

**FACTORS INFLUENCING WOMEN PARTICIPATION IN FOOD SECURITY
PROJECTS IN KENYA: A CASE OF KIAMBAA CONSTITUENCY IN KIAMBU
COUNTY, KENYA**

BY

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**A Research Project Report Submitted in Partial Fulfilment of the Requirements for the
Degree of Master of Arts in Project Planning and Management, the University of
Nairobi**

2016

DECLARATION

This research project report is my original work and has not been presented for academic qualification in this or in any other university.

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DEDICATION

This research project report is dedicated to my mother Alice Nyariki and my wife Zuhura
Maksud

ACKNOWLEDGEMENT

I am sincerely grateful to all those who have contributed in one way or another in my effort to complete this project. I would like to thank my supervisors Ms. Pamela Kimwele and Dr. John Mbugua for their guidance and supervision, knowledge and skills, all which made it possible to write this research project report. Special thanks also go to all the faculty lecturers and extra-mural department staff for the knowledge and wisdom they impacted in me during the course work period and thereafter. My sincere thanks also go to colleagues, friends and classmates who have always encouraged me to move ahead.

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LIST OF ABBREVIATIONS AND ACRONYMS

AIKS	Agricultural Information and Knowledge Systems
EWS	Early Warning Systems
FAO	Food and Agriculture Organisation
HFS	Food security projects
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
KNBS	Kenya National Bureau of Statistics
ZWRCN	Zimbabwe Women's Resource Centre and Network

ABSTRACT

This study sought to investigate the factors influencing women participation in food security in Kiambaa Constituency of Kiambu County. This study was to elucidate the factors of women literacy, access to agriculture information, land ownership and Gender Action Plan policy response influence women participation in food security projects in Kiambaa Constituency. The findings of the study may be valuable in planning for food security by the Kenyan Government. A survey research design was used on a sample of 381 women household members of the Kiambaa arrived at using Krejcie and Morgan's sample size estimation table and was selected through simple random sampling from a target population of 41,931 households in the five divisions of Kiambaa. Data collection was done by the use of questionnaires and interview schedules. In addition, 10 key informants were selected using a systematic random sampling method for triangulation. The data was analysed by the aid of Statistical Package of Social Scientists Program (SPSS). The study found that most women participating in food security projects in Kiambaa Constituency, Kiambu County apply ideas that they learn about farming activities. Smallholder subsistence farmers, especially women, are responsible for food security projects. The study found that women's ability to access agricultural information is key to food security. Agricultural information not only endows one with the power to read and hence be informed, but it also allows one to farm in an effective way. The study further found that women land ownership influence food security since women use land fully for subsistence farming. Subsistence farming mainly provides families' staple food and in the case of extra supply it could be sold to cover for household expenses. The study finally found that Gender Action Plan policy responds to food security in their area but has not been fully implemented. Ineffective Gender Action Plan policy trends hinder improvements in land productivity and land certification project hence affecting food security in Kiambaa Constituency. The study concluded that smallholder subsistence farmers, especially women are responsible for food security projects and contribute substantially to the national agricultural production. Therefore, literacy, access to agricultural information, land ownership and Gender Action Plan Policy response for women farmers are vital for household food security. The study recommended that more women should be encouraged to join women groups which eventually would enable them initiate income generating projects to boost food production for sustainable food security in the area.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Food security is a situation that exists where all people at all times have physical, social, and economic access to sufficient safe and nutritious food that meets their dietary needs and food preference for an active and healthy life (Vuuren,2007). Accordingly, food security can be viewed from a national, household or nutritional point of view. National food security requires both the production and the ability to import food from global markets to meet a nation's consumption needs. On the other hand, food security projects is the year-round access to an adequate supply of nutritious and safe food to meet the nutritional needs of all household members.

Food security has been a basic societal function performed by women (Leeuwis, 2006). The global concern with food security was however noticeable in the early 1970s when there were various international gatherings to address food security (Leeuwis, 2006). According to the World Food Report (2005) the overall world food security situation has not changed much since the 1970s. IFPRI (2004) suggests that the focus of the late 1970s on national food stocks and food supply was shifted in the mid-1980s by increased concern over household access to food. This approach emphasized consistent availability, access and stability or sustenance of food collection within the household. Food security projects (HFS) may further be defined as the ability by all individuals to access an adequate supply of food, on a stable basis, and in a sustainable way. Consistent with that, this study focuses on the ability to attain food security projects (HFS) and identifies the household as the nucleus of food security.

The number of malnourished people in the world had risen to over 1 billion, up from 915 million in 2012 (World Food Report, 2005). About 870 million people are estimated to have been undernourished (in terms of dietary energy supply) in the period 2010–12 (FAO, 2008). This figure represents 12.5 percent of the global population, where generally it is the work of women to ensure food security at the household level. The vast majority of these, that is, 852 million, live in developing countries, where the prevalence of undernourishment is now estimated at 14.9 percent of the population.

In many developing countries, literacy is seen as the key to women's development' which results to a proliferation of women's literacy programmes run by both Governments and Non-Governmental Organizations. Literacy is the process of becoming critically aware of one's reality in a manner that leads to effective action upon it (Davies, 2004). A literate person understands his/her world well enough to deal with it effectively. In the opinion of Edukugho (2002) cited in Imogie (2002), the prosperity of a country depends not on the abundance of its revenue, nor the strength of its fortifications, but on the number of its cultivated citizens, (men and women) of education, enlightenment and character.

Food as an imperative for survival is important in the lives of people. It is important to note that the right to food is a social and economic right enshrined in the constitution of many countries including Kenya. Thus, the achievement of food security is an essential step to overcome poverty and ensure healthy lives in any given country. Women literacy lends itself as one of the crucial factors that have an important bearing on food production and food security (Smith, 2006). In rural communities a lot is entrusted to the less literate subsistence farmers to produce and provide food sustainably. Many of these communities have over the years depended on indigenous knowledge that has been passed orally from generation to generation (Malhaam 2004). Malhaam (2004) further posits that indigenous knowledge is the local knowledge that is tacit, expressive and unique to a given culture or society and is the basis for local-level decision-making including but not limited, to agriculture, health care, food preparation, education, natural resource management, economics, governance, and security. And yet the changing world order has rendered much of this information largely irrelevant (Malhaam, 2004). Thus women literacy is needed if communities can hope to continue to meet their household and national food needs. Smith (2006) recognizes that agricultural farming is one of the most important occupations among rural populations in the world, but most developing countries are 'information-isolated' and only a few can afford to update their knowledge base.

Information is regarded as a power that increases knowledge, reduces uncertainties and adds value when rightly placed. Mujoo-Munishi (2008) identifies information as both a resource and an asset characterized by relevancy, quality and timeliness. Kamar (2006) adds that information is an essential part of a nation's resources and therefore it is basic in any decision-making. This

supports the growing consensus that knowledge has emerged as a primary resource that drives development in addition to the traditionally held land, labor and capital.

