cape climate is suitable for growth of indigenous fynbos vegetation as results it has become an attraction for tourists (Wilkinson, 2000:195-205).

1.2.2 Crops for that climate

Ever since 1890's community gardens has become the most important poverty alleviation strategy among low income residents. Community gardens are used by individuals or group of people to produce food for their families. The term urban agriculture refers to a vast range of food production tradition within and outside the city (Ogawa, 2009:11125). The community gardens are the source of vegetables, fruits and ornamentals, these community gardens are perceived as an agent of social change to address issues related to food security. Community gardens provide access to traditional and nutritional produce that may not be available to low income residents, also provide better access to health food (Ogawa, 2009:11125).

1.2.3 Community gardens for this climate

Community gardens have a healing effect through a natural view especially on stressful environments, like hospitals etc and community gardens promote well-being and relieve stress. Parks can reduce diseases, crime, and social unrest. Employees who have a view of plants from their windows feel that their job is less stressful and hence their job satisfaction has increased (Maller *et al.,* 2005:1093). Community gardens provide a

direct link to nature for many people and also provide fresh vegetables and fruit for low income residents. These community gardens increase wildlife, however on the other hand, they provide an opportunity for mental health patients to engage in work that builds self-esteem and confidence (Pretty, 2004:78). The community gardens have environmental benefits such as helping to improve comfort to its residents and also have a potential to reduce domestic energy consumption and minimize storm run-off. Community gardens provide habitat for wildlife within the urban environment (Cameron *et al.,* 2012:129-137).

1.2.4 Food security principles

Food security is an inability to constantly access to food not the amount of food available, hence food security has never been an issue of how much food is produced, but the constant accessibility of food. Nevertheless this has resulted in African Food Security Urban Network (AFSUN) to undertake a baseline urban food security survey in eleven cities in nine countries in Southern Africa to see whether the food is indeed constantly accessible (Frayne *et al.,* 2010:101). The approval National Integrated Food Security Strategy (IFSS) by the cabinet has helped to integrate the diverse food security programs into one. Even so there is no guarantee for food security and constant access. The climate change and globalization has a negative effect of food security in this country (Frayne *et al*., 2009:101).

South Africa has a limited ability to produce food for sustainability due to the environmental degradation and soil erosion. Cape Town has high number of enduring food insecurity issues among low income residents. The failure of economic growth in the city has direct contribution inability to constantly access sufficient food among low income residents. South Africa has major problem of food security and the seriousness of this issue is evidenced by the eradication of hunger strategy (Battersby, 2011:102).

In 2009 General Election Manifesto (GEM) of the African National Congress (ANC) the emphasis was on food security in South Africa. The high level of migration into the cities has created another problem of competing for employment among the residents, as results there is insufficient formal employment for everyone. The urban residents are

experiencing a very had time whereby they have to pay for everything they need (Mitlin, 2005:3-10).

1.2.5 Critical project success factors

In project management it is highly recommended to define the objectives and goals then agreed between the clients as well the project manager, however communication is the principal of the project in order to be successful. The is a lack of knowledge about critical success factors especially for community garden projects as results community garden projects keep on failing (Sewchurran, 2008:78). The implementation of community-based projects requires a greater institutional integration and background support of urban food systems. Therefore community garden projects fail to find a meaning into production and accomplishing its designated objectives which is to address food insecurity. Kejuo, (2012:89), argued that identification of critical success factors assist to enhance project success and to avoid barriers. It is not clear as to which factors affect project success, nevertheless it is important to identify all possible critical success factors for a specific project.

1.2.6 Horticulture and the management of projects

Horticulture is a growing of plants like cut flowers, vegetables, fruits, ornamental plants, and medicinal plants. Horticulture like agriculture can be used as strategy in job creation or as business opportunity among poor residents as its main focus is to produce plants for different reasons. Horticulture plays an important role among low income residents by providing skills on how to grow, harvest and look after plants (Weinberger and Lumpkin, 2007:1464-1480).

1.2.7 Community Garden – definition

Any project needs to have an ability to mobilize the necessary resources to achieve its objectives. The land acquisition is one of the most important resources that enable community garden projects to be successful. It is important to have secure land tenure to avoid future disappointment during cultivation seasons (Jane and Maya, 2011:54). The insecure tenure can affect the community garden’s success. The community garden can be transformed from a garden to a park that can be valued by the

community as public engagement. Most organizations around the world are using project management approach to bring about the change that is needed to meet organizational goals and objectives (Sheldon, 2001:58).

All projects have their own unique activities and unique set of challenges that are different from other projects. Most projects keep on failing due to the complex nature of project's activities and challenges linked to management of project constraints of budget, quality and time (Kejuo, 2012:94).

1.3 RESEARCH PROBLEM STATEMENT

Community gardens are the answer to challenge of food security, health and social issues and increase access to fresh fruits and vegetables in low-income communities. Cape Town is experiencing on going poverty growth due to the food price increase in the country (Sheldon, 2010:1-58). Land disposed from the indigenous people has not been returned, however there has been no extensive farming project by South African government. There are issues like food insecurities, inequality, and poverty, social and economic issues that need to be addressed in Cape Town (Thom and conradie, 2012:1-25). The academic focus Kejuo (2012:94), is now on trying to understand why community garden projects have a high failure rate and the critical success factors may be related to project failure. This research attempts to identify the reasons why community garden projects are not successful and on the other hand the Cape Town City Council has already put millions into these projects and there has been very little success, this is cause for concern.

1.4 RESEARCH OBJECTIVES

1.4.1 Primary research objectives

The main objective for this research was to identify the causes of failure of community garden projects.

1.4.2 Secondary research objectives

- To identify critical success factors related to community garden projects.
- To address food insecurity among poor residents.
- To analyse the benefits and the use of community garden projects

1.5 RESEARCH METHODOLOGY

The research design has always been incorrectly stated as the research methodology. Jowah (2013:63), distinguishes research methodology as the how part of the research which explains what the population to be studied. How the population sample will be decided on and how it will be sampled and how the data will be collected and how the data will be converted to information and how the reporting will be done. It is mostly commonly confused with the research methodology which is the research design, is explained as the road map to be followed during the research. The design relates to what will be done. However what tools will be used for the gathering of the data and what research method will be used. Both quantitative and qualitative methods were used in this research, since there was a perception to be measured also.

1.5.1 Target population

Collis and Hussey (2003:157) defined the target population as an increase on the reliability and validity of the research findings. The target population for this research was community members within the selected low income areas; these include among others church members, schools (teaching staff and admin staff) and community leaders. The area to be covered was the Greater Cape Metropolis as is under the Cape Town City Council's authority.

1.5.2 Sampling and sample size

Stratified random sampling was used to increase the participation of varying groups including women, church leaders, political leaders, as well as other community residents eligible to participate. (Blumberg, 2008: 52-64), suggests that for surveys on senior people at managerial level, 15 managers plus may be ideal to afford a generalisation. For this research, the estimated number of interviewees or respondents filling in the questionnaires was a minimum of 100 from a minimum of 20 organisations (Blumberg, 2008:52-64).

1.5.3 Data collection method

There are three types or methods that can be used for data collection, namely; personal interviews, telephone interviews and self-administered questionnaires. However self-

administered questionnaires were used as the data collection method on this study. The questionnaires were given to the respondents and each respondent was assisted in filing in the questionnaire. This helped with cutting down on spoilt questionnaires and allowed for a 100% response rate to the questionnaires distributed. The questionnaire used was list of questions set out systematically and specifically intended to provide the required information on the failure of community garden projects as poverty alleviation strategy.

1.5.4 The research instrument

A questionnaire (set of questions) was developed for the purposes of collecting the required data. A pre-research exercise was carried on the people who qualified to be respondents, at least 10 people was tested on the questionnaire.

The questionnaire was re-drawn with the assistance of the statistician before this was used for field research. The questionnaire comprised of three (3) sections, namely; Section A – Biography, intended to qualify the respondents, Section B – this was the Likert scale intended to assist with interpreting the respondents' perceptions. The final Section C – was open ended and asked for the respondents' volunteering for information that may have been left in the construction of the questionnaire.

1.5.5 Data analysis

The Software Program for Social Science (SPSS) was used to analyse the data, this program was used because it is user friendly (De Vos, 2002:339). The data was converted to graphs, pie charts, histograms, tables and other forms of diagrammatic representation for the purpose of easy understanding and interpretation. Descriptive statistics was used to summarise the data obtained.

1.5.6 Data reporting

To avoid missing out on certain aspects of the questionnaire and the responses, the findings were discussed systematically by attending repeating all the questions asked. It provided an answer for each question asked. The format used is; Question – brief explanation, and Response brief explanation to the diagram (response represented diagrammatically) accompanying the response.

1.6 ETHICS CONSIDERATION

The main purpose of the research ethics was to address the question of which ethically relevant matters that are caused by the interference of researchers can be expected to impact on people they use as research objects (Flick, 2011:215).

Some people are willing to disclose their personal information during research. However the researcher has made make sure that he or she treats both the participant and the information that they provide with honesty and respect (Dawson, 2002:146). Welman *et al.,(*2005:181) has mentioned that ethics considerations come into play at three stages of a research project.

1.7 CHAPTER CLASSIFICATION

- **Chapter one:** in this chapter, the proposal and guide to the study of the thesis.
- **Chapter two:** in this chapter, the global food security issues.
- **Chapter three:** in this chapter, the food security issues and its effect in South Africa.
- **Chapter four:** in this chapter, survey design and methodology to be conducted within the field of this dissertation was elaborated upon.
- **Chapter five:** in this chapter, research design and methodology: this study considers the data that was collected, its analysis and interpretation.
- **Chapter six:** in this chapter, the findings or results from the survey, explanation, interpretation, recommendations, and conclusion of the research study.

1.8 SUMMARY

Community garden has been used in many years ago particularly during First World War. However many factors such as global warming, wars and diseases has threatened food security particularly among low income residents. Poverty among urban and rural area residents are experienced an extensive trauma on food shortage and price rise.

The outcomes that may found here may differ from other regions around South Africa, whereas the findings could assist with getting closer to understanding what causes failure of Critical Food Security Community Gardens as poverty alleviation projects in Cape Town.

CHAPTER 2:
FOOD SECURITY

2.1 INTRODUCTION

Food security relates directly to the supply and availability of food to all individuals in the right amounts and affordable prices. Many years ago food was stored in granaries to enable proper supply at most appropriate times during or out of season (Boeing, 2016:10-12). Webb *et al.,(*2006: 1404-1408) posited that food is a primary source of health and is a basic need for the healthful survival of all people with the nutrients given in the right amounts. The opposite of food security is food insecurity which refers to the uncertainty of the availability or accessibility of adequate nutrition Perez-Escamilla *et al.,* (2009:15-26) and safe supply of food accessed in socially acceptable ways. The security of food involves resilience to possible future disruptions to supply and the ability to overcome those risk factors. Food security is also compounded by the fluctuations like drought, fuel shortages, economic instabilities and distribution disruptions. Food is fundamental for a human survival, therefore should be managed properly to prevent any catastrophic conditions on any human being regardless of the prevailing conditions.

2.2 MEASUREMENT OF FOOD SECURITY

There are indicators used to measure food security based on country level household income and expenditure surveys. These measurements are used to capture the main components Barrett (2010:825-828) such as the availability, accessibility, and the adequacy of the supply of the food. It is important to be able to measure the supply and adequacy of the proper quality and quantity in terms of nutritive value and balanced diet. Swindale and Bilinsky (2006:1449-1452), suggested that the measurement of adequacy in terms of quality remains highly mysterious in the definition of food security. There is a financial cost attached to this measurement, and the needs and understanding of the factors is also context specific.

It is a huge challenge to be able to adequately meet the financial and technical demands of collecting and analysing the data to establish the correct measure of food security. Some measurement scales have been developed, and these are listed in table 2.2.1 below.

Table 2.2.1 The scale mostly used to measure food security.

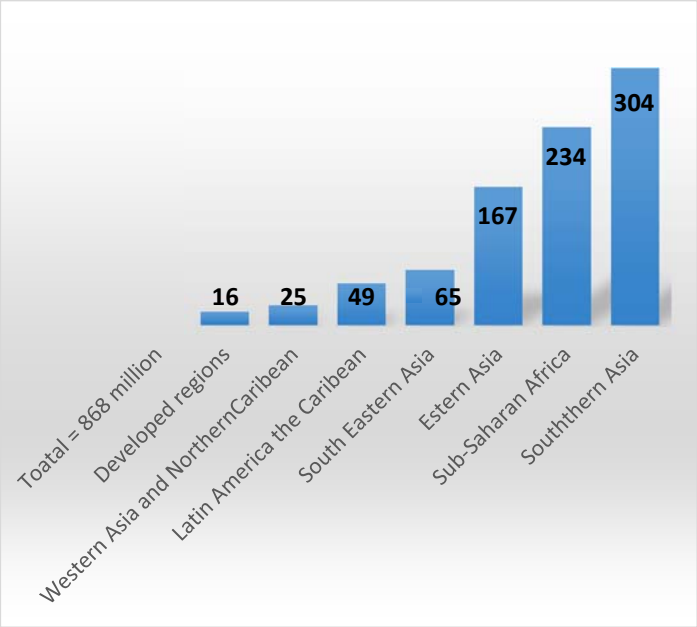
1	Household Food Insecurity Access Scale (HFIAS), continuous measure of the degree of food insecurity (access) in the household in the previous month.
2	Household Dietary Diversity Scale (HDDS) - measures the number of different food groups consumed over a specific reference period (24hrs/48hrs/7days).
3	Household Hunger Scale (HHS)- measures the experience of household food deprivation based on a set of predictable reactions captured through a survey and put into a scale.
4	Coping Strategies Index (CSI) - assesses and rates behaviours based on a set of varied established behaviours on coping with food shortages. The methodology is based on collecting data on a single question: "What do you do when you do not have enough food, and do not have enough money to buy food?"

Source: (Own compilation, literature review: 2016)

In countries like the United States, Food Security is measured during census to ascertain the levels of anxiety about the households in the country. The questions relate specifically to evaluate the anxiety on the household budget. The amount budgeted for food against the total earnings, quantity and quality (Oldewage-Theron, Dicks and Napier, 2006:795-804).

Maxwell (1996:29-303), suggested that measurements that should be factored into the food security indicators. They should include among others, dietary energy supplies for the household, food production of the country. Malnutrition is a condition that results from eating a diet in which nutrients are either not enough or are too much such that the diet causes health problems. Extreme undernourishment, known as starvation, may have symptoms that include: a short height, thin body, very poor energy levels, and swollen legs and abdomen. Undernourishment is most often due to not enough high-quality food being available to eat. This is often related to high food prices and poverty. A lack of breastfeeding may contribute, as may a number of infectious diseases such as: Malaria, pneumonia and measles, which increase nutrient requirements. Efforts to improve nutrition are some of the most effective forms of development aid. Breastfeeding can reduce rates of malnutrition and death in children. This is illustrated in figure 2.2.1 below.

Figure 2.2.1 Number of people affected by undernourishment in 2010–2012.