Useful information and knowledge on agriculture is in most cases, held by communities such as, research stations, agri-business, agri-based literature, agricultural schools and colleges. This collection of actors form what is popularly known as Agricultural Information and Knowledge Systems (AIKS) (Leeuwis, 2006). Success in accessing relevant information however depends largely on the presence or absence of literacy, time and financial resources among other things. The major flaw of agriculture information is the assumption that the consumer has an ability to read. Effective use of agriculture information requires technological literacy, economic adequacy and literacy skills. Leeuwis (2006) further contends that these skills lack among the women in most parts of the developing world including Kenya. Vuuren (2007) opines that people have a right to the knowledge embodied in literacy. The information in such databases can only be properly exploited by women who possess certain levels of formal literacy. This clearly precludes most farmers in the developing world most of whom are rural based and less literate (Vuuren, 2007). In this sense being literate and having relevant knowledge is empowering.

Literacy has a vital role in access to and use of the new agricultural information (Bartecchi, 2003). The central argument of this study is that food security projects may possibly be influenced by the synergy between formal literacy, access to and utilization of agricultural information, among other things. The argument further espoused by this research is that the availability of information alone is inadequate without capacities such as literacy to access and subsequently utilize agricultural information to enhance food security projects. Literacy affects, *inter-alia*, access to information and technology, application of knowledge, labour quality, training opportunities, management of income and the wider participation in society (Bartecchi, 2003).

1.2 Statement of the problem

Despite the Kenyan Government's promise to provide equitable access to project resources through a strong women participatory approach throughout the food security project, it does not explicitly promote women's participation and equal access to government food security related

resources. The Kenyan Government promotes private sector investment to supply improved production techniques, extension services and market access to local counties without the opportunity of women to learn new production techniques (Suri, 2011). The government therefore fails to involve women MSME (micro, small and medium-sized enterprises) owners' to access extension services and markets (Suri, 2011).

The Government of Kenya has had various initiatives to enhance agricultural productivity, especially of the smallholders. High yielding crop varieties have been introduced and disseminated, fertilizer prices have been subsidized, and Soil and Water Conservation (SWC) technologies have been promoted. Despite these efforts, women are not considered in such initiatives despite the fact that they are the once involved most of the times in farm activities. This has led to low adoption rates of most of the improved farm technologies, ranging between zero and six percent (Republic of Kenya, 2007) and widely varying across households and regions (Olwande, Sikei & Mathenge, 2009; Suri, 2011) hence poor food security in the country.

Food insecurity persists in Kiambaa Constituency as over 60% of the population rely on relief food distribution every drought year (Sub County Development Report, 2012). In Kiambaa Constituency, there are 17 water projects for household agricultural projects, 27 road projects for easy accessibility of farmers to and from markets and 3 Capacity Building projects for access to agriculture information, literacy and community empowerment. Despite these food security projects initiatives in the region, women have been neglected in the participation of these projects hence posing major socio-economic problems in Kiambaa Constituency (Olwande, Sikei & Mathenge, 2009). This study sought to establish whether literacy, access to agricultural information, land ownership and Gender Action Plan Response for women had an impact on food security projects in Kiambaa Constituency, Nairobi County.

1.3 Purpose of the Study

The purpose of the study was to investigate the factors influencing women participation in food security projects in Kiambu County.

1.4 Objectives of the Study

The objectives of the study were as follows:

- (i) To find out the extent to which women literacy influences women participation in food security projects in Kiambaa Constituency, Kiambu County.
- (ii) To establish how women access to agriculture information influences women participation in food security projects in Kiambaa Constituency, Kiambu County.
- (iii) To determine the extent to which land ownership by women influences women participation in food security projects in Kiambaa Constituency, Kiambu County.
- (iv) To establish how Gender Action Plan policy response influences women participation in food security projects in Kiambaa Constituency, Kiambu County.

1.5 Research Questions

The study was guided by the following questions:

- (i) To what extent does women literacy influence women participation in food security projects in Kiambaa Constituency, Kiambu County?
- (ii) How does women access to agriculture information influence women participation in food security projects in Kiambaa Constituency, Kiambu County?
- (iii) To what extent does land ownership by women influence women participation in food security projects in Kiambaa Constituency, Kiambu County?
- (iv) How does Gender Action Plan policy response to women empowerment influence women participation in food security projects in Kiambaa Constituency, Kiambu County?

1.6 Significance of the Study

The study might help in the development of strategies aimed at achieving food security projects with the woman viewed as the ambit for food production and household management. It might have helped in determining the connection between the level of women literacy and food security

projects amongst the women of Kiambaa Constituency and their contribution to food security projects.

The study documented how women literacy and their access to agricultural information for Kiambaa and the rest of Kenya may improve food security projects. The findings of the study might have been valuable in planning for food security projects by the Government of Kenya.

1.67 Limitations of Study

The limitations the researcher anticipated while carrying out the study were considered. Some informants might not have a cleared recollection regarding information as required by the researcher. This could have affected the validity of the findings to a certain degree. However, triangulation was applied to corroborate the information collected from the informants. The researcher anticipated there might have been a language barrier challenge. This was however managed by use of local translators.

The study was also limited to food security projects only. It was limited to women literacy levels, their access to agricultural information, their land ownership and Gender Action Plan policy response to women empowerment. The current study was limited to Kiambaa constituency in Kiambu County and restricted its data collection to 381 women.

1.8 Delimitation

The study was carried out in Kiambaa Constituency. Kiambaa Constituency is an electoral constituency in Kenya and one of the constituencies in Kiambu County. The constituency lies on a 190.5Km² land. Kiambaa Constituency comprises of Ndumberi, Ruaka, Kiambaa Settlement Area, Ting'ang'a, Kiambaa, Riabai, Kamiti, and Waguthu Divisions of Kiambu District. The main economic activity in the constituency is agriculture with coffee, tea and dairy farming as the main sources of livelihood. Food crop production is also important. The study area was chosen because the researcher is well versed with the area which will enable him locate households in the area without the help of a local person. The area was also chosen because in Kiambaa Constituency, over 60% of the population rely on relief food distribution every drought year (Sub County Development Report, 2012). This made the study area ideal in investigating the factors that influence women participation in food security projects.

1.9 Assumptions of the Study

The study assumed that all respondents provided information with honesty and the information was sufficient in answering the research question.

1.10 Definition of Significant Terms Used in the Study

Access to Agricultural Information: This refers to the availability of information related to activities in the agricultural sector which include use of fertilizer, timely farming, mulching, crop rotation, climate smart crops and crop insurance among others.

Food Security: This refers to availability, accessibility and utilization of sufficient, safe and nutritious food to/by all individuals in a given community or household to meet their dietary needs.

Household: This is a social unit of people dwell under the same locality and are guided by the same rules, eats meals together and recognize the authority of a man or women who is the head.