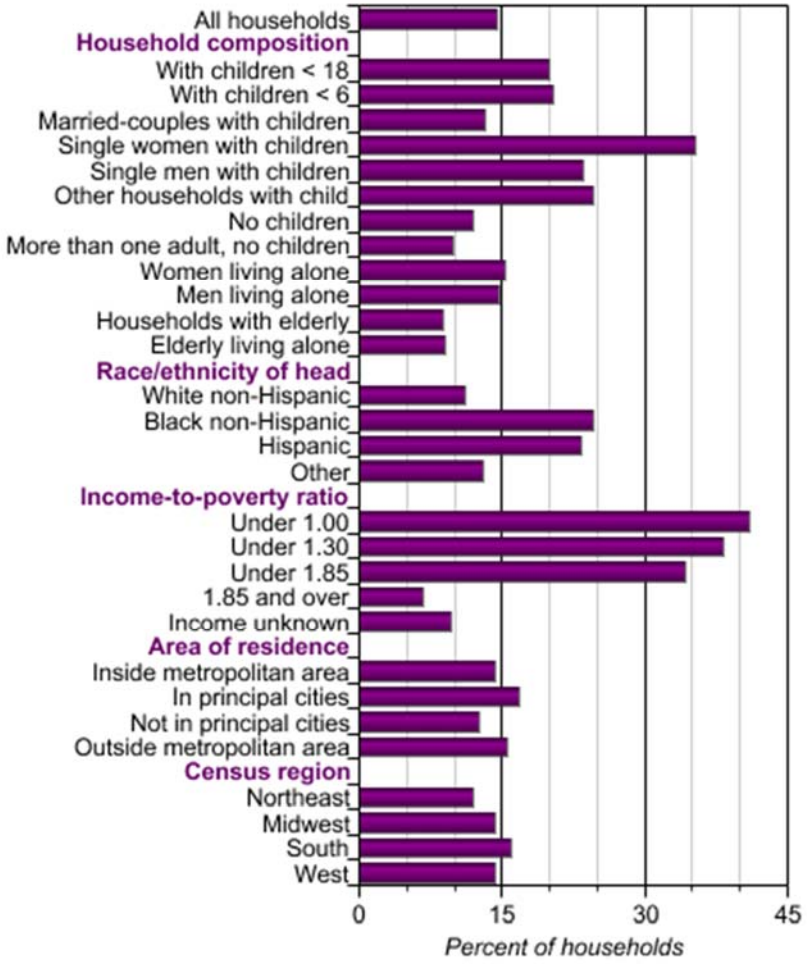
Source: (Maxwell: 1996)

Number of people affected by undernourishment in 2010–2012 (by region, in millions) approximately 870 million people worldwide were undernourished in the years 2010-2012, this is approximately 12.5% of the world population. This means that 1 in 8 inhabitants of the earth have a problem with the food security (Ecker and Breisinger, 2012:1-14). Godfray *et al*., (2010:812-818), recorded a reduction in undernourishment in the undeveloped parts of the world of Latin America and Asia.

Africa has a lot of arable land and has the world's lowest occupancy rate at less than 46 people per square kilometre land productivity are low in Africa. However this is caused by the absence of extensive farming activity and the unavailability of mechanised methods of food production. Most of the food production outside of the commercial farming is generally done or referred to as peasant farming. In most instances there are no government structures responsible for continuously evaluating the food security or insecurity in the African countries (Khoury *et al*., 2014:4001-4006).

The United States regularly evaluates its food security. This is illustrated in figure 2.2.2 below.

Figure 2.2.2 Food security in the US in 2012.



Source: (ERS population and food security: 2012)

NFSS are in the main the tools that the United States Development Agency (USDA) uses to evaluate the food security levels of the country. The tool classifies food security into 4 different categories, namely; high food security, marginal food security, low food security, and very low food security. In industrialized countries income-related food security is measured at both the individual and household levels whereas in non-industrialized countries it is most often measured in terms of under-nutrition and malnutrition through anthropometric measurements. Table 2.2.2 below provides details of the situation in the United States of America.

Table 2.2.2 The food insecurity in the United States in 2012.

Size	Predicament.
Million	Million people lived in food-insecure households.
Million	Adults lived in households with very low food security.
8.3 million	Children lived in food-insecure households in which children, along with adults, were food insecure.
977 000	977,000 children lived in households in which one or more child experienced very low food security.

Source: (Own compilation, literature review: 2016)

Food security is a universal phenomenon not economical the developed countries, but most developed countries joining hands with other global partners have undertaken to eradicate food insecurity. Gregory *at el.,*(2005:2139-2148), highlight the role played by the G8 countries and that through the United States International Development Agency (USAID) has tried to support small farm holders, specifically women. These have contributed enormously to the reduction of food insecurity in many communities. These endeavours would work effectively if they were adopted by the host countries that are threatened by food security Khoury *et a*l., (2014:4001-4006).

It can be asserted here that the success of such program would naturally emanate from government policy towards agriculture and the realisation of the importance of every piece of land available for the growth of plants, specifically food crops. A properly structured agriculture policy coupled with and supported by rural entrepreneurship may assist in reducing the number of people migrating to towns for a better life. Godfray, *et al.,* (2010:812-818), posits that the exodus from the country side to the urban centers is caused largely by people running away from poverty looking for greener pastures. A well developed and or serviced rural structure promotes economic growth, which provides income to the rural residence and will reduce food insecurity in its totality if the proper education on eating habits and nutrition is incorporated into the school syllabus.

2.3 FOOD SECURITY

Khoury *et al.,* (2014:4001-4006), in a study on the increase on awareness of food supplies globally. The impact on food security identifies three (3) props that are used by the World Health Organisation as measures of food security in a country. They are

identifying as food availability, food access and food use. These justifiably are not stable as they are subject to change with changes in the climate, political stability or economic changes. These four pillars are used regularly to measure food security on the global scale, and they are the only measure considered relevant. Table 2.3.1 below is constructed to give information on the factors impacting on food production.

Table 2.3.1 Factors impacting on food production.

Food availability; The availability of food is determined by food production which itself is dependent on a number of factors that may be interrelated or stand alone, these are;	
Land ownership	• To the extent that the people own land, then the likelihood of growing food is inevitably increased as they grow crops for their consumption.
Land use	• Owning land on its own is not enough, governments need deliberate conscientisation programs to enable people to realise the importance of growing food in their small little places.
Soil management;	• Knowledge on the management of the soil is critically, properly managed soil may produce twice or thrice a year through proper crop choice and rotation.
Crop selection,	• Knowledge on the type of crops that grow in particular climatic conditions together with the nutritive value of the same to create a balanced diet is important.
Livestock breeding and management,	• Animal breeding may be considered important specifically as a source of proteins and vitamins. A variety of animals can be bred, chief among whom may be dairy cows, cattle and poultry.
Climatic conditions	• Different crops grow in different climatic conditions thereby creating the need for knowledge on what foods grow or can be bred where.
Water utilisation	• Large water enactments are lie waste in many parts of the African continent and are not used for irrigation which could provide food and increase food security.
Food distribution	• This is about the transportation of food from areas where food is produced to where the food is needed for consumption. For this reason it is necessary therefore to have good transportation system, good food storage, good food processing and or packaging plants.
Food-chain infrastructure	• A well-developed transport infrastructure (rail, road sea and air-transportation) assists in the supply of the food production needs and the eventual markets for the food.
Farming technology	• Advancement in farming may assist in improving the land to produce more or getting technology that increases the per unit production of the food required to provide food security – GMOs.

Source: (Own compilation, literature review: 2016)

There are numerous factors responsible for the ability for a country to produce enough food and let alone a balanced diet. Some of the problems may largely be because of the absence of visionary leadership, resulting in the absence of policies to change the food production chain. Climatic conditions may be a negative determinant of what food grows in a region, modern technology may enable certain crops to grow in non-traditional areas. The current technology in communication and distribution channels allows the food to move from anywhere in the world to the places of need. Table 2.3.2 below discusses further one of the four pillars of food security.

Table 2.3.2 The factors for food accessibility.

Food access; defined as the ability of the consumers to purchase the necessary foods required for the security. The food required may be coming from far countries in which case transport costs become a factor, or simply too expensive given the economic status of the procuring country (Ecker and Breisinger, 2012:1-14).	
Direct and indirect access	• Direct access: household produce the food directly on their own using resources they have access to possibly the resources utilised are economically affordable by the household. • The location of the food supplier may allow accessibility if the household has access without needing too many or any possible obstructions to access to the food. • The economic condition of the family including household income, land utilisable for food production, products of labour, gifts, the economic condition in the country and gifts improve direct access to food. • The spending patterns, and satisfaction of other required goods may allow or not allow disposable income that may be used to provide adequate and balanced diet for the household.

Source: (Own compilation, literature review: 2016)

The factors impacting on the accessibility of food are too numerous to list since some of them overlap and are interrelated. There are factors that are beyond human control (climatic conditions) and those that may be corrected or controlled (planning effectively the planting or breeding of food) through intervention by human beings.

Food stability is a crucial as it is an indication of food availability and food security. Table 2.3.3 below discuss the food stability.

Table 2.3.3- food stability.

Stability	• The ability for a household to obtain food over time in ways that are socially acceptable constitutes the stability of supply. • The condition of food insecurity can be accepted as stable if there is a constant uninterrupted supply. • The reality is that, there are certain factors that cannot be controlled. • Food insecurity can be cyclic, seasonal or persistent – chronic or transitory when it may not be available during certain periods of time. • Countries at war may have people not going out to the fields for security reasons resulting in reduced farming activities and reduced field or crop harvests. • Insecurity in the food market place may result in food producers not concentrating on food types that are not food crops but may be cash crops with better margins.

Source: (Own compilation, literature review: 2016)

Stability is difficult to define, except to say that it should be the absence of all factors that may impact on food production, food distribution, food storage and affordable food prices. The change in climatic conditions may cause an increase in the food supply if there is adequate rain, or the increase in the food prices when food production is low.

Food utilisation is linked to food production and also impacted by population growth. Table 2.3.4 below discuss the food utilization.

Table 2.3.4- the growth in food production is always a big than population growth.

Food utilisation; This refers to the metabolism of food by individual household members in the h ome in terms of quality and quantity that is consumed by the individuals in the home**.**	
Food utilisation	• Food safety is related to food utilization and is impacted. • The food choice, which inevitably impacts on the food security positively or negatively. • Food security is a condition related to the supply of food, and individuals' access to it. • Food security incorporates a measure of resilience to future disruption or unavailability of critical food supply due to various risk factors including droughts, shipping disruptions, fuel shortages, economic instability, and wars. • Food insecurity, on the other hand, is a situation of limited or

	uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways • Failed agriculture market regulation and the lack of anti-dumping mechanisms cause much of the world's food scarcity and malnutrition • Food security indicators and measures are derived from country level household income and expenditure surveys to estimate per capita caloric availability. In general the objective of food security indicators and measures is to capture some or all of the main components of food security in terms of food availability, access and utilization or adequacy

Source: (Own compilation, literature review: 2016)

Food is a fundamental for human survival, and the 6 major foods necessary for the human body needs to be supplied adequately according to the body's needs. These major foods are in alphabetical order, namely; carbohydrates, fats and oils, minerals, proteins, vitamins and water. The absence of one food may impact negatively on certain aspects of the development and or the upkeep of the human body (Godfray *et al*., 2010:812-818).

The unavailability of one of these constitutes food insecurity which may be due to chronic food insecurity can result in hunger and famine. Any actions taken to remove famine and starvation will assist in improving the food security situation and may reverse the effects of food insecurity. Some of the effects of malnutrition are;

- Vital organs may fail during adulthood resulting in say, someone dying of heart failure because the heart experienced structural defects in the early years of one's life.
- A weakened body resulting in stunted growth makes the victims more susceptible to multiple diseases that do not affect other people.
- If children experience severe malnutrition in childhood, this may lead to serious cognitive defects in the children without proper nutrition.

The critical element that impacts on all food security studies is water, which is used both as a nutrient by both animals and plants, and is essential for the very survival of the life. Fraser (2005:495-514), posits that water-table levels are dropping in many countries

due to over pumping of the water where there isn't enough rain. If the availability and thus accessibility of water is difficult, this will mean less crops thus forcing food prices up, resulting in famine and hunger which equals food insecurity. Sub-Saharan Africa has the greatest problem with low water tables on earth (Mills *et al*., 2008: 5307–5312), signaling a challenge in addressing the problem of food insecurity.

2.4 THE EFFECT OF CLIMATE CHANGE

There are estimates of extreme water shortage resulting in droughts in many parts of the globe, and these are allegedly caused by climate change (Fischer, 2016: 1184-1194). The opposite of the droughts has been floods, storms and currents that have destroyed crops and creating zones of countries and regions with high food insecurity. This is a global phenomenon creating catastrophic conditions in formerly high food production regions (Fraser, 2007:495-514). To counter the effects of climate change, new food producing techniques have emerged such as genetically modified crops Shew *et al*.,(2016:4-7), suggest that with this technique many crops can be grown in regions where they would not grow in the natural environment. Hybridisation of the crops has also enabled crops to bring higher yields in non-traditional climates and thereby allowing for homogeneity of crops across the world.

2.5 OPPOSITION TO USE OF GENETICALLY MODIFIED FOODS (GMOS)

Genetically Modifies Foods has played a big role in answering many questions on food security issues. The scientists have argued that biotechnology cannot be used to solve the food security problem. The opposition to this has been magnified and states amongst other reasons that;

- There is no relationship exist between the levels of hunger in any country to that of the population size.
- The motivations of the use of GMO's and hybridisation have been dismissed as being profit driven and not as a solution to the problem of food security.
- The use of the GMOs will worsen or exacerbate the current ecological decline prevalent in most countries due to climate change.
- It is argued that much of the food may be produced by small farmers who are all over the world using the traditional agro-ecological technologies.

2.6 SUPPORT OF GENETICAL MODIFIED CROPS

In the developed countries like the United States and most of Europe many GMOs have been successful, these crops include among others, cotton, maize and soybeans. India has successful developed a genetically modified rice that is resistant to certain diseases that used to destroy the crops. Some crops have been modified to the extent that they don't need pesticides and cannot be destroyed by insects and worms that feed on the unmodified crops (Key, K-C Ma and Drake, 2008:290-298, There is direct correlation exist between the level of poverty and food production among urban and rural residents. Government should put an emphasis on promoting rural and urban farming through use of policies Zhang, Wohlhueter and Zhang, 2016:116-123 stated that what is needed is food production friendly policies and programs for the rural folk who will therefore provide enough for themselves and the nation.

2.7 INDISPENSIBLE NECESSITIES IMPROVED FOOD SECURITY

The use of indispensable necessities has a potential to improve food security. The must be changes in the policies to enable people's mental attitude through proper education. Indispensable necessities improved food security, include among other things changes in the policies), and the mental attitude of the people through proper education (Webb *et al*., 2006:1404-1408). Rain-fed agriculture agronomy is essential like a proper soil fertilisation, soil management and expansion of the variety of crops farmed and also using irrigation where appropriate (Molden, 2007:47-58). Solomon *et al*., (2007:1-18), propagates the new era of investing water through policies that help in the upgrading of rain-fed agriculture to be complemented by better local management of rainwater. Khoury *et al*., (2014: 4001–4006), postulate that any increase in income may enable the farmers to diversify into other cash and or food crops of a higher value thereby reducing food insecurity. The use of wild food has been enormously important in supplementing the rural population's diet and improved food security specifically to rural communities.

The African continent has approximately 23 million children undernourished and these are found scattered in both rural and urban locations. There is a high enslavement rate even amongst those that stay on land where they could have grown basic food for their nourishment. Agricultural subject used to thought in South African schools, however it has been removed from the classroom leaving the school children without knowledge,

and let alone appreciation, for agriculture and growing of food (Kloppers and Pjennaar, 2014:245-279). South African continues to import food from other countries, whereas South Africa has so much of arable land and a climate conducive grow a variety of corps at any time and any province. The continuation of importation of peanuts and sunflower (Brazil), chicken (USA and China), to a country with the same climatic conditions is an indication of a country's failed economic policies (Kloppers and Pjennaar, 2014:245-279).

2.8 FOOD SECURITY WORLDWIDE

Hannah (2000:207-216), explain food security as the availability, sustainability, utilization and accessibility of proper nutritious food at all times. Provision of food security as government policy Boeing (2016:35-37), formulated to both improve the economic conditions and provide adequate and proper dietary needs is an imperative for economic growth for any country. An escalation in people moving from rural to urban sittings is an indication of high poverty levels in this country. This movement brings people from poor non-productive land to an equality poor urban setting, where they live in informal settlements most of them. Boeing (2016:35-37), postulates that the movement of the population to urban centres is on its own importation of poverty from the rural setting into the presumably better urban setting.