Land ownership: This refers to the state by which an individual possesses or entitlement to land which he may use for their developments.

Literacy: Literacy is the ability to read, write, understand, communicate and gain useful knowledge which will be used to express one full.

Policy response: This is an planned tactic of addressing and managing the outcome of food security threat in order to handle the situation in a way that limits damage and reduces recovery time and costs.

Women participation: This refers to involvement of women in decision making to express opinions and exert influence regarding food security decisions.

1.11 Organization of the Study

Chapter one presented the background and statement of the research problem, purpose, objectives and research questions that will guide the study. The chapter presented the study's

significance and scope as well as the assumptions, limitations and operational definitions of the key terms used in the study.

Chapter two reviews literature focusing on women literacy and food security projects; women access to agricultural information and food security; and women literacy and access to agricultural information. The chapter also presents the theoretical and conceptual framework used for this study.

Chapter three covers the research methodology that was used in this study. Study site, research design, study population, methods of data collection, data analysis, and ethical considerations are discussed.

Chapter four presents data analysis, presentation and interpretation. This chapter includes the demographic information and the presentation of findings and analysis based on the objectives of the study as explored by the questionnaires. Both descriptive statistics and content analysis are employed.

Chapter five represents a summary of findings, discussion, conclusion and recommendations. The discussion of findings links the findings of this study to the reviewed literature. The conclusions are made based on the study objectives.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviewed existing literature on the concept of food security projects. It discussed literacy and food security projects, women access to agricultural information, women land ownership and Gender Action Plan policy response to women empowerment which are the objectives of the study, theoretical framework, the conceptual framework, the research gaps of the study and the summary of literature review.

2.2 Food Security

Food security is concerned with everyone having enough good food to eat each day. It is a way of ensuring that all people at all times have both physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and preference for an active and healthy lifestyles (Davies, 2004).

To achieve food security, households must have the means to produce or purchase the food that are needed and ensure that the dietary requirements of all family members are met. A study done by Pimbert (2009) focused on farm productivity and rural poverty in India. The study found that the number of malnourished people has increased due to high food prices and rising unemployment level. Food security is therefore a situation in which all persons in a household at all times have both physical and economic access to sufficient food to meet their dietary needs. Hence depend on availability, accessibility and ability to utilize from the food diversity within their vicinity. Food availability is achieved when sufficient food both in quality and quantity are consistently within reach to all persons in a household. The current study was based in Kenya focusing on women literacy and food security.

Food insecurity is widespread and stubbornly high globally (FAO, 2006). Over 900 million people globally experience the hardship that hunger imposes and this figure continues to rise even amidst the riches of the 21st century (FAO, 2006). Of these, 855 million (95 percent) are in the developing world, 10 million in industrialized countries and 35 million in countries in transition (FAO, 2006). The survey compared food security in developing and developing countries and found that developed and industrialized world have confronted food insecurity by

putting in place strategies that enable access to livelihoods, assets, strong institutional support and favourable external environment which play crucial roles in agricultural productivity and hence reduced food insecurity as opposed to developing countries (FAO, 2006). The current study was restricted to women literacy in Kiambaa Constituency and food its food security.

Food insecurity remains a significant international problem, with developing regions of the world enduring most of the burden (Bortei 2007). The root causes of food insecurity among the developing countries include insufficient agricultural development, poverty, national policies that do not promote equal access to food for all, social and gender inequality, environmental degradation, barriers to trade, population growth, low levels of education, and natural disasters like drought and floods among others (Ibrahim et al., 2009). Low levels of education, poor health status, and certain disabilities also increase the risk of food insecurity for individuals and households in the Sub- Saharan Africa (SSA). This study identified causes of food insecurity and not women literacy and food security.

Over 218 million people in Sub Saharan Africa live under extreme poverty and hunger (Malhaam & Rao, 2004). Agriculture provides livelihoods for about 80% of African population, most of whom are subsistence farmers. Three-quarters of those affected live in rural areas and include those who have been displaced by civil conflicts and also those who scratch their living from dry lands where adequate rainfall for crop production is a constant challenge (FAO, 2004; 2006). The most affected countries are those in the Central, Southern and Eastern Africa. In Malawi the introduction of large scale input subsidy program has seen the country switch from being a food beggar to becoming a net exporter of food. The program has changed the severe food shortage situation to increased food availability, higher real wages, economic growth and poverty reduction in Malawi (FAO, 2006).

Recently, rises in food prices and droughts have had drastic effect on food security projects in Kenya. In April, 2008, about 3.5 million people in the country were reported to be in need of emergency food aid (IFPRI, 2004). A concerning problem of food insecurity in Kenya is concentrated in the rural areas and ASAL areas in particular. Kenya has been getting increasingly dependent on food imports. To meet the growing demand for food, the government has to import cereals against scarce foreign exchange. Currently, over 10 million people in

Kenya suffer from chronic food insecurity and poor nutrition of which two to four million require emergency food assistance at any given time. In response to this situation in Kenya, food security initiative projects have been implemented over the years in arid and semi-arid areas but success of these initiatives seem to be far from realization (Nyangito, Oduro & Raen, 2004).

2.3 Women Literacy and Food Security

The importance of literacy as a human right had been underscored by the UN where a resolution was passed setting out a Decade of Literacy from 2003 to 2012. Much as the women play an important part to achieve food security projects both in the rural and urban areas it is becoming clear that they cannot meet the growing demand. As the population grows and the capacity of the land diminishes it exerts a need to shift towards intensive farming or the application of new methods of farming and technologies.

Adaptation and use of new innovation assumes a higher level of literacy however the majority of women are neither educated nor are there any deliberate efforts to boost literacy status of the rural farmers. Establishing whether women literacy has an impact on food security projects. Identifying the challenges this causes for female household-heads found in most of the developing world. Their level of literacy may probably influence the way they access innovative research and information based on agriculture, literacy and language have great influence on female small-scale farmers' use of information to sustain food security projects. And finally determining whether women literacy on innovations contributes to food security (Pennington, 2007).

Considering the relationship between female education and economic development especially at their different levels of literacy had a positive impact on food security, health and wellbeing. This process involves transforming the societies and making education in any population an important segment of women's life. Therefore it's important to establish the extent to which female literacy influences food security at the household level (Kaniki, 2007).

Women literacy has evolved over time and has remained contextual to an extent that there is yet to be consensus on the absolute definition of women literacy. Women literacy has been and still is influenced by different political, economic and socio-cultural contexts. Therefore revealing the

connection between women literacy and food security as well as determine their level of access to agricultural information (McGarry, 1991).

Multiple literacies' related to technological, information/knowledge, media, visual, scientific, numeric and other contexts, is better suited to life in the twenty-first century. The associations between improved productivity and women literacy facilitates the economic value of the possessor and the society to which she belongs as such it is regarded as the economic take off for any country and it empowers individuals and groups to promote social change. Women literacy is therefore viewed as a necessary precondition for development and worthy of attention. Against this backdrop, this study seeks to add to the body of knowledge on the role of women literacy in the wellbeing individuals at the household level (McGarry, 1991).

A relationship may be established between the food insecure countries and high levels of women illiteracy in those countries. Some countries are underdeveloped because fewer than 10% of their populations have been trained and educated in such ways as to make proper use of their innate capacities. It is assumed that women illiteracy limits their ability to access and implement agricultural information effectively so as to be food secure. The household food insecurity is attributed and by no way limited to, lack of education and agricultural training, poor farming methods, poor post-harvest management. This contributes to the view that food security projects is possibly influenced by the provision of literacy and access to information inter-alia, on supply of inputs, improved seed, credit and land is made available (Westbrook, 2005; and Belkin & Taylor, 2006).

Food security is an increasingly critical global issue, affected by a complex and inter-related set of variables that influence the availability and access to food in each country. At one end food security implies the availability of adequate supplies at a global and national level while on the other; the concern is with adequate nutrition and well-being. Food security can be classified into three levels namely global, national and household levels (Westbrook, 2005).

2.4 Women Access to Agricultural Information and Food Security

Insufficient agricultural information that forecasts famine as the central reason for the failure of national governments and the international donor community to prevent the famines in Africa in

the mid-1980s. Many new famine Early Warning Systems (EWS) have been setup, but the goal of famine prevention remains elusive. This crucial agricultural information is in most cases available to governments, research institutions. Many of small scale farmers do not have the necessary literacy competencies to access this information. Most developing countries lack the required capacity and resources to exploit the information because in most cases information provision is often outweighed by other priorities such as health (Borg and Gall, 1996). Therefore women literacy influences the women ability to access and interpret agricultural information which in turn impacts food security projects.

In most developing countries, agriculture continues to be the most important sector of the economy, yet ironically, majority of the small farmers engaged in agriculture are food insecure. FAO (2008) reports that 842m undernourished people in the developing world today are from farming families. This situation arises when they to sell their produce to meet other needs such as school fees and other food products they do not produce. This means that they are producers but not the consumers of food because of poverty. Their low levels of literacy deny them access to information and technologies to manage and preserve harvests. Consequently, women illiteracy in Kiambaa constituency is a contributory factor since they lack access to agricultural information thereby resulting in household food insecurity (Achleitner, 2005).

Increasing attention is being given to the role of smallholder subsistence agriculture in ensuring the food security of the African continent, represented by 73% of the rural population consists of smallholder farmers. Small scale or subsistence farming in Africa may not be discussed in isolation of women who make the majority of rural populations. A third of rural households in Africa are solely headed by women. It is therefore important to establish the role of women literacy in and participation in food security projects (IFAD, 1993).

A women's contribution to the production of food crops ranges from 30% in the Sudan to 80% in the Democratic of Republic of Congo. In Zimbabwe, the communal land sector (in which smallholder farming is practiced) occupies 42 % of all land and accounts for 80% of the female population. This data supports a common trend throughout Africa that the smallholder subsistence farmers, especially women are responsible for food security projects and contribute substantially to the national agricultural production. Further, the women's ability to access

agricultural information is key to food security owing to the high percentage of women's contribution to the production of food crops (FAO, 2006).

A comparison between farming systems in Europe, Asia, Africa and Latin America confirms that while the male systems predominate in Europe and Latin America in Africa and Asia female systems predominate. Thus in most Sub Saharan Africa, communal or small scale farming is culturally associated with a woman's role in society. Even in the households headed by men, women do most of the farm work. They cultivate crops, care for livestock, process and prepare food for the family. This may be attributed to the continental migration of men to other areas in search of employment due to decreasing returns from agriculture (Boserup, 2004). Kiambaa constituency just like the other developing countries may be experiencing the same and as such it will be important for this study to establish the role women literacy plays in facilitating the role of women in as far as food security is concerned.

The key roles that women play in ensuring food security and ways to strengthen food production, economic access to available food, and nutritional security is analysed in the Food policy report (International Food Policy Research Institute, 2004). The report reveals that availability and capability to access productive resources such as agricultural information and knowledge may enhance or limit women's capacities for food security projects. Most women have no access to relevant agricultural information mostly in rural Africa where access to agricultural information is limited, and especially so for the majority of rural women due to insufficient levels of literacy among other factors (Moser, 2003).

The lack of access to the important resource such as agricultural information does not only hinder development in general, but aggravates food insecurity of nations. Women are responsible for the economic, social, physical and psychological support of their families yet most of them are illiterate (Bartecchi, 2003).

2.5 Women Literacy and Access to Agricultural Information

The importance of women literacy is reflected in a cost-benefit analysis carried out by the World Bank (2006). It shows that investment in the education of females has the highest rate of return of any possible investment in development. Evidences of a group of literate women from the

South Coast of Kenya expressing joy over the advantages of their recently acquired skills in reading, writing, and calculation. They reckoned that they could now sign their names, they had more control over money transactions, and could read medical prescriptions and instructions. This is essential not only for preventing an adverse impact of the social conditions of women and children but also for enhancing women's equitable access to the benefits of agricultural information and productive resources such as credit for the improvement of food security projects. Literacy is also important for the health status of a nation in particular reference to women (Bartecchi, 2003).

Literate women understand birth control measures and so reducing population explosion which is one of the major contributing factors to diminishing capacity of the land and subsequently food insecurity. Given the relationship between female education and economic development especially at the first and second levels of literacy; the positive impact on access and application of agricultural information makes women literacy in any population very important (UNESCO, 2002).

2.6 Women Land Ownership and Food Security

Land rights in terms of ownership and usage are very crucial in agriculture development since it is the medium for most of the agricultural activities. Ownership of land has an economic power and status attribute especially where it is legally owned. Land is a fundamental resource in woman's livelihood, economic empowerment and to a greater extent in her quest for equity and equality within a patriarchal society. Further its significance as female headed households increase hence the need to review or refocus on the distribution of land rights (Bartecchi, 2003).

Women having rights over land provides the power to make decisions or to be involved in the decision making process involving land use. Technological adoptability relies on who makes the decision which is determined by access and control over land. Land can be used as collateral to obtain credit from financial institutions to address the challenge in accessing inputs (Chanza, 2011).

In Malawi land is an important variable in agriculture production, its scarcity is a major challenge, hence the average land holding capacity is 1.2 hectares per households but the poor

occupy less than 0.5 hectares which limits women from owning enough land for agricultural purposes (Pfukani, 2010). Unless used to its maximum productivity, such small pieces of land would not produce enough food for the year. Farmers with land holding size of less than 0.5 hectares produce food enough to last for three to four months. This is so because scarcity of land is often compounded by the gender inequalities in terms of rights to usage and ownership. However, the current study will identify how women owning land, be it small, will influence food security projects (Gladwin, 2001).