2.8.1 Food security in urban

Providing adequate accommodation as well as food to the rural population migrating to urban informal settlements remains a challenge in South Africa and need to addressed (Harris 2009:24-27). The high levels of employability amongst the migrants and the presence of a jobless economic growth complex the South African problem. The highly unstable climatic conditions apparently are caused by climate change impact, which has a negative effect on food security in the country (Schmidhuber and Tubiello, 2007:19703-19708). The South African government at both national and local levels has developed policies on food security. This food policy has been used as measuring tool for food security and the effectiveness of government food programs (Philip, 2009:46-78). Harris (2009:24-27), propose that food security in most countries is challenged by a host of factors ranging from the ever increasing country population density. The climate

change and scarcity of resources has a negative impact on price rise as results the escalation of poverty levels in the country. Food is fundamental for human beings and is consumed on a daily basis Khoury *et al*., (2014:4001-4006), however if there is an increase on the population the must also be an increase in food production.

Many other factors impacting on the food availability in the urban setting are, amongst others; scarcity, affordability and increases in fuel cost (Hartley *et al*., 2012:1-19). Increase in costs for the processing of the food and a myriad of other economic dynamics impacting on income in general. Inaccessibility of the correct food quantities and qualities has resulted in undernourishment Mills *et al*., (2008:5307-5312), and starvation in both the rural and urban populations. The low income people don't have land of their own to farm, neither have the correct education nor skilling (Davis 2011:24-30). Most of the indigenous people use the government grant; however the amount is too little since most of them have huge families and only depend on the grant with no other source of income (Ferris *et al*., 2001:559-568). The levels of poverty is being aggravated and the responsibility is shifted back to the government Miguel *et al*., (1999:155-162), and the local government therefore tries to intervene with the community gardens programs. The local government has the responsibility to improvise methods and programs for effectively and efficiently keeping the low-income residents properly nourished (Hallbeg, 2009:1-50).

2.9 AN EFFECT OF CLIMATE CHANGE ON FOOD SECURITY

The increase in unpredicted weather caused by global warming has a great impact in agriculture and horticulture. However these climate changes have a direct negative impact on crop production and threaten the food security. Agriculture and horticulture is susceptible to climate change in many ways. The high temperature and humidity has reduced yield of agriculture crops, whereas increase the growth of weeds and pest proliferation. Climate change plays an indirect role on food prices and loss of livestock by farmers every year (Karfakis *et al*., 2011:11-18). Climate change has been considered as biggest environmental threats that the world is facing. Effect like drought, floods, deforestation, heat and cold waves has become more frequently. Climate change has effect food security due to irregular in the rainfall pattern as well as

extremely weather events such as heavy winds. The access to food and stability of supply is linked to infrastructure like roads and railways (Ringler *et al*., 2010: 01042). Climate change affects production in complex ways such as ability of individual to use food effectively. The constant changing climatic conditions can initiate a vicious circle where infectious disease and hunger may occur. In developing countries will experience hash time as results there will increase in exports. Depending on the countries future policies climate change will be felt over time (Schmidhuber and Tubiello, 2007:19703-19708).

The rise in food price and poor harvest in most countries has caused by gradual increase in climate change Climate change will affecting food and water security significantly over time. The developing countries are under risk of climate change results of high poverty rates, high vulnerable levels and low adaptation (Wlokas, 2008:12-20). The climate change has caused many people to have a fear that environmental degradation and demographic pressures can displace millions of people in Africa. Climate change has negative effect on economic growth and sustainable development in African continent, as results people are not coping with such changes (Tadesse, 2010: 220-53). Climate change has an effect on the way diseases are transmitted due to extremely unexpected weather conditions within a short of period of time. This left low income residents with less access to health and nutritious food.

2.10 EFFECT OF FOOD INSECURITY

The increases in number of people who are affected by food security will eventually results in civil conflict and protest in South Africa. Apparently most political violence that is prevalent in societies is due to the higher level of chronic food insecurity. Food insecurity has a great contribution to political instability and conflict in the World. Food Security cause violence, while contributing to lot of corruption among leaders (Brinkman and Hendrix, 2011:24). Residents who are food insecure have great chance to face risk to their well-being. Hence food security has been linked with obesity, diabetes and dietary nutrient deficiencies. Community garden projects can provide members with better access to fresh vegetables, while exposing them to how to make their own food. School children who are experiencing high rate of food insecurity have a high risk of

anxiety and exposure to traumatic events. Children in low-income household with a parent experiencing difficulties had greater chance of becoming food insecure (Brinkman and Hendrix, 2011:24).

Food security has become significant and growing challenge in the developing countries and highly critical to alleviate poverty. The poor policies have negative effect on food security in many countries and the problem arises when the focus on policies, structures and institutions is put above than people themselves (Ilaboya, 2012:180-188). Food security is a condition that arises from lack of money and other important resources for their survival. Food insecurity has negative impact on child academics performance, crime, emotional and behavior. However many community food security projects are intended to build relationship between farmers and consumers. Most countries are using security programs to address food security challenges among poor residents (Coleman *et al.*, 2012:155).

2.11 POVERTY LEVELS IN THE WORLD

Although there is gradual increase in people's population rich people are getting richer, on the other hand the poor is getting poorer. The understanding of poverty has been a major human debate for many centuries (Ackermann, 2010:1-91). There is growing concern about the lack of opportunity to access quality education, basic healthcare and clean drinking water. Government and other international organisations have made multiply attempts towards poverty alleviation. The progress in fighting against poverty among developing countries is very slow in progress (Talukdar, 2012:1-86). Most of human beings in the world are still experiencing an intensive poverty, with all its attendant evils of low life anticipation and social exclusion. Poverty destroys weak states capacity to prevent the spread of disease and protect the world's forests. Poverty give rise to the tensions that explode in civil conflict, which further taxes the state on the other hand, allows transnational predator's greater freedom of action (Pogg, 2005:1-7). Poverty reduction calls for a question of efficacy of conventional approaches involving economic liberalization and privatization. Economic and social policies were designed to support employment growth as well as to reduce inequality and promote justice in society. Structural transformations should promote decent work, while governments

should have enough policy to enable them to play a proactive developmental role (Pogg, 2005:1-7).

Some people experience poverty in a permanent or recurrent way. The most obvious explanation would be that people who are persistently or recurrently poor have durable characteristics (USAID, 2013:1-11). These are the characteristics low educational qualifications, lack of employment, health problems, and difficult living arrangements (Wade, 2004:567–589). There is a direct dynamic effect from being poor today to being poor in the future. This effect could occur because of an incentive mechanism and the loss of entitlement to welfare payments (Biewen, 2014:103).

2.12 THE EFFECT OF INEQUALITY ON FOOD SECURITY

Those policies that reduce income inequalities should not only be pursued to improve social outcomes, but also to sustain long-term growth. It is important to promote equality of opportunity in access to food and quality of education. There must be a promotion of employment for disadvantaged groups through active labor market policies and childcare supports (Otsuka, 2013:7-18). The strong interest of policy makers in inequality is concern about whether the rapid increase in inequality might have an effect on economic growth. Income distribution pattern over the years has been a major concern in the determination of the level of economic growth and development of any country (Wheeler and von Braun, 2013:508-513).

There most prominent question in social sciences relates to the effect of wealth inequality on economic growth. The global measure of wealth inequality from Forbes magazine’s listing of billionaires and compares its effect on growth (Reardon, Taylor, Stamoulis, Lanjouw, and Balisacan. 2000:266-288). Some billionaires acquired wealth through political connections and the effect of politically connected on inequality (Saravia-Matus, Paloma, and Mary, 2012:65-80). Wealth inequality has a negative and statistically significant effect on economic growth, while the effect of income inequality is insignificant. The income inequality across countries has receded somewhat in recent years and non-economic inequalities have either remained stable or declined (Mkhawani, Motadi, Mabapa, Mbhenyane, and Blaauw, 2016:34-56).

Inequalities also posture a serious barrier to social development by slowing the pace of poverty reduction. Inequality limits opportunities for social mobility and intergenerational mobility. Income inequality leads to uneven access to health and quality education (Reddy and Minoiu, 2007:484-502). Inequality also increases the vulnerability of societies to economic crises and prolongs the time it takes to recover from it. People want to live in societies that is fair, where hard work is rewarded, and where one's socioeconomic position can be improved regardless of one's background (Ericksen, 2008:234-245).

The challenges facing disadvantaged and marginalized social groups, draws particular attention to the issue of social justice. It examines the distinct impacts of inequalities on youth, older persons, and persons with disabilities whether indigenous peoples or migrants (Webb, Coates, Frongillo, Lorge, Swindale and Bilinsky. 2006:1404-1408). Young people and older persons across the globe experience a broad range of disadvantages that are associated with their age. Indigenous peoples generally fare worse than the non-indigenous in every socioeconomic dimension. Indigenous Africans are experiencing inequality more than anyone else in the world, the laws that where designed to segregate people based on their pigment (Bhattacharyaa, Currieb and Haiderc, 2004.839-862).

There is a significant social inequality between persons with disabilities and the general population in educational, health outcomes and in access to work opportunities. Migrants also face manifold disadvantages, including discrimination. Disadvantages are greater among women than among men within these groups (Haena, Klasenbc, and Qaimac, 2011: 760-769) Global inequalities reflect both inequalities across nations, driven mainly by disagreements in economic performance across countries. The world economic history provides an extremely rich period to address the correlations between economic growth and global inequality. Inequality has become a major issue in most countries especially in developing countries and it has a negative impact on food insecurity moreover on poor households (Alaimo, Olson and Frongilo, 2001:45-67).

2.13 SUMMARY

This chapter discussed the challenges that are most countries are facing on food security. One of the challenges that were highlighted within the food security chain is global warming. However global warming has threatened food security in the world as it has a negative effect on climate change. This dilemma leads poor agriculture farming and water scarcity. The author also highlighted the effect of inequality on food security; hence still people are divided according to their culture and ethnicity. This has negative impact on disadvantaged background poor families.

The author continue mentioning the problem caused by food security in the world, the way in which poverty contribute into crime and other unethical behavior among poor families. The author also highlighted the high level of poverty among poor families and how food price affected them. The last thing being highlighted was the role of agriculture on food security, here the author look at possibility of agriculture being used as a poverty alleviation strategy.

CHAPTER 3:
THE FOOD SECURITY ISSUES AND EFFECT IN SOUTH AFRICA

3.1 INTRODUCTIION

This chapter focuses on the food security issues and the effect it has on South African economy. This chapter talks about issues that indigenous Africans of South Africa are facing after 21 years of democracy. The agricultural plays an important role on food security and poverty alleviation in South African. South Africa produces enough food to feed its population, but experiences rapidly increasing rates of household food insecurity.

3.2 LAND REFORMS IN SOUTH AFRICA

The long history of South African's colonisation and racial discrimination has resulted in the land being dispossessed by the White minority. However the indigenous Africans attempted to resist against dispossession, but they were defeated by the use of harmful weapons of mass destruction (Juana, 2006 294-318). South Africa was largely uninhabited at the time of the arrival of Europeans, however documentary evidence has conferred that in fact the land was inhabited. Jan van Riebeeck was the first European to settle at the Cape and this happened after confrontation with the indigenous people (Hottentots) in 1655 (Maylam, 1995:19-38). South African was moved from fertile land into barren land with poor rain fall patterns and uneven weather conditions. The White farmers were allocated a fertile soil for commercial agriculture. However the dispossession of the indigenous Africans took place through conquest it was followed by major policies of the state with array of laws from the early days of colonization (Rugege, 2004:1-28).

The effeteness of systematic land dispossession took place in 1913 by the state and the Native land Act of 1913 assigned least percentage of the land to South African and excluded them from the rest of the country. The majority of the land was assigned to White minority population (Hall, 2014:1-13). The main purposes of the Land Act 1913 were firstly to make more land available to white farmers than the indigenous Africans. Secondly, it was to impoverish indigenous Africans through dispossession and

prohibition of any form of farming arrangements by them. However this has resulted from blacks to dependent on employment for survival, thus creating a pool of cheap labor for the white farms and the mines (Cruise, 2011:217-342). Land dispossession during the colonial and apartheid rule has produced a highly unequal pattern of land ownership. In 1994 a democratic elected government came to power and it has adopted a land reform program to address the problems of inequality (Rugege, 2004:1-28).

The land reform program of the South African government is conventionally described as restitution, tenure reform and redistribution. Restitution deals specifically with historical rights in land and tenure reform with forms of land holding. On the other hand redistribution is specifically aimed at transforming the racial pattern of land ownership (Binswanger-Mkhize, 2014: 253-269). Redistribution of land is widely seen as having the potential to significantly improve the livelihoods of the rural poor and to contribute towards economic development of South Africa (Jacobs *et al*., 2003:1-34). The inequality of land ownership in South Africa reflected massive inequality in the distribution of income and other assets. Unemployment is relatively high and also the poverty level among the poor people lived in the rural areas (Pepeteka, 2013:1-16). Land reform was an important part of the post-apartheid government's plans for redistribution and redress in rural areas. The land reform program was initially constructed as a poverty reduction instrument. The redistribution program was restored to focus more on the creation of a commercial farming class through the Land Redistribution for Agricultural Development (LRAD) program (Greenberg, 2009:1-12).

Apartheid policies were designed to push indigenous Africans South African into overcrowded and impoverished reserves townships. The agricultural policies led to the large-scale eviction of farm dwellers from their land and homes (Department of higher education and training, 1998*:* 167-234). Even though there was an abolition of the land Act, however it didn't address inequalities and land distribution. During Nelson Mandela's presidency the land redistribution aimed to provide the disadvantage and the poor with land for residential, but not for food production (Adams, 2000:1-45). The political aspirations and popular expectations that surround the land question in South Africa and the transformative potential of land reform itself. The studies have been done

to monitor and moderate program of land reform, which prioritized land restitution. The limits to land reform that derive not from policy or program failures, but rather from the intersection of significant demographic, ecological and social constraints (Arrighi *et al.*, 2010:410–438).

The land question was one of the driving forces of the liberation struggle as the increase in number of the black people still living in poverty today. However the evidence points to a far greater concern with jobs, housing and the provision of basic services as immediate priorities in people's day-to-day lives (Ntsebeza, 2006:1-10). The land question lies in reversing the shameful history of dispossession and restoring and redistributing rural land to black people. The land question is rooted in discourses around rights, social justice and identity that operate generally within a group rather than an individual pattern. The discovery of mineral in 1880's by White minority has led to a demand of cheap black labour (Walker, 2005:1465-3893).

3.3 THE ROLE OF SOUTH AFRICAN AGRICULTURE

South Africa is regarded as a rich in minerals and diverse country and it has a vibrant cultural diversity with a spectacular range of vegetation types, biodiversity, climates and soil types. The country allows farming activity like crops in winter and summer and together with animal farming (du Plessis, 2008:2-27). The South African government made a response by making a gradual shift towards a more free market approach. This has resulted in policies to be oriented towards consolidating and supporting a productive core in agriculture (Greyling, 2012:1-113). The South African Agricultural Production Strategy (SAAPS) seeks to position primary agriculture production for the purpose of improving the national food safety and security. The rural economic growth and development can be fuelled to increase rural employment and poverty alleviation (Agriculture, forestry and fisheries, 2011:1-91). People depend directly or indirectly on agriculture for their employment and income. The agricultural sector has been identified as one of the sectors that have significant potential to create jobs for South Africans. The Department of Agriculture, Forestry and Fisheries is committed to creating more jobs (Hart and Maliber, 2010:75-90).