In Nigeria, women land ownership, access and ownership starts immediately after the husband's death. The relatives demand documents pertaining to their husband's property including land investments and bank accounts which affects women owning land for agriculture activities. Under customary law, which governs most marriages in Nigeria, a wife has absolutely no right to the husband's property or income (Nwezi, 1989).

The Constitution of Kenya guarantees equality of ownership rights for its citizens. Women are free to buy, own and sell assets as they choose. However, in practice women's access to land and access to property other than land are severely restricted by custom, which essentially prohibits women from owning land. In fact, women only own 4% of land in Kenya. Even when women are able to acquire assets, their husbands often act as intermediaries in the transaction. This situation has negative influence for women's access and fully participates in farming for enhanced food security (Kibwana, 2002).

Under patrilineal inheritance systems in Kenya, ancestral land is kept within the family to ensure the continuation and security of the lineage. Patrilineal inheritance typically sees tracts of ancestral land carved into ever-smaller plots to accommodate subsequent inheriting male generations in the communal holding. Sons are expected to subdivide their already subdivided portions for their sons to inherit and so on. In this manner, the patrilineage remains intact with secure access to land. Inheritance and the patrilineal legacy provide a social safety net and underpin all land dealings. Though operated on communally held ancestral lands in the past, this system remains important because it has been extended into the individualized tenure domain. Since the kinship system is unilineal, permitting daughters or widows to inherit can remove land

from the patrilineage and threaten the lineage and the security of future generations (Kibwana, 2002).

2.7 Gender Action Plan Policy Response and Food Security

It is imperative to assess the policy environment on women's participation in agricultural development towards food security since as guiding principles they can reduce or perpetuate gender inequalities. Globally, the major guiding principles for development are the millennium development goals. Progresses made by MDG 3 which seeking to promote gender equality and empower women by 2015, is influenced by among other factors functional government, economic growth, physical security and basic infrastructure like transport (Littlefield, Murdoch & Hashemi, 2003).

The Beijing platform for action in 1995 adopted gender mainstreaming as a global strategy to achieve gender equality (UNESCO, 2002). This strategy was established on the basis of ensuring effective achievement of development goals through integrating gender perspectives in the development process. The Southern African Development Corporation (SADC) has also adopted the strategy in line with the Beijing platform for action and other global and regional institutions. The strategy which is contained in the SADC declaration on agriculture and food security seeks among other things repeal discriminatory laws that prohibit women's access to finance, land and other key agricultural inputs (SADC, 2008).

Initiatives towards women's participation in food security, Gender Action Plan was one such initiative which focuses on integrating women as ultimate clients into agricultural projects to enhance supply responses in times of crises. The initiative achieves this by among other things promotes women's access to factors of production like land, agricultural inputs and finance (World Bank, 2010). Positive trends in Ethiopia which are significant improvements in land productivity and land certification project. The project was promoting joint land titles between men and women which increased women's power on decision making (Buvinic, 2010). The current study seeks to identify how Gender Action Plan policy response influence women's participation in food security projects. The challenge of food security is to transform the system into more open, dynamic and multidimensional to reward women's participation in food security (Omamo & Lynana, 2003).

2.8 Theoretical Framework

The study adopted Diffusion of Innovation (DOI) theory. Diffusion of Innovations theory is one of the oldest social science theories developed by Rogers E.M. in 1962. The theory states that “Adoption of a new idea, behavior, or product (i.e., “innovation”) does not happen simultaneously in a social system; rather it is a process whereby some people are more apt to adopt the innovation than others” (Rogers, 1962). While the DOI theory is mainly used in communication, it is widely applied in agricultural innovations to increase the adoption of innovative products and ideas. DOI applicability in the diffusion of agricultural innovation (Rogers and Scott, 1995).

Diffusion of innovations (DOI) may be traced back to the investigations of French sociologist Gabriel Tarde who attempted to study the rationale behind the acceptance and refusal of innovations in society. The fundamental research paradigm for the diffusion of innovations lies in the 1943 study of Ryan and Gross who investigated the diffusion of hybrid seed corn among Iowa farmers. The major concern of the diffusion of innovations is how, why, and at what rate are new ideas and technology spread through cultures. Rogers and Scott (1995) theorized that innovations spread through society based on access to knowledge. The DOI theory sees innovations as being communicated through certain channels over time and within a particular social system. Individuals are seen as possessing different degrees of willingness to adopt innovations from earliest to latest adopters thus: innovators, early adopters, early majority, late majority, laggards.

This study sought to establish whether literacy of rural women in Kenya and particularly in Kiambaa constituency has an impact on food security projects and the extent to which the access to agricultural information is relevant for sustainable food security projects. Recent developments illustrate the importance of women literacy on the role of information in agriculture in Kenya. It is progressively more becoming fact, that increased agricultural production innovations may be only realized through integrated knowledge applications such as greater use of biotechnology, and effective irrigation management. This creates the need for the timely adoption and absorption of new technologies and agricultural innovations. The level of

literacy among women in Kiambaa constituency determines the absorption rate of agricultural innovations for food security projects.

2.9 Conceptual Framework

The conceptual framework is a diagrammatical presentation of variables in the study. The framework illustrates the interrelationship between dependent and independent variables. The independent variables for the study determine how women participation affects food security projects. The independent variables are women literacy, women access to agricultural information, women land ownership and policies related to women empowerment.