Genetic modification provides a way of meeting the growing demand for food without placing even greater pressure on scarce resources. A great deal has happened in this field since the proclamation of the GMO Act, 1997 (Act 15 of 1997) (Agriculture, forestry and fisheris, 2011:36-70). The GMO Act, 1997, which was implemented in December 1999, provides for the regulation of GMO activities in South Africa. The GMO Act permits the use of trails for commercial release in the country. The Integrated Food Security and Nutrition Program (IFSNP) aims to achieve physical, social and economic access to safe and nutritious food for all South Africans (Ntsebeza and Hall, 2007:1-256). Food security at household level had been negatively affected by the general global economic decline of the past years. The Land Bank is designed to assist agricultural bank and is guided by a government mandate to provide financial services to the commercial farming sector and agribusiness (Agriculture, forestry and fisheris, 2011:36-70).

3.4 POVERTY AND RURAL DEVELOPMENT

South African rural societies remain some of the most impoverished societies in the world. The lack of access to employment, quality education and other essential resources still divide them from their urban neighbors. The rural settings have a high level of poverty compared to urban settings. Unemployment and poverty levels has been a major problem in the rural areas of South Africa (Gopaul, 2006:1-134). In the Eastern Cape there is a current high poverty and unemployment rates in this may be linked directly to the historical economic neglect of this area. Poverty and unemployment in South Africa are often rural phenomena, given that many of the rural inhabitants are linked to agricultural activities (Pauw, 2005:1-20). Twenty one years of democracy in South Africa have seen active policy development and massive financial efforts by the public sector towards rural development and poverty alleviation. The actual potential of rural economy has been left under-developed by the previous apartheid regime.

3.5 DEMOCRACY IN SOUTH AFRICA

The post-apartheid economic and labor-market policies in South Africa have been shaped by contending visions of economic development; this has contributed to policy

incoherence (Picccone, 2011:139-152). The ruling African National Congress (ANC) together with its alliance partner the Congress of South Africa Trade Unions (COSATU) has underestimated the labour intensive growth. The ongoing problem of corruption and dishonesty, are contributing to South Africa's relatively disappointing economic performance (Nattrass, 2014:1-32). The Black Economic Empowerment (BEE) policies were created to assist blacks with to organize along racial lines and to engage directly with the state. However this initiative has opened the door for growing dishonesty and corruption instead. This was supposed to create a new black business elite and new investment opportunities; instead the downside has been capital flight (Simkins, 2011: 105-119).

The current policy and institutional environment benefits firms operating in higher wage and higher productivity positions. Democracy has been consistent with growth in South Africa, but questions how governmental institutions, policies, and political alliances have shaped the nature of that growth (Shava, 2016: 23-56). The South African democracy is complicated by the fact that the ruling ANC is in a mutual alliance with COSATU. This has serious implications for future growth and job creation, and for democratic consolidation. It has become harder to address unemployment, and establishes a division between those with jobs.

3.6 THE SOUTH AFRICAN EDUCATION SYSTEM

The private business sector has been critical for an academic nature of schooling and has failed to prepare young people to fit in the modern technological world. The black education system was designed to provide the additional skilled manpower required for the maintenance and growth of the economy (Saje, 2002:2076-3433). The question on the relevance of South African educational system by teacher and educationalists it has become problem. However there has been a shift in the education debate and focused on the concept of equal but separate (Education association of South Africa. 2001: 345-456). The major issue of being whether equality or not, can be achieved in practice if the education systems continue to be segregated. The black teacher's quality of education it has been undermined as results the black teacher is under cordon and fighting for survival (Hartshorne, 2011:149-151).

The education in rural communities most of the black scholars at school come from what can broadly be described as rural environments. In terms of resources, facilities and financing they have been discriminated against to an even greater extent than scholars in the urban areas. Education planners and decision makers are assigned with monitoring, evaluating and accounting for progress in the schooling system (Spaull, 2013: 234-456). Education statistics are important in providing evidence as to whether the nation is achieving its constitutional imperatives of providing basic education to all. The publication is used as tool to assessing whether key education policies are being attained (Department of Education, 2010:1-49). South Africans have been committed themselves to reclaiming their history and culture as the solid foundation for building a sense of meaning and vision for the people. South Africa should have an understanding of specific geographic, economic, and cultural placement as a nation (Wolhuter, 2011: 2076-3433). Ever since 1994's elections in South Africa the educational transformation have taken place and educational reform has been a central part of the country's reconstruction and development project (Dalton, Mackenzie, and Kahonde, 2012*:* 134-234).

The South African government had to overcome the destruction of apartheid, and provide a system of education that builds democracy, human dignity, equality and social justice. Another system of life-long learning has to be established to enable South Africans to respond to the massive economic and social challenges of the 21st century (Ntombela, 2001*:*303-317). Organisational cultures from nineteen racially and ethnically divided departments had to be blended and reshaped, to define and meet common goals. Systems and procedures also had to be changed to improve performance and outcomes, teamwork and customer-focused service in the spirit of Batho-Pele (The Council on Higher Education, 2007:1-77). The district development project was designed to develop new organizational models and to improve administrative and professional services at the district level. The educational system, the learning sites together with government programs created an inter-provincial network to effect staff and governance development program (The Council on Higher Education, 2007:1-77).

There must be a provision of greater technical support to provinces from the national sphere and establishment of a budget, based on greater institutional co-ordination. The minister of basic education has promised the Southern and Eastern African continent about the monitoring education, but not in mathematics (Ebrahim and Pascal, 2016:22-45). Many of these learners lack proper foundations in literacy and numeracy and so they struggle to progress in the system and into post-school education. The training national planning by Minister Trevor Manuel, also found in his ministry's diagnostic overview that the quality of schooling is substandard, especially in the township schools (Modisaotsile, 2012:1-7). South African dataset of educational achievement shows that there are in effect two different public school systems in South Africa. These two education systems can be seen when splitting people by wealth, socio-economic status, geographic location and language (Odhav, 2009: 33-57).

The grade four scholars from rural areas compared to townships are half years behind than urban children in reading. Whereas the grade three scholars from former-white schools scored higher on the same test than grade five scholars from former-black schools. South African youth by the age of eight there are large in equalities in the educational outcomes of scholars. South Africa currently participates in a number of local and international tests of educational achievement (Spaull, 2011:2-65). In centuries education was regarded as one of the most important aspects of national regeneration and progress.

The objective was to strengthen existing schools, build new ones, and appoint competent teachers regardless of their former or current allegiances. Government motivated and inspired teachers by engaging teachers' unions, focusing on the role of principals as critical managers (Johanne *et al.,* 2014:23-67). The teachers and principals feel they were a crucial component in the building of the nation. The South African curriculum education system has a high-cost, but in low-performance. South Africa is facing a shortage of teachers, under-qualified teachers and poor teacher performance. The lack of resources and inadequate infrastructure has an indirect effect on learner's performance (Ezzell and Jensen, 2000:1415-1416). Zimbabwe after it has received its independence in 1960's the government immediately prioritized education

and gradually introduced a new curriculum over a period of about 10 years during the 80s. However this has created a continuity and stability for teachers in that country (Guerrant *al et.,* 2006:28-35).

3.7 DISEASES AND MALNUTRITION IN SOUTH AFRICA

Malnutrition has particularly significant health consequences during both early development and adulthood in South Africa. Overweight and obesity among children is incredible high (Acchiardo *al et*., 1983:199-203). Overweight and obesity have been linked to adverse psychological and physical outcomes especially during childhood and adulthood. The other psychological problems like anxiety, depression and negative self-image has been associated with overweight and obesity (Tathiah *at el.,* 2013:718-723). The high rate of deaths in adults caused by diabetes, heart disease and cancer, are linked to overweight and obesity. Under-nutrition also continues to be a public health concern globally and despite a decrease in prevalence. Children less than 5 years of age are suffering from either underweight or are stunted especially in Africa and Asia (Makone, Menge and Basweti, 2014: 45-67).

South Africa is a middle-income country and is facing the burden of infectious diseases such as HIV/AIDS and tuberculosis (TB). South Africa also is facing a challenge of non-communicable diseases such as under-nutrition, over-nutrition, diabetes, hypertension and cancer. This is generally accompanied by a nutritional transition which characterized by changes in patterns of consumption of food, alcohol, tobacco and a shift to a diet high in sugar, salt and fats. The inadequate nutrition received during the prenatal infant and early childhood phases, combined with high-fat, energy-dense foods and a lack of physical activity (Faber and Wenhold, 2007:393-400). This means that black graduate who graduated from universities with weaker reputations, may struggle more to find employment in the near future. Surprisingly that the number of graduates emerging from the universities is black and levels of unemployment are too high.

The higher unemployment rates faced by the young are predominantly due to the disadvantage of entering the labor market more recently, rather than being attributable to their age. The importance of the generational aspects of unemployment relative to life

cycle and business cycle impacts suggests that policies should address the structural rather than anything else (Muthethwa, 20012:1-25). Rising unemployment is a source of considerable concern to both policymakers and labor market participants. However in the absence of panel data and the dynamic aspects of this phenomenon remain largely unexplored at the microeconomic level. South Africa's racially divided past impacted most aspects of life, including the labor market and the education system (Statistics South Africa, 2014:1-76). The rise in unemployment it's a corresponding to robust economic upswing resulted on allegations of jobless growth amongst policy makers and labor unions. Economy of South Africa currently has one of the highest unemployment rates internationally (Burger and von Fintel 2009:1-36). The reversal of discriminatory policies all created the expectation that labor market prospects would have improved over this period for the majority of the population. However the ranks of the unemployed have grown, which has prompted allegations that the economy had entered a period of jobless growth (Banerjee *et al.,* 2008:715–740).

3.8 SUMMARY

This chapter has discussed the issues around land reforms in South Africa, as most South African youth experienced poverty and unemployment. This chapter talks about the role of agriculture in South African citizens. The author also talks about poverty levels and rural development after 21 years of democracy whereby indigenous Africans in rural areas are still facing high levels of poverty and inequality. This chapter speaks about the democracy in South Africa black people still own nothing after and indigenous Africans president took power this has been indicated by high level of unemployment among youth, poverty, health problems and inequality. The author discusses the South African educational system were most black graduate has no jobs. However the language used at primary to tertiary level has negative effect on performance of every indigenous Africans student in South Africa especial in rural areas.

CHAPTER 4:
RESEARCH METHODOLOGY

4.1 INTRODUCTION

This chapter focuses on the research methods that were used to obtain the results and the study's conclusions. The research design was both qualitative and quantitative methods. The data collection tools were mentioned and it was used to gather the information that was analyzed to solve the problem that has led to the failure of Critical Food Security Community Gardens as poverty alleviation strategies. This chapter discusses the qualitative and quantitative approach in detail and it explains how it was employed in this research. The mixed approach was use to explore the underlying causes failure of community garden projects as poverty alleviation strategy. However the fundamental methodology approach of this research was based on the quantitative approach.

The data analysis methodology was then discussed followed by the important issues of reliability and validity. According to Easterby-Smith (1991:34-67), research is the study of problems through the use of scientific methods and principles. Due to the nature of each study therefore the methodology that is appropriate for that study must be carefully selected. In previous chapters two and three a review of the literature on food security and community gardens was presented. The chapter served to create a basic understanding of what causes of food insecurity and the role of community gardens are. According to Collis and Hussey (2003:55), the phenomenological paradigm tends to produces qualitative data and uses small samples. It is also concerned with generating theories which produces data that are rich and subjective. According to Welman and Kruger (2001), involves the application of various methods and techniques in order to create scientifically developed knowledge by using objective methods and procedures.

4.2 RESEARCH DESIGN

The data collection method was based on quantitative research paradigm. The questionnaire was used as data collecting tool. According to Steyn *et al.,* (2009:27), a research project is a specific research investigation and it has 4 major phases constitute

the research process, namely;

- Invention of research questions,
- Data collection,
- Editing and coding of data,
- Analysis of data and conclusions.

The case study research definition is an empirical enquiry that investigates a contemporary phenomenon within real life situation. Case study research mainly fall in the qualitative research paradigm, but it could also be applied within the quantitative research paradigm (Yin, 1994:18).

4.3 RESEARCH METHODOLOGY

The research process works within a frame of a set of philosophies and uses methods that have been tested for validity and reliability. However it attempts to be objective and unbiased in nature (Kumar, 2005::14).

Research is not just a process of gathering information, however it is about answering unanswered questions or creating that which does not currently exist. Kothari (2005:10) outlines the importance of knowing and understanding research methodology in which research is conducted. Here are presented below;

- For an individual who is interested in a career within research it is important to understanding research methodology and techniques. The knowledge of research methodology provides sound training to the new researcher and enables to do better research.
- The knowledge of way in which research is conducted will brainwash an ability to evaluate and use research result with confidence.
- The knowledge of research methodology enables the use of making smart decisions regarding problems that one faces. When one knows the process of conducting research, then one may have the satisfaction of learning a new intellectual tool. Enables to look the world and judge daily experience objectively (Kumar, 2008:2).

4.3.1 Research strategy

The research strategy defines the general approach to the research investigation and research strategy. It uses qualitative methods or a mix both the methodologies in one study (Walsh and Wigens, 2003:69). This study uses both methods and this strategy has enabled the research to address a research question (Brannen, 2005:4). Due to the nature and the purpose of the study the author chose the quantitative method. Quantitative study design are specific, well-structured and have been tested for their validity and reliability (Kumar, 2011:103). Quantitative research methods emphasize the appropriate to generalizable statistical findings and are generally more appropriate to nomothetic aims. The quantitative method focuses on measurements and amounts of the characteristic that are displayed by people and events the researcher studies (Rubin and Babbie, 2011:67).

4.3.2 Target population

The target population for this research was classified into four categories, namely church members, clinic workers, school teachers and community garden members. The research was conducted in Cape Town amongst community garden projects members. A population is defined as a precisely body of people of objects which are under attention in a study for statistical purpose (Collis and Hussey, 2009:62). A population consists of all the elements that have a chance of being sampled to participate in the study (Churchill *et al*., 2002:630).

According to Bhattacharya (2006:81-82), the population is said to be completely defined if at least the following terms are specified:

- Elements project managers and people involved with project manages;
- Sampling unity professionals involved in the build environment;
- Extent area of the study and its limitations; and
- Time period of the research.

A sampling bias is the sample which is not representative of the study population, and hence does not allow generalization of the sample results to the entire study population (Bryman and Bell, 2003:91).

4.3.3 Population validity

Population validity refers to the ability to generalize from the sample of individuals on which the study was conducted to the large population of individuals (Johnson and Christensen, 2012: 257). Burns *et al.,* (2008:427), defines population validity as whether a sample of participant's responses is an accurate assessment of the target population. The question that should be asked is to what extent is the sample really representative of the target population?

Validity determines whether the research truly measure, that which it was intended to measure or how truthful the research results are (Golafshani, 2003:599). There are three major forms of validity can be identify, namely content validity, criterion-related validity and construct validity. According to Cooper and Schindler, (2008:289-320) validity is the ability of a research instrument to measure what it is intended to measure.

4.3.4 Sampling selection and methodology sampling

Panneerselvam, (2004:12) defines sampling plan as a mechanism by which the sampling units of a study selected from the sampling frame of the population. However it does affects costs and time to conduct the study, hence it should be selected with the utmost care. Kothari (2004:153) defines a sample design as a plan to obtain a sample from the sampling framework and it is determined before any data collected. The sampling is an indispensable technique of behavioral research as the research work cannot be undertaken without the use of sampling (Singh and Nath, 2007:160).

The stratified random sampling technique was used amongst all the respondents that were covered at different community members in Cape Town. The reason was because of the serious imbalance in the gender and race distribution. It was found important to stratified the population and avoid skewing the results towards one group of people. Stratified random sampling technique involves dividing the population into homogeneous subgroups, and then taking a simple random sample from each group. The stratified random sampling methods are the most efficient and it is a better choice when differentiated information is needed regarding various echelons within the population (Wamocha *et al*., 2012:2015).

4.3.5 Sample size

Due to the nature of the study the sample has been randomly placed at a minimum of 100 respondents. Bhattacharya (2006:101), explain sample as a subset of the population sample design. The best way to decide on a sample size is by considering factors such as relevance of the population, parameters of interest, the sampling frame, the type of sample, sample size required and the cost involved (Blumberg, 2008:237). The effect of increasing the size sample size is to reduce the sampling. Calculating sample size requires a measure of the variability of differences usually the standard deviation or variance to be expected in the population.

4.3.6 Method of data collection

The method of data collection is to obtain information by making use of a structured questionnaire. The main reason for the selection of these methods is that if there is any ambiguity it will be cleared on the spot. A questionnaire is defined as the most common data collection instrument in the business research (Cooper and Achindler, 2008:329).
Brace (2008:2), points out five steps to design a questionnaire, namely:

- Deciding about question wording, depending on the types of the questions,
- Arrangement of the questions in the questionnaire in appropriate sequence and also deciding on the format of the questionnaire,
- Pre-testing questionnaire,
- Reviewing the questionnaire for improvements and
- A structured questionnaire is used to collect the required data.

4.4 DATA ANALYSIS

The Software Program for Social Science (SPSS) was used for data analysis. It was used, because of its effectiveness reliability and friendly user qualities. The SPSS helps in analyses of data, compile appropriate tables, examine relationship among variables and perform a test of statistical significance based on research questions (Babbie *et a*l., 2001:583).
The data was converted into graphs and tables for easy reading and comparison where necessary. Data analysis investigates variables, as well as their effects, relationship and patterns of environment with the world (Welman *et al.*, 2005:211). Data analysis is

analysed in the manner that ensures that research question and hypothesis are addressed to ensure that the research objectives are achieved (Anderson *et al*., 2001:97).

4.4.1 Validity and reliability

Reliability defined as different researchers will obtain the same finding if they repeat the same study. Reliability concerns the consistency of the results, the robustness of the measure and whether it is free of random (Golafshani, 2003:599). Schultz and Whitney (2005:87), resist that the process of validation does not seek to determine whether the test itself is valid, but rather whether the interferences and conclusions that are made on the bias of test scores are valid.

4.4.2 Sampling bias

Bias occurs when some unintended factor confuses or changes the results in a way that can lead to incorrect conclusions. Bryman and Bell (2003:91), define a sampling bias as the sample that is not representative of the study population. Sampling bias occurs when some members of the population are more likely to be included in a sample than others. Johnson and Christensen (2012:217), define the bias sample as the sample that is systematically different from the population.

The research made use of the stratified random sampling method in order to avoid chances of having sampling bias. Macnee (2008:123), assert that when using a random sampling method every member of the population has a chance of being selected. The use of random samples rather than convenience samples is one of the ways how investigators can control their conscious or unconscious biases.

4.5 ETHICS CONSIDERATION

Research ethics address the question of which ethically relevant issues that are caused by the intervention of researchers can be expected to impact on people they research (Flick, 2011:215). People may be willing to disclose a lot of personal information during research and hence the research should make sure treats both the participant and the information that they provide with honesty and respect (Dawson, 2002:146).

4.6 SUMMARY

This chapter dealt with the research design and methodology which was used to conduct the research. It included the research design, theoretical aspect of research methodology, research strategy, study population, sampling methods, methods of data collection, and ethical consideration.

CHAPTER 5:
PRESENTATION AND DISCUSSION OF RESULTS

5.1 INTRODUCTION

This chapter presents and discusses the results of the study which summarised and presented in frequency distribution charts and tables. The aim of the study as mentioned in chapter One, was to: 1) to identify the causes for the failure of community gardens within the Cape Town Metropolis, and 2) To analyse the benefits and the use of community garden projects, and 3) To identify critical success factors related to community garden projects and 4) To address food insecurity among poor residents.

The research was conducted amongst individuals who are church members, school teachers, clinic staff members and community garden project members in Cape Town Townships. A total of 100 individuals in the community were interviewed. The research instrument was constructed, distributed to a few interviewees (10), and then reconstructed to meet the standards expected from an instrument of questionnaire of its caliber.

The instrument was divided into three sections the first section was primarily biographical. The purpose was to assist with screening to see the relevance of the respondents to the questions. The second section dealt specifically with the variables that would be measured. This has been identified and discussed in the preceding literature review chapters.

The third section probed other issues that to competencies which are required to succeeding critical Food Security Community Gardens as poverty alleviation project in Cape Town. The SPSS (Software Program for Social Sciences) was used for analysis because of its effectiveness and user friendly qualities. The section below discuss in detail, the data that was collected and analysed it accordingly.

The order of data analysis and interpretation has been purposely placed as biography. The order is followed as set in the research instrument, with Section B and C being last. Section C is a special section because it is open-ended and respondents were free to

state whatever it was that they thought was important. It was omitted in the questionnaire to ensure clarification. Each question that was asked is provided, together with the purpose for asking the question. Where possible known literature, which relates to particular question is acknowledged and referenced accordingly.

5.2 SECTION A BIOGRAPHY

The questions that were asked in this section including the following: How long you've been involved on a community garden projects? Have you ever started a garden project as a business yourself before? What is your highest qualification? What is your role in the community garden project? What types of community garden projects exist around your community? What types of vegetables do you produce in your garden projects? What is your gender?

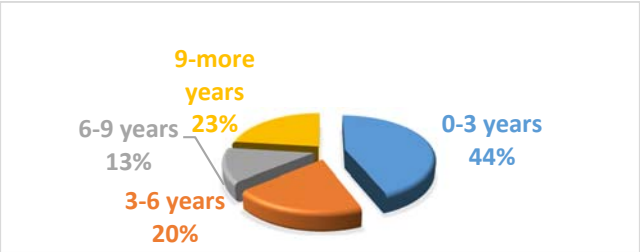
These questions intended to sought to establish an understanding of the type of respondents in terms of their involvement on the garden projects. The number of years involved on such projects as an indicator of how much they understand in relation to critical Food Security Community Gardens as poverty alleviation projects in Cape Town.

5.2.1 Pleasse indicate how many of years you've been involve on a community garden projects?

The intentions of this question was to determine how many years the respondents have been involve on community garden projects. This question is also meant to determine the involvement and experience of the participants around community garden projects. It was revealed that most respondents have less exposure and involvement on community garden projects. Nevertheless there was also a number of respondents who where involved in community garden projects.

There more you are involved in such projects gives you a chance to learn more about up and downs and what you should expect in the near future as a project leader and the follower. Experience on community garden projects by project leaders and followers increase the chance of being success during implementation of such projects. The results of the study are shown in Figure 5.1 below.

Figure 5.1- Work experience



Source: (Own compilation: Analysis and interpretation, 2017)

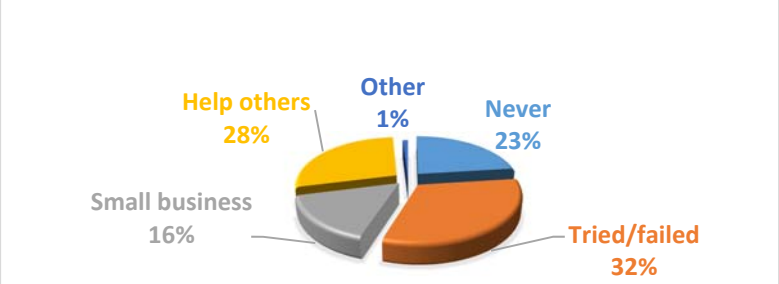
Figure 5.1 above illustrates that a majority of the respondents with (44%) agreed that they have been involved on community garden projects from 0-3 years, followed by 23% of the respondents who were involved on community garden project from 9 years or more.

There are 20% of the respondents who have been involved on community garden project from 3 to six years, followed by 13% of the respondents who believe that they have been involved on community garden projects from six to nine years. The more experience you have on community garden projects the better chances of being successful in execution of such project.

5.2.2 Have you ever started a garden project as a business yourself before?

The intentions of this question was to determine whether the respondents have started community garden projects as a business before. The results of the study are shown in Figure 5.2 below.

Figure 5.2- Entrepreneurship



Source: (Own compilation: Analysis and interpretation, 2017)

The figure 5.2 above illustrates that a majority of the respondents with (32%) agreed

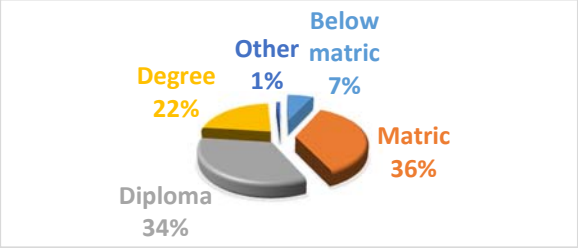
that they have started their own community garden projects, but failed, followed by 28 of the respondents who only help the others to start their own business. The other 23% of the respondents agreed that they never started any business, neither helping others, followed by 16% of the respondents who have small community garden projects as a business. The other 1% did none of the above.

Community garden project have been seen as strategy used as poverty alleviation among poor communities. This happened whereby one or group of community members open vegetable garden to grow different types of vegetables. It's either they grow for food or as a business to generate an income, especial on the unemployed people.

5.2.3 What is your highest qualification?

The intentions of this question was to determine the level of education on the respondents. The results of the study are shown in Figure 5.3 below.

Figure 5.3- Qualifications



Source: (Own compilation: Analysis and interpretation, 2017)

Figure 5.3 above illustrates that a majority of the respondents with (36%) agreed that they held a grade 12 certificate, whereas 34% indicated that they hold a diploma. The other 22% held degree, followed by 7% of the respondents who are below matric. It is only 1% who have other qualification rather than below matric, matric, diploma and a degree.

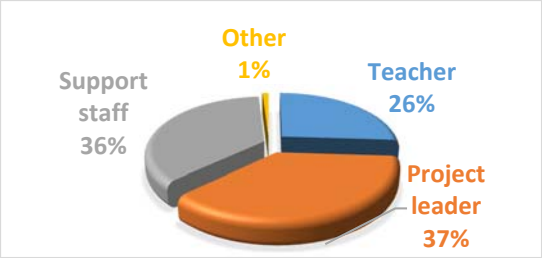
The results show that the majority of the respondents have a matric this means that they have basic education that enables them skills to use on community garden projects. It is important to have a qualify person on community garden projects, because

there is technical and operational skills that are needed to keep the project going.

5.2.4 Please indicate your role in the community garden projects?

The intentions of this question was to determine the role of the respondents on community garden projects. The results of the study are shown in Figure 5.4 below.

Figure 5.4- Occupation



Source: (Own compilation: Analysis and interpretation, 2017)

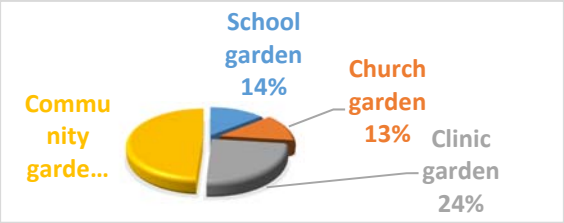
The figure 5.4 above illustrates that a majority of the respondents with (37%) agreed that they have been involved on community garden projects as project leaders, followed by 36% who are support members.

The other 26% of the respondents are teachers, but only 1% who are none of the above. The results have shown that most respondents are project leaders and support staff, which are critical to any project to ensure success.

5.2.5 Please indicate the types of community garden projects exist around your community?

The intentions of this question was to determine the type of community garden projects exist around their community. At this study project leaders and support staff were the most participants. It was followed by a number of teachers who also formed part of this empirical study. This give confidence in the information received that indeed is the relevant one into the study. They are different community garden exist around communities, such as clinic, church, school and community. The results of the study are shown in Figure 5.5 below

.**Figure 5.5-Community garden types**



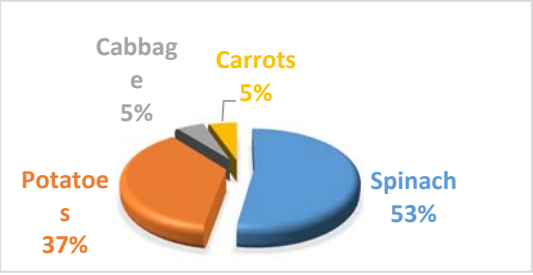
Source: (Own compilation: Analysis and interpretation, 2017)

The figure 5.5 above illustrates that a majority of the respondents with (49%) agreed that the type of vegetable gardens around is community gardens, followed by 24% of the respondents say clinic gardens also exist. The other 14% of the respondents confirmed that there are school gardens as well, followed by 13% of the respondents who also claim that church gardens also exist. Land tenure or ownership is critical to success of any community garden project, schools, clinic, and church spaces considered safe than some community spaces. It vital important to use clinics, churches, and schools spaces to grow vegetables as they are much secured from theft and animals around the community.

5.2.6 Please indicate the types of vegetables do you produce in your garden projects?

The intentions of this question was to determine whether the respondents produce different types of vegetables in their garden projects. The results of the study are shown in Figure 5.6 below.

Figure 5.6- Vegetable types



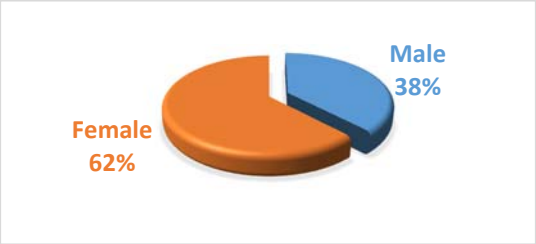
Source: (Own compilation: Analysis and interpretation, 2017)

The figure 5.6 above illustrates that a majority of the respondents with (35%) agreed that cabbage is the type of vegetable they use the most, followed by 30% of the respondents who use spinach. The other 21% respondents produce potatoes on their gardens, followed by 11% who said they use tomatoes. Only 3% who says they produce carrots in their garden projects. Spinach, potatoes, cabbages, carrots and tomatoes and other vegetables can be grown by anyone at any place as long as you have understanding of their requirement and the growing season and harvest time. These vegetables contain all necessary nutrients that are required on someone's diet.

5.2.7 Please indicate your gender

This question was to determine wether the respondent was a male or female. The result s of the study are shown in Figure 5.7 below.

Figure 5.7- Gender



Source: (Own compilation: Analysis and interpretation, 2017)

The figure 5.7 above illustrates that a majority of the respondents with (62%) which are females, and followed by 38% of the respondents who are males. This study has shown that women have played a critical role in fighting against poverty in their communities. However the males who supposed to be hard workers to make sure that there is food on the table for their families.

Women in leadership has played a significant role in many countries. Nevertheless opportunities for women in leadership are very few, even if they are in leadership role they have a fear that mans will always criticize them. There are more mans in leadership, but opportunity must be also given to the women as well.

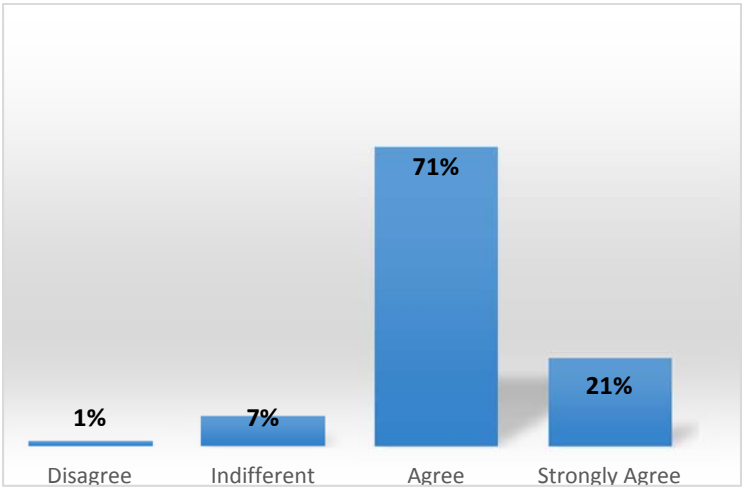
5.3 Section B- The critical success factors for community garden projects

This section presents and discusses the critical success factors for community garden projects. The respondents were required to rate the qualities of critical success factors for community garden projects. The rating scale was between 1-5 with 1 being strongly disagree, 2-Disagree, 3-Indifferent, 4-Agree, and 5-Strongly agree.