Independent Variables

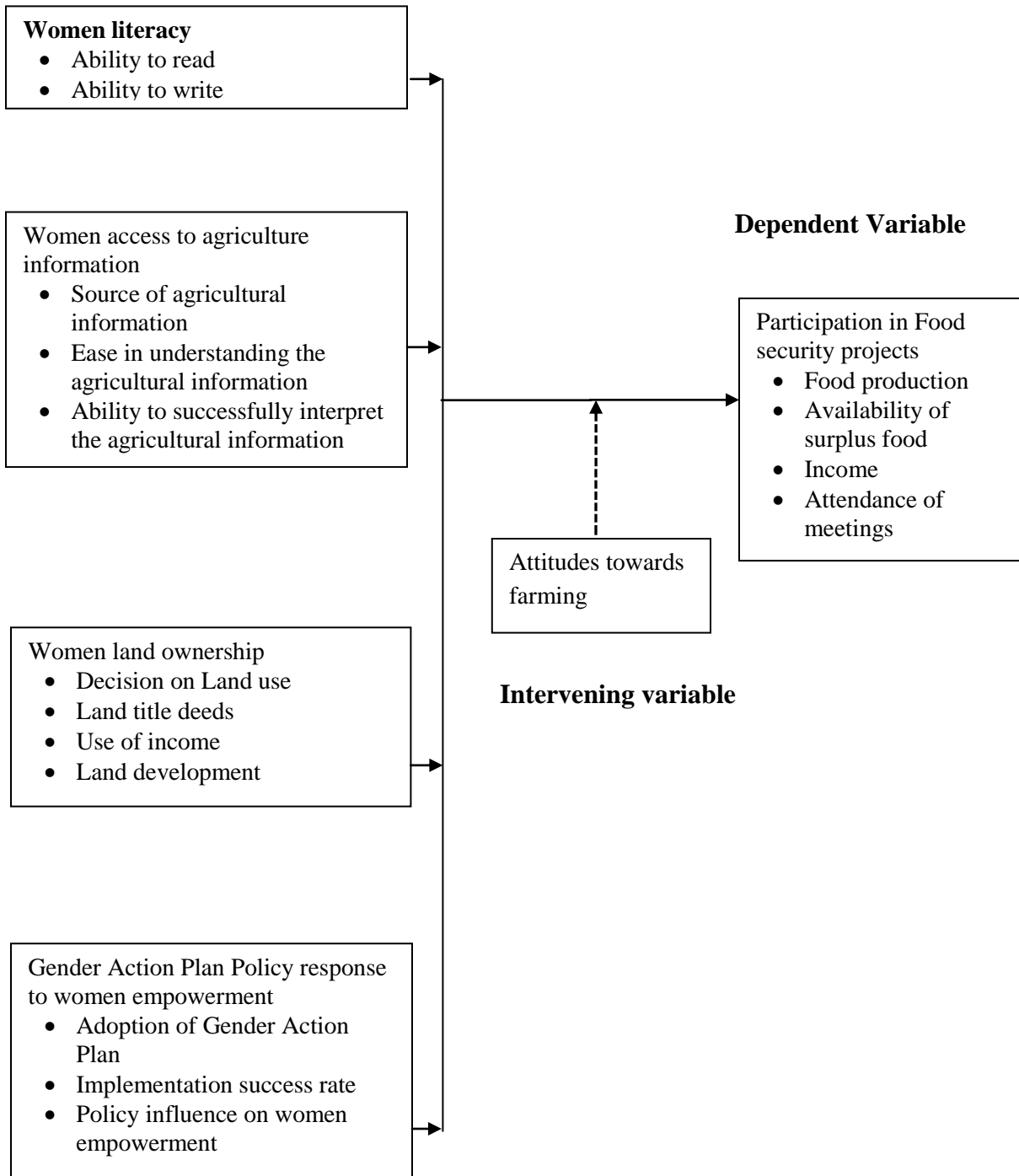


Figure 1: Conceptual Framework

The conceptual framework described in figure 1 were used in this study; the independent variables are women literacy and access to agriculture information that may positively influence the food security projects. Women literacy makes it easy to interpret and implement agriculture information that results in good agriculture practice that will lead to good yields. Women with illiteracy level will also make it difficult to interpret and implement agriculture information systems. Access to agricultural information is vital in supplementing indigenous agriculture knowledge which plays a role in food security projects. Access can sometime provide information that is confidential. Attitude to literacy is the intervening variable; those with positive attitude are likely to benefit more from the agriculture information available while those with negative attitudes will not. Regardless of the interplay between the independent variable, the intervening variable will influence the food security projects.

2.10 Knowledge Gap

As per the reviewed literature on the participation of women in food security projects, school of thought and conceptual model of women participation in food security in Kiambaa Constituency, Kiambu County have been presented. It was found that there can be no single indicator for measuring food security. Global, regional and national food security can be, and has always been measured and monitored on food demand, supply and stock and trade indicators.

Food production, availability of surplus food and income are the essential determinants of food security projects that this study focuses on. Therefore, food security projects measuring require disaggregated consumption information at household level, based on surveys. This aspect of measuring food security projects status is largely lacking in Kiambaa Constituency, Kiambu County. In the classical liberal school of thought, Diffusion of Innovation (DOI) theory was adopted as it is mostly applied in agricultural innovations to increase the adoption of innovative products and ideas. However, women access to agriculture information through these agricultural innovations and how it influences food security projects is still not clear. This study sought to establish the extent to which women access to agriculture information influences women participation in food security projects in Kiambaa Constituency, Kiambu County.

Looking at the empirical studies, a study done by Pimbert (2009) focused on farm productivity and rural poverty in India. There is need to base the study in Kenya. Ibrahim et al., (2009) did a

study focusing on food security in developing countries. This study identified causes of food insecurity and not women literacy and food security. A study done by Pennington (2007) about innovation and adoption revealed that the adaptation and use of new innovation assumes a higher level of literacy yet the majority of women are neither educated nor are there any deliberate efforts to boost literacy status of the rural farmers, in this study, the focus will be to establish whether women literacy has an impact on food security projects. The study did determine whether women literacy on innovations contributes to food security something this study is focused on. Belkin and Pao (2009) looked at the relationship between female education and economic development. The current study aimed at establishing the extent to which female literacy influences food security at the household level.

2.11 Summary of Literature Review

The number of malnourished people has increased due to high food prices and rising unemployment level. Food security is therefore a situation in which all persons in a household at all times have both physical and economic access to sufficient food to meet their dietary needs. Over 900 million people globally experience the hardship that hunger imposes, a figure which continues to rise even amidst the riches of the 21st century. Of these, 855 million (95 percent) are in the developing world, 10 million in industrialized countries and 35 million in countries in transition.

The adaptation and use of new innovation assumes a higher level of literacy yet the majority of women are neither educated nor are there any deliberate efforts to boost literacy status of the rural farmers. In most developing countries, agriculture continues to be the most important sector of the economy, yet ironically, majority of the small farmers engaged in agriculture are food insecure.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter covers the methodology that was used in this study. Research design, study population, sample size and sampling procedures, data collection instruments, data collection procedures, data analysis techniques and ethical procedures will be discussed.

3.2 Research Design

This study adopted a survey research design method. Survey design is a method of collecting information by interviewing or administering a questionnaire to a sample of individuals. This research design was preferred to other methods for it enables the researcher to collect data from respondents about their characters, past and present experiences and opinions. This is necessary so as to generalize the findings to the population from which the sample was drawn (Borg & Gall, 1996).

Qualitative and quantitative methods were used to collect the data. Quantitative data was collected through a structured questionnaire and generate information on the impact of literacy on food security projects. Qualitative data was collected through key informant interviews guide. This gave information on the agricultural information needs of the women, accessibility to the agriculture information and the level of literacy of the women targeted. The results of the structured questionnaire was coded and simple frequency tables generated to summarize them. Qualitative data will be analysed by reading, coding, displaying, reducing and interpreting. A thematic content analysis was applied.

3.3 Target Population

According to Mugenda and Mugenda (2003), a target population is described as the total number of elements or individuals under investigation by a research study. It is the sum of all that conforms to a given specification and from which a sample is taken. The target population of this study were women within households in Kiambaa Constituency. The research required the views of women and as such, they constitute the target population. According to the 2009 Kenya Population and Housing Census, Kiambaa Constituency has 41,931 households (KNBS, 2009).