5.3.1 It is critical to identify project risk to ensure success of our garden project

The intentions of this question was to determine whether the respondents think that it is critical to identify project risks. The results of the study are shown in Figure 5.8 below.

Figure 5.8- Project risk



Frequency	1	8	79	100
Percentage	1	7	71	21

Source: (Own compilation: Analysis and interpretation, 2017)

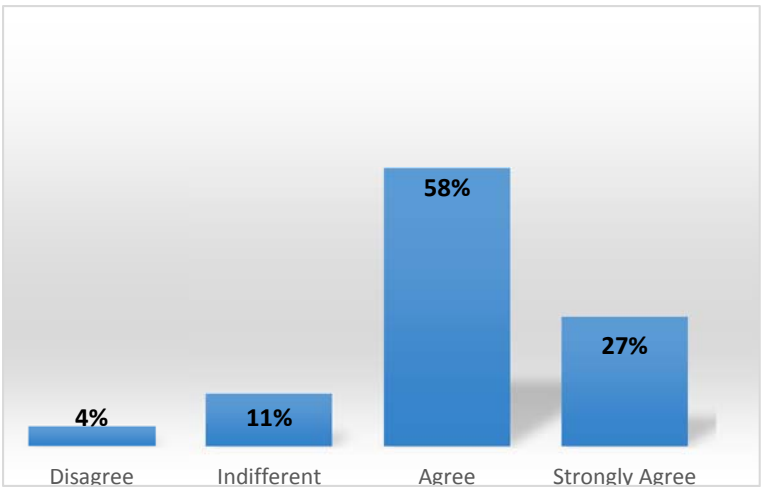
The figure 5.8 above illustrates that a majority of the respondents with (92%) agreed on the question asked. Another 7% of the respondents were indifferent, while 1% of the respondents disagree about the above statement. It is utmost important that to achieve effective project management one should clearly define project objectives. Identify any possible risks that may occur during project execution that will as results to project failure.

Planning project risks and developing a contingency plan to be used at the time risk occurred. The most of the community and garden project members agreed with the question asked that is critical to identify project risk.

5.3.2 It is critical to have horticultural skills to ensure success of our garden project

The intentions of this question was to determine whether it is critical to have horticultural skills to ensure community garden project success. The results of the study are shown in Figure 5.9 below.

Figure 5.9- Horticulture skills



Frequency	4	15	73	100
Percentage	4	11	58	27

Source: (Own compilation: Analysis and interpretation, 2017)

The figure 5.9 above illustrates that a majority of the respondents with (85%) agreed that it is critical to have horticultural skill to ensure success of their garden project. Another 11% respondents were indifferent not sure about the above statement, while 4% of respondents disagree about the above statement.

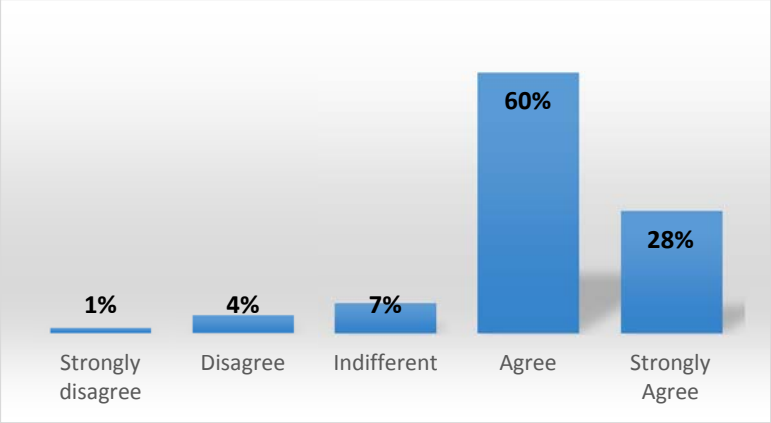
Horticulture is a growing of plants like cut flowers, vegetables, fruits, ornamental plants, and medicinal plants, therefore in order to succeed on community garden projects it is

critical to have horticultural skills. It is difficult to plant vegetables or fruit trees and to grow it up to an accepted standard in the Western Cape sand soil. However you will require effective horticultural training before starting any vegetable or fruit tree garden project. The most of the respondents agreed with the question asked, and shows that horticultural skill are vital for garden project success.

5.3.3 Project leadership is critical for success of our garden project

The intentions of this question was to determine whether project leadership is critical for success of the community garden projects. The results of the study are shown in Figure 5.10 below.

Figure 5.10- Project leadership



Frequency	1	5	12	72	100
Percentage	1	4	7	60	27

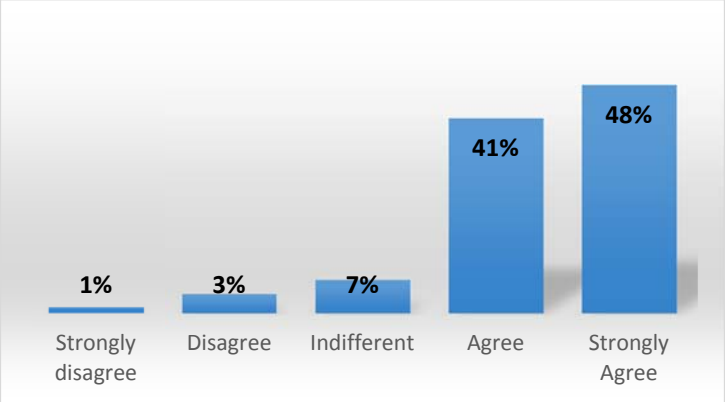
Source: (Own compilation: Analysis and interpretation, 2017)

Figure 5.10 show that a majority (88%) of the respondents believe that project leadership is critical for success of their garden project. The total of 7% of the respondents was not sure about the statement above, while 5% of the respondents disagree with the above statement. Leadership it has been an important factor in successful project execution in a number of studies, therefore leadership is a key ingredient to the success of any projects.

5.3.4 Land tenure is critical for success of our garden project

The intentions of this question was to determine whether land ownership is critical for success of community garden projects. The results of the study are shown in Figure 5.11 below.

Figure 5.11- Land tenure



Frequency	1	4	11	52	100
Percentage	1	3	7	41	27

Source: (Own compilation: Analysis and interpretation, 2017)

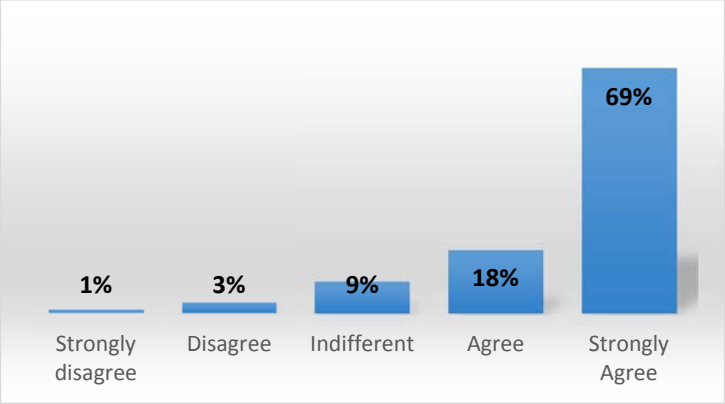
Figure 5.11 above illustrates that (89%) of the respondents agreed that land tenure is critical for success of their garden project. There are 7% of the respondents who were not sure about the above statement, while 4% disagree with the above statement.

The community garden project needs to have an ability to mobilize the necessary resources to achieve its objectives, and land acquisition is the utmost important resource. Any community garden project it is utmost important to have secure land tenure, since growers plan ahead what needs to be planted according to the seasons.

5.3.5 Water accessibility is critical for success of our garden project

The intentions of this question was to determine whether water accessibility is critical for success of community garden projects. The results of the study are shown in Figure 5.12 below.

Figure 5.12- Water accessibility



Frequency	1	4	13	31	100
Percentage	1	3	9	18	69

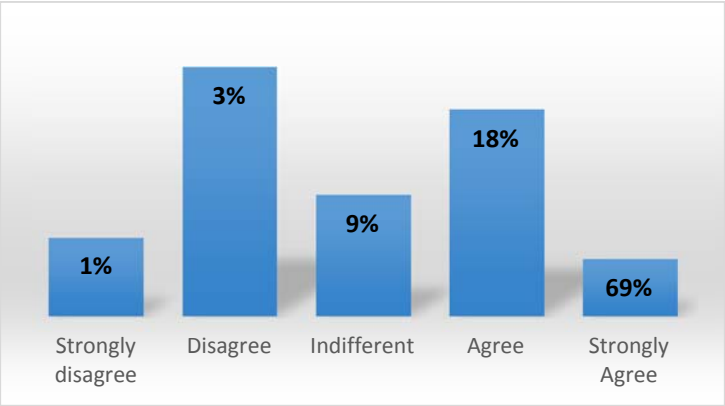
Source: (Own compilation: Analysis and interpretation, 2017)

Figure 5.12 above shows that a majority 87% of the respondents strongly agreed that water accessibly is critical for success of their garden project. Only 9% of the respondents remain indifferent, while 4% of the respondents disagree with the above statement. Water is considered to be the most important resource on community garden projects, hence vegetables need to be watered on planned intervals to ensure growth and quality of the end product. Cape Town is experiencing water crises, this is due to global warming. The rain pattern has changed significantly in Cape Town in the past few years and this will have a negative impact on residents especially the low income families who will not be able to afford water. This dilemma will lead to uncontrollable disease that will leave most people critical ill. South Africa is currently experiencing tremendously drought, however it has a negative impact on food security in general. The issue of water scarcity in South Africa will have adversely impact on food production and food health.

5.3.6 We've skilled project leader in our community garden project

The intentions of this question was to determine whether the project leader has skills or not for the community garden projects. The results of the study are shown in Figure 5.13 below.

Figure 5.13-Project leader



Frequency	11	46	63	92	100
Percentage	11	35	1	29	8

Source: (Own compilation: Analysis and interpretation, 2017)

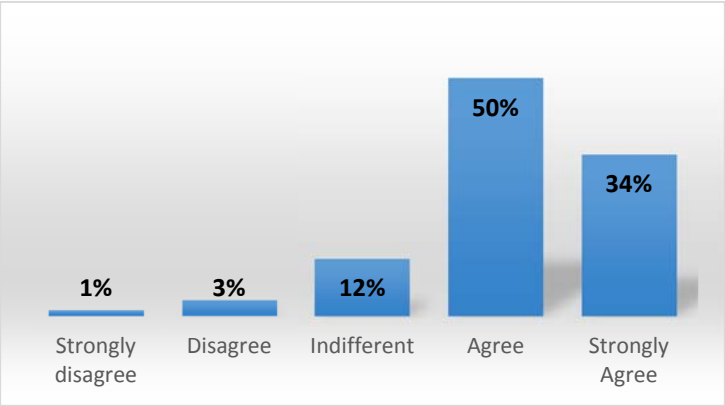
The figure 5.13 above shows a majority of 46% of the respondents disagree that no skilled project leadership in their community garden project, followed by 37% of the respondents who agree with the above statement. There is only 17% of the respondents were indifferent. The project leader has a responsibility to accomplish for the project being completed within specifications, on time, and within budget.

5.3.7 Effective communication from our project leaders is the key to success of our garden project

The intentions of this question was to determine whether the respondents thought that effective communication from project leaders is the key to success of community garden projects. To any project be small or big effective communication is the key success factor.

Communication play a critical role in ensuring that everything is understood by everyone, otherwise if not it will have a great impact on project success. Many organization fail to understand the importance of effective communication, as it will have an impact on productivity. Communication within an organization is a fundamental tool, however an effective communication must be established to ensure project success. The results of the study are shown in Figure 5.14 below.

Figure 5.14- Effective communication



Frequency	1	4	16	66	100
Percentage	1	3	12	50	34

Source: (Own compilation: Analysis and interpretation, 2017)

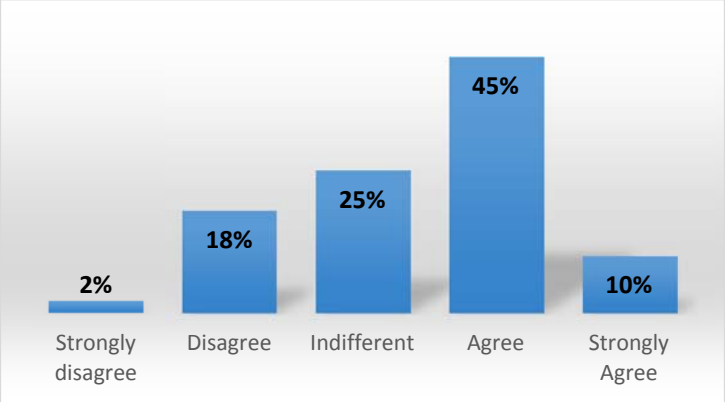
A majority of the respondents (84%) in figure 5.14 agreed that effective communication from their project leaders is the key to success of their garden project. Only 12% of the respondents are indifferent, while 4% disagree of the above statement. Communication plays a pivotal role in success of a project. An effective leader should establish a project communication plan to ensure that the right information goes to the right people at right time. This will ensure that all the project stakeholders are involved, which will assist with effective decision making and promotion team work. Project communication is a key knowledge area with process that provides critical links among people and information, which are both necessary for successful communication.

Most projects finds it difficult to achieve the designated objectives due to lack of effective communication between the project leader and within subordinate. Communication must become a culture of an organization or project in order to succeed, without an effective communication the project will never succeed. To ensure quality management within an organization top management must ensure that communication is a day-to-day activity to ensure continues business success. An effective communication has a negative impact on project and business success in general.

5.3.8 We eat vegetables at home, school or church every day

The intentions of this question was to determine whether the respondents thought that they eat vegetables at home, school or church every day. The results of the study are shown in Figure 5.15 below.

Figure 5.15-Vegetable availability



Frequency	2	20	45	90	100
Percentage	2	18	25	45	10

Source: (Own compilation: Analysis and interpretation, 2017)

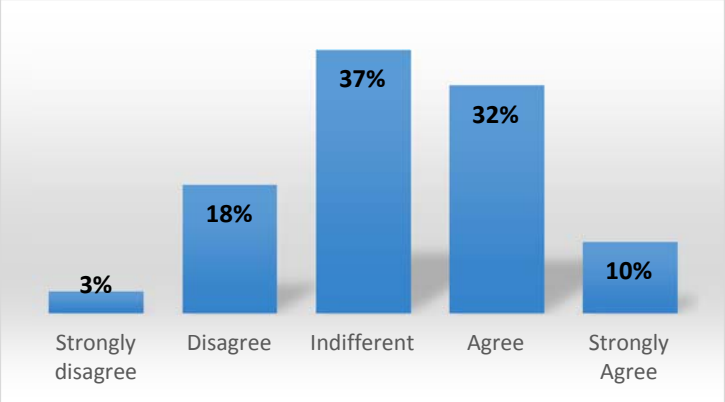
Majority of the respondents in figure 5.15 above (55%) agreed that they eat vegetables at home, school or church every day, followed by 25% of the respondents being indifferent with the statement above. There are 20% of the respondent disagreed with above statement. Food security is about inability to access food rather than the amount of food available. To be food secured it means as a community member you are able to produce sufficient amount of different types of fruits and vegetables to sustain your household.

5.3.9 We don't eat more than 5 different types of vegetables everyday

The intentions of this question was to determine whether the respondents thought that they eat more than 5 different types of vegetables every day. Availability and accessibility of food on a constant basis is regarded as food security. Nevertheless one there is a lack of food on a daily basis that is an indication of food insecurity and it need

to be addressed. Most poor families doesn't have access to fresh different types of vegetables at their home, hence the high rate of obesity among people especially the poor families. The results of the study are shown in Figure 5.16 below.

Figure 5.16-Eat more than 5 different vegetables



Frequency	3	21	58	90	100
Percentage	3	18	37	32	10

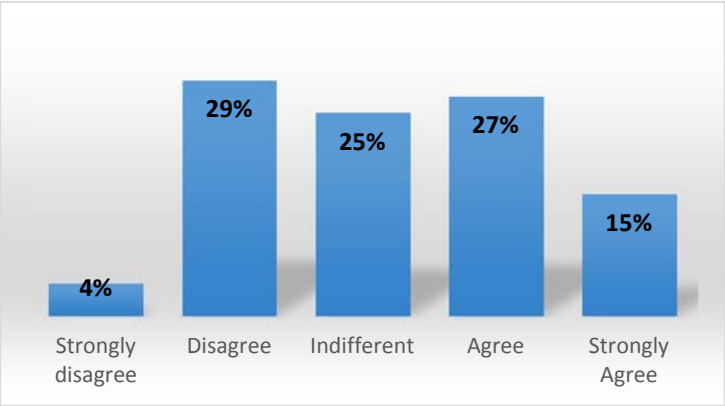
Source: (Own compilation: Analysis and interpretation, 2017)

The figure 5.16 above illustrates that a majority of the respondents (42%) agreed that they eat more than 5 different types of vegetables every day, followed by 37% of the respondents were indifferent on the above statement, followed by 21% of the respondents disagree with the above statement. Food security in Southern Africa is a developing problem and is evidenced by the eradication of hunger programs. In the townships were the poorer leaves it is rare to eat more than five different types of vegetables, because of the affordability or access to fresh vegetables and fruits.

5.3.10 sometimes we spend a day without eating any vegetable

The intentions of this question was to determine whether the respondents sometimes spend a day without eating any vegetable. Low income families are struggling to get fresh food on a daily basis, this is an indication of food insecurity in the country in general. Most people go too badly without any prepare meal and this need attention and I will results in escalation of crime and other factors. The results of the study are shown in Figure 5.17 below.

Figure 5.17- Spend a day without food



Frequency	4	33	58	85	100
Percentage	4	29	25	27	15

Source: (Own compilation: Analysis and interpretation, 2017)

The figure 5.17 above illustrates that a majority of the respondents (42%) agreed with the statement that sometimes we spend a day without eating any vegetable, followed by 33% of the respondents who disagreed on the above statement.

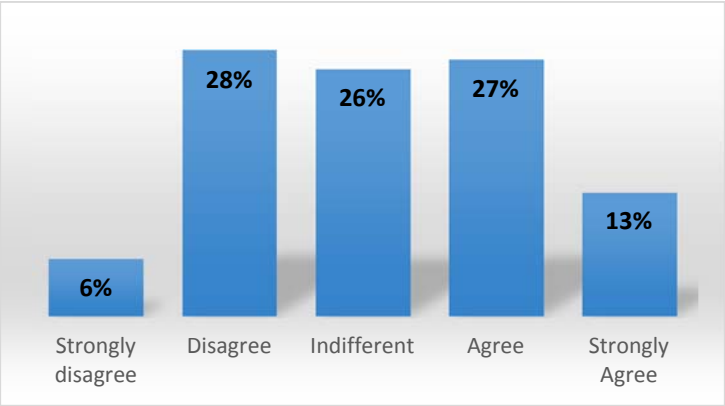
There are only 25% of the respondents were indifferent from above statement. There is a high rate of food insecurity among poor communities in Cape Town, 80% of the household is food insecure. The results showed that yes indeed respondents sometimes spend a day without a proper meal.

5.3.11 We get our vegetables from our community garden project

The intentions of this question was to determine whether the respondents get their vegetables from their community garden projects. Community garden project were designed to serve the purpose of addressing food security, especially among low income families.

Most of these initiative is difficulty to adapt on this constantly changing environment. Community garden are the best ways of accessing fresh food at the low cost, but due to unforeseen factors this initiative has become less productive. The results of the study are shown in Figure 5.18 below.

Figure 5.18-Vegetable are from community gardens



Frequency	6	3	60	87	100
Percentage	6	28	26	27	13

Source: (Own compilation: Analysis and interpretation, 2017)

The figure 5.18 above illustrates that a majority of the respondents (40%) agreed with the statement that they get our vegetables from their community garden project, followed by 34% of the respondents who disagreed on the above statement.

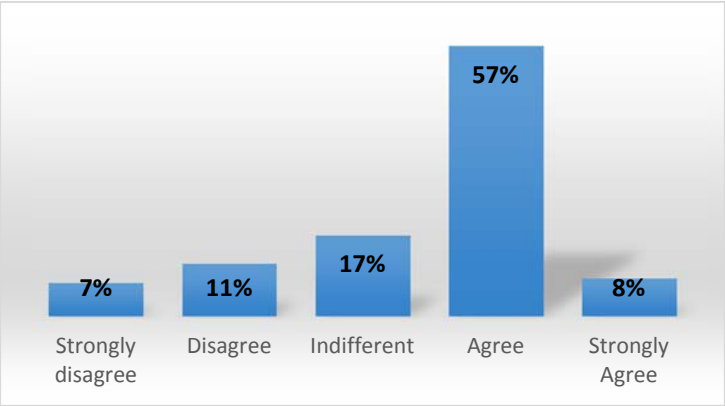
There are only 26% of the respondents were indifferent with the above statement. The results showed that most of the respondents agreed that they are not getting their fresh vegetables from their community garden projects.

5.3.12 The community garden team is educated on garden skills

The intentions of this question was to determine whether the respondents thought that the community garden team is educated on garden skills. The purpose of community garden is not only to provide with fresh food, but also to educate the residents. When people gathered together on a community garden it gives them an opportunity to share ideas and also to transfer knowledge of which that is most critical thing.

Teaching people about gardening skills is very important in order to equip them and to ensure that they are able to grow their own food at their own spaces. Nevertheless this can have a positive impact on crime rate in the community. The results of the study are shown in Figure 5.19 below.

Figure 5.19- Team is educated on garden skills



Frequency	7	18	35	92	100
Percentage	7	11	17	57	8

Source: (Own compilation: Analysis and interpretation, 2017)

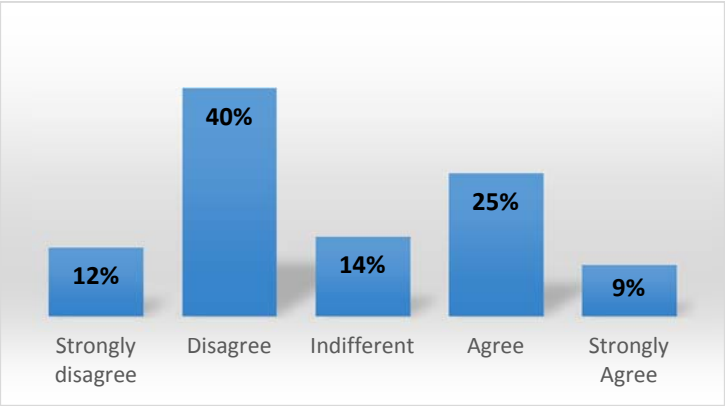
The figure 5.19 above shows that a majority (63%) of the respondents agreed that the community garden team is educated on garden skills. The only 18% of the respondents disagree with the above statement, and followed by 17% of the respondents who are indifferent. The results showed that community garden team indeed is educated on gardening skills.

5.3.13 Children are given an opportunity to apply gardening skills

The intentions of this question was to determine whether the respondents thoughts that children are given an opportunity to apply gardening skills. The involvement of children on gardening is the old traditional way of keeping the children busy and keeping them from the street. It is important to give opportunities to children so that they can be able to play at the same time be aware of the importance of growing your own food.

Parents should in courage their children to play a role in community garden projects. In most developed countries they have invested on children as they are the future of tomorrow. Most children in these days don't believe that food is from the ground, if you asked them where the food come from the answer is is at retails. The results of the study are shown in Figure 5.20 below.

Figure 5.20- Children are given opportunity



Frequency	12	52	66	9	100
Percentage	12	40	14	25	9

Source: (Own compilation: Analysis and interpretation, 2017)

Figure 5.20 above shows that a majority (52%) of the respondents disagree that children are given an opportunity to apply gardening skills, followed by 34% of the respondents who are agreed.

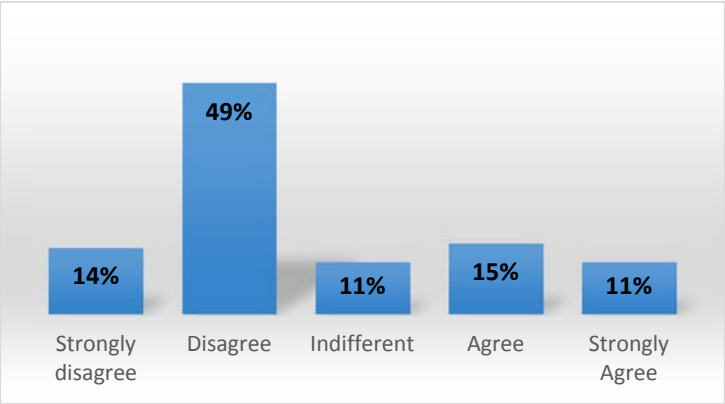
The 14% of the respondents were indifferent with the above statement. It can be concluded that children are not exposed on how to produce and maintain vegetables by the respondents.

5.3.14 Our community parks and gardens are not used to educate and share knowledge among community members and children

The intentions of this question was to determine whether the respondents thoghts that vegetables from the retailers are not fresh compare with vegetables from our community garden projects. Community parks and gardens are not only used for the recreational purposes,but also for eduaction.

The exposure of the community including children is the most critical thing to do. This will give opportunity tho many people who were interested in growing their own food and for busines purposes. The results of the study are shown in Figure 5.21 below.

Figure 5.21 – Parks and garden are not used to educate children



Frequency	14	63	74	89	100
Percentage	14	49	11	15	11

Source: (Own compilation: Analysis and interpretation, 2017)

Figure 5.21 above shows that a majority (63%) of the respondents disagree that community parks and gardens are being used to educate and share knowledge among community members and children. Only 11% were indifferent, while 26% agreed with the above statement. The community parks are used together with vegetable, and fruits as recreational, whereby children have a chance to play and share some ideas including the adults. The results showed that community parks are not being used to educate children, and allow them to share ideas.

5.4 Section B- Additional comments

5.4.1 Please list here any other issues you may want to highlight relation to the above put them in point form

The purpose of this request was that the respondents could add whatever additional information they felt could be beneficial to this study. It was not in the questionnaire as per annexure B. 68% of the respondents did respond, whereas on the other hand 32% didn't respond to the question at all. The majority of the respondents did respond to the question, but not all information completed. The respondents highlighted critical things that effect community garden projects success. The majority of the respondents highlighted that there is lack of support from government. This is evidently by the lack of

resources and proper infrastructure (like, greenhouses, growing tunnels and proper irrigation system).

In South Africa every year in March there is a celebration of human rights, however till to day Africans are suffering from persisting poverty and diseases. The South African government has a critical role to play on food security among poor South Africans. The government has to sponsor these poverty alleviation strategies like community garden projects to ensure success. Provide adequate skills and material that is needed like greenhouses and other important structures. According to the results it can be concluded that government and councilors are not doing their work that supposed to be doing. Any project to be successful it will require all the support necessary to succeed. Otherwise it will be difficult for such community garden projects to be sustainable.

Another was highlighted by the respondents was lack of leadership and training among community members. Due to the lack of knowledge of critical success factors for community garden projects as results garden projects keep on failing. The results have shown that project leadership is critical for success of the community garden projects. It can be concluded from the results that leadership is key to success of the community garden projects.

5.5 Section C- Identify five most important things for effective communication as critical success factor for community garden projects

This section presents and discusses the importance of effective communication among community garden project members.

5.5.1 What are the five things that are important for effective communication from start to finish of the project?

A majority of the respondents (90%) did respond, whereas 10% didn't not respond and complete the information. The results show that the respondents answered differently and their answer perception about effective communication differs as well. There was no pattern in the way that the respondents answered this question. However, there are few characteristics that stood out and are agreement with the study and these presented below in no order of importance. Attending meetings on planned intervals,

feedback, and language used during communication process, constant monitoring and project mile stones. In order for the communication to be effective, the community garden project leaders should adopt the importance of effective communication as mentioned by the respondents.

5.5.2 What are the five effects caused by a bad communication in your community garden projects?

The purpose of this was to determine what five effects caused by a bad communication in community garden projects. A majority of the respondents (85%) did respond, but not completed the information. On the other hand 15% didn't respond at all to the information. There was no pattern in the way that the respondents answered this question. However, there were few characteristics that stood out and are agreement with the study, and these are pointed out below in no order of importance.

5.5.3 What are the five causes of a bad communication in your community garden projects?

The purpose of this to do determine what five causes of a bad communication in your community garden projects. A majority of the respondents (90%) did respond, but not completed the information, while 10% didn't respond at all to the information. There was no pattern in the way that the respondents answered this question. However, there were few characteristics that stood out and are agreement with the study, and these are pointed out below in no order of importance. There is a Lack of commitment, vision, mission, leadership, skills, motivation and poor planning.

5.5.4 If you would be responsible for the development of effective communication channels in your community garden projects, what are the five things you would do?

The purpose of this was to determine if the respondents are responsible for the development of effective communication channels in their community garden projects. A majority of the respondents (92%) did respond, but didn't complete the information, while 8% didn't respond at all to the information. There was no pattern in the way that the respondents answered this question. However, there were few characteristics that

stood out and are agreement with the study, and these are pointed out below in no order of importance. The proper planning, regular meeting, understood by everyone, use of language, and listing of the objectives is very crucial.

5.6 Summary

This chapter presented and discussed the results of the survey. The aim was to present the results in the form of graphs and tables, and analyses them in order to answer the questions that were asked in the questionnaire. The responses that were received from the respondents were in agreement with the literature review in chapter two of this research document. The respondents agreed that community garden projects are indeed critical poverty alleviation strategies. The results also show that the respondents agree that leadership, land tenure, water accessibility, and identifying project risk are critical to success of the community garden projects. The lack of leadership skills and lack of effective communication remain a big challenge as it is highlighted by the respondents. The next chapter summarizes the results, concludes the study and makes recommendations based on the survey's findings.

CHAPTER 6:
FINDINGS, CONCLUSION AND RECOMMENDATIONS

6.1 INTRODUCTION

The objectives of this study was to identify the causes for the failure of community gardens within the Cape Town Metropolis. To analyse the benefits and the use of community garden projects. To identify critical success factors related to community garden projects. To address food insecurity among poor residents. South Africa faces shortage of food among residence and especially in informal areas are most affected by the situation. In South Africa specifically the impact and incidence of urban agriculture appears to be limited, even though poverty levels are higher.

South Africa is facing a persistent food security problem as results of food price rise. Government must promote community garden projects as poverty alleviation projects among the poor families, who can't access fresh vegetables constantly. Urban community garden project has a long history and has been used as poverty alleviation in many years ago. In the previous chapter the findings of the study were presented in relation to the research objectives, as outlined in chapter one of the document.

This chapter presents the findings in respect of the data that was collected from the survey, and the objectives of the previous chapters are also discussed. The purpose of discussing the objectives of the previous chapter was to determine whether there is a correlation between the new data from the findings and the currently available data and information. The recommendations point out areas of improvement on community garden project leaders. To help new and upcoming community garden projects leaders by providing them with the necessary strategic tools that are required to deliver successful community garden projects.