The study will assume that each household will be led by one woman. Therefore, the target population was 41,931 women in representing each household in Kiambaa Constituency.

3.4 Sample size and Sampling Procedure.

A sample is described as a proportion of the population that is under investigation by a research study (Mugenda & Mugenda, 2003). A researcher is allowed to use a sample when the target population for a study is too big and the researcher is limited in terms of resources.

3.4.1 Sample size

A sample size of 381 persons was randomly selected from Kiambaa Constituency. Randomization provided ability to generalize to the population. The 381 sample was based on the target population of approximately 41,931 women in households in Kiambaa constituency.

The sample size was arrived at by the use of Krejcie and Morgan's (1970) formula:

$$s = \frac{X^2 NP (1-P)}{d^2 (N-1) + X^2 P (1-P)}$$

Where:

s = required sample size.

X^2 = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841).

N = the population size.

P = the population proportion (assumed to be 0.50 since this would provide the maximum sample size).

d = the degree of accuracy expressed as a proportion (0.05).

Using formula above, the sample size (s) for the target population size (N) is 41,931 is calculated as follows:

$$s = \frac{3.841 \times 41,931 \times 0.5(1 - 0.5)}{0.05^2(41,931 - 1) + 3.841 \times 0.5(1 - 0.5)} = \frac{40,264.24}{105.79}$$

$$s = 380.62 \approx 381$$

Based on the Krejcie and Morgan (1970) sample size estimation table provided in Appendix A, the sample size for the target population of 41,931 is 381.

3.4.2 Sampling Procedure

The researcher targeted a sample based on calculation of proportions from the target population as indicated in Table 3.1.

Table 3.1: Sampling Calculation

Divisions	Target population (No. of women/households)	Sample Size
Cianda	4,370	40
Karuri	8,863	81
Ndenderu	10,364	94
Muchatha	7,673	70
Kihara	10,660	97
Total	41,931	381

To obtain the sample size per division, proportional sampling technique will be used. This was calculated as:

$$\frac{\text{Number of households per division}}{\text{Total number of households in Kiambaa}} \times \text{Sample Size}$$

In proportional sampling, the size of each stratum (division) is proportionate to the population size of the strata (divisions) which was looked at across the entire population. This means that each stratum (division) has the same sampling fraction. Simple random sampling was carried out to sample respondents in each division. The list of divisions were used to construct a sampling frame. Simple sampling method gave all the divisions and respondents equal opportunity to be included in the sample (Nachmias & Nachmias, 2005).

3.5 Data Collection instruments

Both quantitative and qualitative data were used in this study. Quantitative data was acquired from the questionnaires while key informants was used to collect qualitative data. Face to face interviews was conducted for their likelihood to achieve a high response rate and because they was useful to obtain detailed information about personal feelings, perceptions and opinions. The research adopted qualitative and quantitative techniques of data collection. They included key informant interviews, survey method and secondary methods.

3.5.1 Pilot Testing of the Instrument

According to Mugenda and (Mugenda 2003), 10% of the sample size is ideal for the pilot testing. Based on this, the study conducted a pilot test on 38 women working in Food security projects in Kiambaa Constituency who will be selected randomly. The pilot study was necessary to determine reliability of the instruments and enable the researcher to determine whether the respondents understands the questions. A questionnaire was used for this pre-test.

3.5.2 Validity of Research Instruments

Validity refers to the extent to which a test or instrument measures what it is intended to measure. Mugenda and Mugenda (2003) explain that validity is the accuracy and meaningfulness of inferences based on research results. To ensure validity of the instruments, the researcher presented the instruments to the supervisor who helped to analyse and determine if the instrument will be sufficient for the study. The instrument was therefore presented to the panel of lecturers during defence who also assessed the validity of the instrument.

3.5.3 Reliability of Research Instruments

Mugenda and Mugenda (1999) defines reliability as a measure of the degree to which a research instrument yields consistent results or data after repeated tests when administered a number of times. To enhance the reliability of the instrument, a Test-Retest method was conducted during the pilot study to ten respondents. The aim of pre-testing was to gauge the clarity and relevance of the instrument items so that those items found to be inadequate for measuring variables were either be discarded or modified to improve the quality of the research instruments. Two key informant interviews were administered using the interview guide to help improve on the instrument. According to Mugenda and Mugenda (1999) validity is a measure of the degree to which result obtained from data represents the phenomena under study. A valid instrument should therefore contain questions that were relevant to the study.

The study was therefore conducted reliability tests using Cronbach statistics. In Cronbach, any alpha of more than 0.7 showed that data is reliable. If the test showed an alpha of less than 0.7, the instruments were not be reliable for data collection. The findings from the reliability test showed an alpha of 0.81. This alpha is more than 0.7 which proved that the instrument were reliable and the researcher continued and collected data.

3.6 Data Collection Procedures

The researcher first sought approval and letter of introduction from the university in form of a letter. The researcher then asked for permission from the National Commission for Science, Technology and Innovation (Nacosti) in order to get information relevant to the study. After getting approval from the relevant authorities, the researcher engaged the services of five research assistants who were mapped to each division. The researcher orientated and train the five research assistants on what was expected before sending them to the field to assist in the distribution and collection of the questionnaires.

Interviews were conducted in the language preferred by the participant (transcripts of interviews in local languages will be translated into English before analysis). Each interview was conducted at a meeting place identified by the participant as convenient, usually a workplace, home, or public outside meeting area. Questions took approximately 15 minutes to fill and individual interviews will take 45 minutes in duration. The key informant interviews were administered on a sample of two individuals per division occupying the positions of nutrition officer, chief, and community officer.

3.7 Data Analysis Technique

Quantitative and qualitative methods was used to analyse data by the help of Statistical Package for Social Sciences (SPSS) computer program version 20. Quantitative data was analysed using descriptive statistics. Descriptive statistics provided simple summaries of the respondents and the observations that have been made. The findings were presented in means, standard deviation, percentages and frequency tables and figures. Content analysis were used to analyse qualitative data. The researcher sorted responses into themes, categories and patterns. This enabled the researcher to analyse the statements in terms of the observed attributes hence conceptualization.

3.8 Ethical Considerations of the Study

The researcher adhered to the following ethical considerations in the course of the data collection process. First, the respondents participated on their own volition and their consent was sought before the study was carried out. This implied that should any of the respondents feel like withdrawing during the data collection process, they were allowed to do so. Secondly, the

researcher sought permission from the relevant research stakeholders before undertaking the study. Thirdly, the researcher upheld anonymity and thus the respondents were not required to give their names. Lastly, the researcher communicated the findings of the research study to the research stakeholders upon completion.

3.9 Operational Definition of Variables

This section dealt with the operational definition of study variables, along with other components of the conceptual framework. The independent variables were literacy, access to agriculture information, land ownership, and Gender Action Plan policy. The dependent variable was women participation in food security projects.