6.2 SUMMARY OF OBJECTIVES OF PREVIOUS CHAPTERS

The concept was introduced in the first chapter and the importance of the study was also highlighted. The brief literature review in the first chapter highlighted a gap for the study which helped to structure the problem statement. The problem statement was logically followed by stipulation of the research objectives, including the research design

and research methodology. The target population was discussed including the sample size, sampling selection and method of sampling as well as the limitations of the study. Ethical consideration was also discussed, and the nature of the research was clarified as having no ethical problems.

Chapter two focused on the food security issues and its negative impact among poor families. However this chapter discusses the problems and challenges that are facing food security in the world. One of the challenges that were highlighted within the food security chain was global warming. Global warming has threatened food security in the world as it has a negative effect on climate change that impact on agriculture and water scarcity. The author also highlighted the effect of inequality on food security, however people are still divided according to their culture and ethnicity and this has negative impact on disadvantaged background poor families. The author continue mentioning the problem caused by food security in the world, the way in which poverty contribute into crime and other unethical behavior among poor families. The author also highlighted the high level of poverty among low income families and how food price affected them. The last thing being highlighted was the role of agriculture on food security, here the author look at how agriculture and horticulture can be used as a poverty alienation strategy. Furthermore the effect of climate changes on food security and inequality among South Africans.

Chapter three has discussed the issues around food security and its effect in South Africa. However, most South African youth are experienced poverty and unemployment. This chapter talks about the role of agriculture in South African citizens. Hence poverty levels are very high among indigenous Africans. This chapter also talks about poverty levels and rural development, after 21 years of democracy indigenous Africans in South African especial rural settings, still facing high levels of poverty and inequality. This chapter speaks about the democracy in South Africa, whereby indigenous Africans still own nothing after indigenous African president took power. This has been indicated by high level of unemployment among youth, poverty, health problems and inequality.
This chapter discussed the South African educational system, whereby most indigenous graduate are struggling to find a formal employment. The language used at primary

school to universities has negative effect on performance of every indigenous student in South Africa especial in rural areas.

Chapter four introduced the research design, theoretical aspects of research methodology and the research strategy. The target population and the sample size, as well as the research objectives were also discussed and including the limitations of the study. The methodology of data collection, sampling selection and method of sampling were discussed. The use of stratified random sampling method was suggested and justified. Assumptions that were made for the research were also discussed, together with the data analysis, validity and reliability, sampling bias and ethical considerations for research methodology and research design. Chapter five presented and discussed the results of the critical success factors, which are required for success of critical Food Security Community Gardens as poverty alleviation projects in Cape Town Metropolis. The results were presented in a form of graphs and tables along with explanations and interpretations accompanying each graph. The results and findings were discussed in detail, with special reference to the research objectives, as set out at the beginning of the study. The chapter concluded by stating that the respondents also are agreed that the existence of the authority gap has a negative impact on project delivery.

6.3 DISCUSSION OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

In chapter six the key point were highlights of the results and findings as discussed in Chapter five, whereby they were brief discussed and recommendations were given. The recommendations and conclusions were based on the researcher's understanding and interpretation of the meaning from the data that was collected.

6.3.1 To identify critical success factors related to community garden projects

The following are the findings:

- Identification of the project risk
- Horticultural skills
- Project leadership
- Land tenure
- Water accessibility

The project needs to have an ability to mobilize the necessary resources to achieve its objectives and land acquisition is the most important resource. Any community garden project, it is important to have secure land tenure, since growers plan ahead what needs to be planted according to the season. From the results it can be concluded that land tenure is critical to success of Food Security Community Gardens as poverty alleviation projects, whereby 89% of the respondents agreed that land tenure is critical for success of their garden project.

Horticulture is a growing of plants like cut flowers, vegetables, fruits, ornamental plants, and medicinal plants, therefore in order to succeed on community garden projects it is critical to have horticultural skills. It can also be concluded from the results that horticulture is critical to success of community garden projects. The 85% of the respondents agreed that it is critical to have horticultural skill to ensure success of their garden project.

The leadership is a key ingredient to the success of a community garden and can help to mobilize resources, and promote membership, belonging, and collective decision-making. Leadership is important for organizing the diverse community member, and identifies the various levels of knowledge and skills. The respondents have indicated that due to inadequate skilled project leader community garden project find difficulties to meet the desirable deliverables. The results also suggest that the project leader should know how to motivate staff members and empowering them to make their own decision about project activities.

Water is the most critical resource, particularly for community garden projects, hence the growing of vegetables require adequate amount of water availability. The accessibility of water plays a part in success of any community garden project; the lack of water availability could have a negative impact. During planning phase of community garden project is important to determine the availability of water before implementation resume. It is clear from the results that water is one of the critical success factors for any community garden projects, whereby 87% agreed with that statement being asked. Project risk is the factor that if happen by a chance, however it has a negative impact on

project success if it does occur. Nevertheless it is very important to identify project risk at the initiation phase of the project and also develop a contingency plan to mitigate the risk. It is critical to investigate the community project risk and identify them, before any implementation stage take place. The results indicated that community garden project risk is critical for success of the project, whereby 92% agreed.

Recommendation: it is recommended that community garden projects required an effective leader in order to succeed. The community garden members rely on project leader to show them the direct and encourage them, thus it is imperative that effective leader should be someone who is exemplary in this regard. It is recommended that a project leader must have a degree or intensive skills in horticulture before attempting to execute any community garden projects. Horticulture has been seen as key success factor specifically for Food Security Community Gardens as poverty alleviation projects. Horticulture has to do with growing of trees, vegetables and therefore a community garden project leader it is critical to have skills. Before starting any community garden projects, one need to consider land security, for many reasons, including water availability as critical success factor. In order to be productive and successful in execution of a Food Security Community Gardens as poverty alleviation projects, land tenure must be acquired and secured and close to water supply and other necessary resources needed to succeed such projects. Project risk must be identified and classified according to its degree to affect the project results. The list of such potential risk must be identified and the development of contingency plan for each risk is vital. Treat each risk on its level of impact it will have on the project results if it does occurred.

6.3.2 To address food insecurity among poor residents

The following are the findings:

- Food like vegetables are not always available for the households
- Households sometimes spend a day without eating any vegetable
- The households are not always get their vegetable from community garden projects

Food insecurity has become significant and growing challenge in the developing countries. There are many things that lead to food insecurity that includes growth of the population, rising of food price, transportation and agricultural costs. Food insecurity

pose large and complex problem and that has led to many diseases and criminology acts. Based on the study food like vegetables are not always available for the households. This is an indication of food insecurity among the residents. The lack of accessibility and availability of food among the residents could have the negative impact on the health and life in general. Malnutrition is an indication of poor diet, therefore this it is government's responsibility to ensure that fresh food if available at all times. The results revealed that most households go to bed without having a balance diet. The 55% and 42% of the respondents agreed that food is not always available at home, church and school. The results also revealed the sometimes the households spend a day without food. Community garden projects are not effective in addressing food insecurity; this was supported by the majority of respondents (40%) who agreed that their vegetables are not always from community garden projects.

Recommendation: It is recommended that the South African government must ensure that food insecurity among poor residents is addressed. The must be effective programmes who are designed to monitor the effectiveness of community garden projects ensure its food security to all residents. Community garden projects are designed with the aim to succeed, however it finds it difficult to address the problem of food security among poor residents. The effective training programmes must be put in place to educate the project members and their leaders on how to run a successful community garden projects. The commitment from the councilor seems to be the vital when it comes to such initiatives. Hence that councilors work hand in hand with its community to ensure quality service delivery. They must fully support the initiative and supply with all necessary resources required by such projects.

6.3.3 To analyse the benefits and the use of community garden projects

The following are the findings:

- Community members are educated on garden skills
- Opportunity are given to children to apply gardening skills
- Community parks and gardens are used to share knowledge

Community gardens has a plenty benefits, not limited to sharing of ideas, producing food for its community and reducing crime. It gives an opportunity to children, whereby

they get close to nature, while enjoying themselves. It provides an opportunity for community to come together and improve the relationship among them. Parks are used as recreational and other community purposes. Parks give an opportunity for children to play and share skills. Education on gardening skills is the most critical thing to do, this equipped individuals about necessary skills to be able to produce food for their families. Poor communities are experiencing food insecurity; this is accelerated by the ongoing of food price rise. Government must make sure that communities are well educated on how to produce their own food to address the food insecurity. The results have shown that indeed community members are educated on garden skills, children are given opportunity to apply gardening skills and community parks are used to share knowledge.

Recommendation: It is recommended that education and training programs on community gardens must be well planned and be carried on the planned intervals for quality purpose it must be monitored. It is also recommended that the must be a program to focus only on children to ensure their maximum participation on gardening projects.

6.3.4 To identify the causes of failure of community garden projects

The following are the findings:

- Lack of project leadership skills
- Lack of effective communication

Project leadership skills are the fundamental to any project to be successful, otherwise there is no way that a project can be able to succeed. Project leadership skills are required for community garden projects in order to achieve its designable objectives. According to the finding lack of project leadership skills are the causes of community garden project failure. This is indicated by the number of respondents who agreed (46%) that indeed lack of project leadership could contribute to project failure. From the results it can be concluded that effective communication if critical for success of any community garden projects. The majority of the respondents (84%) agreed with the statement asked. The effective communication from project leaders is the key to success of their garden project. Communication plays a pivotal role in success of a

project. An effective leader should establish a project communication plan to ensure that the right information goes to the right people at right time. This will ensure that all the project stakeholders are involved, which will assist with effective decision making and promotion team work. Project communication is a key knowledge area with process that provides critical links among people and information, which are both necessary for successful communication.

Recommendation: it is recommended to a community garden project leader to have effective communication, as poor communication can lead to the following disrespect, project delay, unsustainability and failure of the project. Effective communication has been seen as role player in success of many projects, and always leads to project completion and successful deliverables. It is also recommended that project leadership must have relevant leadership skills, especially for community garden projects. To any project the lack of leadership skills always be the cause of project failure, therefore it utmost important to ensure that the project leader is equipped with necessary skills.

6.4 CONCLUSION

The main objectives of this research were to identify the causes for the failure of community gardens within the Cape Town Metropolis. To analyse the benefits and the use of community garden projects, to identify critical success factors related to community garden projects and to address food insecurity among poor residents.

This research has revealed that causes of failure of the critical Food Security Community Gardens as poverty alleviation projects, such as:

- Lack of project leadership skills
- Lack of effective communication

It is important for further research to identify other critical success factors that are specifically on Food Security Community Gardens as poverty alleviation projects. The much emphasis should be placed on horticultural training, leadership skills and on effective communication as well. Future studies should focus on identifying the project risk pertaining to community garden projects. This study didn’t investigate what project risk were, instead the study focused on whether the project risks are critical or not on community garden project success.

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ANNEXURE A: The questionnaire

Investigation of the failure of critical Food Security Community Gardens as poverty alleviation projects in Cape Town.

Dear Respondent; *This questionnaire is an academic exercise investigating the failure of critical Food Security Community Gardens as poverty alleviation projects in Cape Town. Relate the questions with current or previous community garden project you were involved in.* ***Please do not put your name or any form of identification on the questionnaire.***

……

SECTION A. BIOGRAPHY

Indicate with an X in the relevant box and fill in the blanks when necessary.

1. Please indicate how many years you've been involved on community garden projects?

0-3 years		3-6 years		6-9 years		9-more years	

2. Have you ever started a garden project as a business yourself before?

No, never		Tried but failed		Got a small business		No but always help others do		Other-please explain below	

If other, please specify.

……

3. What is your highest educational qualification?

Below matric		Matric		Diploma		Degree		Other	

Please specify.

.....

4. Please indicate your role in the community garden project?

A teacher/facilitator		Project manager/Leader		Support staff		Other-please explain below	

If other, please specify.

……

5. Please indicate the types of community gardens projects exist around your community?

School garden		Church garden		Clinic garden		Community garden		Other-please explain below	

If other, please specify.

.....

6. Please indicate the types of vegetables do you produce in your garden projects?

Spinach		Potatoes		Cabbage		Carrots	Tomatoes		Other-please explain below		

If other, please specify.

……

7. Please indicate your gender

Male		Female	

SECTION B

Please respond to all questions by putting an X in the respective boxes (numbers) corresponding to each statement. Use the following scale: 1= Strongly Disagree, 2 = Disagree, 3= Indifferent, 4= Agree and 5= Strongly Agree.

	Variables	Strongly Disagree	Disagree	Indifferent	Agree	Strongly Agree
0		0	0	0	0	0
1	It is critical to identify project risk to ensure success of our garden projects	1	2	3	4	5
2	It is critical to have horticultural skill to ensure success of our garden projects	1	2	3	4	5
3	Project leadership is critical for success of our garden projects	1	2	3	4	5
4	Land tenure is critical for success of our garden projects	1	2	3	4	5
5	Water accessibility is critical for success of our garden projects	1	2	3	4	5
6	We've skilled project leader in our community garden projects	1	2	3	4	5
7	Leadership is most important for success of our garden projects	1	2	3	4	5
8	Our project leaders encourage us to be part of decision-making process about project activity management	1	2	3	4	5
9	Our project leaders stay out of the way as we do our work as part of empowerment	1	2	3	4	5
10	Effective communication from our project leaders is the key to success of our garden projects	1	2	3	4	5

11	Our community garden projects operate without failure	1	2	3	4	5
12	Our councilor show commitment to our community garden projects	1	2	3	4	5
13	We measure our project success by the amount of vegetables we produced on a weekly basis	1	2	3	4	5
14	Our community garden projects serves our needs on a daily basis	1	2	3	4	5
15	We use our past gardening experience to improve overall quality of our garden project success	1	2	3	4	5
16	Food like vegetables are not always available at home, school or church everyday	1	2	3	4	5
17	We don't eat more than 5 different types of vegetables everyday	1	2	3	4	5
18	Sometimes we spend a day without eating any vegetables	1	2	3	4	5
19	We never lack vegetables at our home, school or church	1	2	3	4	5
20	We get our vegetables from our community garden projects	1	2	3	4	5
21	At our community each home has their own vegetable garden at their backyards	1	2	3	4	5
22	Our vegetable garden project have been operating over two years	1	2	3	4	5
23	We eat from our vegetable gardens every season	1	2	3	4	5
24	Our vegetable garden project has never been successful	1	2	3	4	5
25	Our vegetable garden has higher successful rate every season	1	2	3	4	5
26	It's better to grow your own vegetables than buying them	1	2	3	4	5
27	Our community has vegetable gardens as poverty alleviation strategy	1	2	3	4	5
28	Vegetables can be difficult grown in our community garden proj ects	1	2	3	4	5
29	Our community garden project is constantly providing its	1	2	3	4	5

	community members with fresh vegetables					
30	Vegetable form the retailers are not fresh compared with vegetables from our community garden projects	1	2	3	4	5
31	The community garden team is educated on gardening skills	1	2	3	4	5
32	Children are given an opportunity to apply gardening skills	1	2	3	4	5
33	Our community garden project educated its members so that they can start their own business one day	1	2	3	4	5
34	Our community parks & gardens are being not used to educate & share knowledge among community members & children	1	2	3	4	5
35	We understand the role of agriculture in our communities	1	2	3	4	5

36) Please list here any other issues you may want to highlight relation to the above, put them in point form

- **……**
- **……**
- **……**
- **……**
- **……**

SECTION C

Please answer all the questions by using the space provided.

37) List 5 things that are important for effective communication from start to finish of the project.

1.....

2.....

3.....

4.....

5……

38) List 5 effects caused by a bad communication in your community garden projects.

1.....

2.....

3.....

4.....

5……

39) List 5 causes of bad communication in your community garden projects.

1……

2……

3……

4……

5……

40) If you would be responsible for the development of effective communication channels in your community garden projects, list at least 5 things you would do.

1.....

2.....

3.....

4.....

5.....

Thank you for your cooperation.