Table 3.2: Operationalization of Variables

Research Objective	Variable	Indicators	Measurement Scales	Research Instrument	Type of analysis	Level of analysis
To investigate the factors influencing women participation in food security projects in Kiambu County.	Food security projects	Food production	Ordinal	Questionnaire	Qualitative	Descriptive
		Availability of surplus food	Ordinal	Questionnaire	Qualitative	Descriptive
		Income	Ordinal	Questionnaire	Qualitative	Descriptive
Determine the influence of women literacy on food security projects	Literacy of women	Ability to read	Ordinal	Questionnaire	Qualitative	Descriptive
		Ability to write	Ordinal	Questionnaire	Qualitative	Descriptive
Establish the extent to which women access to agriculture information influence food security projects	Women access to agriculture information	Source of agricultural information	Ordinal	Questionnaire	Quantitative	Descriptive
		Ease in understanding the agricultural information	Ordinal	Questionnaire	Qualitative	Descriptive
		Ability to successfully interpret the agricultural information	Ordinal	Questionnaire	Qualitative	Descriptive

Research Objective	Variable	Indicators	Measurement Scales	Research Instrument	Type of analysis	Level of analysis
To investigate the factors influencing women participation in food security projects in Kiambu County.	Food security projects	Food production	Ordinal	Questionnaire	Qualitative	Descriptive
		Availability of surplus food	Ordinal	Questionnaire	Qualitative	Descriptive
		Income	Ordinal	Questionnaire	Qualitative	Descriptive
To establish the extent to which land ownership by women influences food security projects	Women land ownership	Decision on Land use	Ordinal	Questionnaire	Qualitative	Descriptive
		Land title deeds	Ordinal	Questionnaire	Qualitative	Descriptive
		Use of income	Ordinal	Questionnaire	Qualitative	Descriptive
		Land development	Ordinal	Questionnaire	Qualitative	Descriptive
To establish the extent to which Gender Action Plan policy response to women empowerment influences food security projects	Gender Action Plan Policy response to women empowerment	Adoption of Gender Action Plan Policy	Ordinal	Questionnaire	Qualitative	Descriptive
		Success rate in implementation of Gender Action Plan Policy to women empowerment	Ordinal	Questionnaire	Qualitative	Descriptive
		Policy influence on women empowerment	Ordinal	Questionnaire	Qualitative	Descriptive

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter includes the presentation, analysis and interpretation of the findings. Data was categorized and interpreted according to the research objective. Descriptive statistics was applied and the findings presented in tables showing frequency distributions and percentages. Open ended questions were analyzed through content analysis and presented in prose form.

4.2 Questionnaire Return Rate

The researcher distributed 381 questionnaires as per the sample size. Table 4.1 illustrates the questionnaire return rate.

Table 4.1: Questionnaire Return Rate

Questionnaire Return Rate	Frequency	Percentage
Returned	321	84.25
Not returned	60	15.75
Total	381	100

From the findings, 321 questionnaires were retrieved representing 84.25 percent response rate. The high questionnaire response rate resulted from the method of administration of the instrument, which was in this case researcher administered. This was acceptable according to Mugenda and Mugenda (2003). This method also ensured that the respondents' queries concerning clarity were addressed at the point of data collection; however, caution was exercised so as not to introduce bias in the process it also reduced the effects of language barrier, hence, ensuring a high instrument response and scoring rate.

4.3 Demographic Characteristics of the Respondents

The study sought to determine the demographic characteristics of the respondents as they are considered as categorical variables which give some basic insight about the respondents. The characteristics considered in the study were: age, marital status, highest level of education and years of residence.

4.3.1 Marital Status

The study also intended to establish the marital status of women who were involved in the women groups as shown in Table 4.3.

Table 4.2: Marital Status

Marital Status	Frequency	Percentage
Married	199	62.2
Singled	109	33.9
Widowed	13	3.9
Total	321	100

The findings showed that 199 (62.2%) of the women were married, 109 (33.9%) were single and 13 (3.9%) were single unmarried. This showed that majority of the women involved in the study were married. This indicates that women had families to feed, educate and provide good health care. The current world, the greatest responsibility and challenge of most parents is education, feeding their families and providing good health to their members.

4.3.2 Level of Education

The other demographic characteristic that was studied included the level of education of the respondents. Education is the key to any prosperous project and it was necessary to determine

the level of education to see if it had any link on the activities that the women do. Based on this the respondents were asked to state their level of education. Table 4.4 presents the highest level of education attained by the respondents.

Table 4.3: Level of Education

Level of Education	Frequency	Percentage
Primary	39	12.2
Secondary	165	51.3
Tertiary	76	23.7
No formal education	41	12.8
Total	321	100

From Table 4.4, most of the respondents 165 (51.3%) had only attained secondary education as the highest level of education while only 76 (23.7%) had tertiary education as their highest level of education. Those who had no formal education were 41 (12.8%) and those who had gone to primary school were 39 (12.2%). This shows that majority of the respondents had attained secondary education as the highest level of education. The low education realized in the study is a threat to the activities regarding factors influencing women participation in food security projects in Kenya.

4.3.3 Years of Residence

The study sought to establish the number of years respondents lived at Kiambaa. The results are recorded in the Table 4.4.

Table 4.4: Years of Residence

Years of Residence	Frequency	Percentage
0-3 years	47	14.5
3-5 years	76	23.8
More than 5 years	198	61.7
Total	321	100

From the findings, majority of the respondents 198 (61.7%) indicated that they were residents of Kiambaa for more than 5 years, 76 (23.8%) of the respondents were residents of Kiambaa for 3-5 years while 47 (14.5%) respondents had been residents for 0-3 years. The findings imply that most respondents were residents for more than 5 years.

4.4 Food Security Projects Situation

The study in this section sought information about food security projects situation in Kiambaa Constituency, Kiambu County.

4.4.1 Normal Family Meal

The study sought to establish what made a normal everyday family meal for households in Kiambaa constituency. Majority of the respondents indicated “*mukimo*” (meal made of pounded potato with vegetables and peas) as the normal everyday family meal for households while other respondents indicated “*githeri*” (meal made of maize and beans) as the normal everyday family meal for households. This imply that majority of households in Kiambaa constituency, Kiambu County considered “*mukimo*” as their normal everyday family meal for households.

4.4.2 Yesterday Meal

The respondents were requested to indicate what they ate during yesterday's breakfast, lunch and supper. Majority of the respondents stated tea and "*nduma*", "*mukimo*" and "*githeri*" as the type of meals they ate during yesterday's breakfast, lunch and supper respectively, while some of the respondents stated porridge, "*ugali*" (prepared from maize flour) and rice as the type of meals they ate during yesterday's breakfast, lunch and supper. The findings show that most households in Kiambaa Constituency in Kiambu County take tea with "*nduma*", "*mukimo*" and "*githeri*" as the type of meals during breakfast, lunch and supper respectively.

4.4.3 Source of Household Daily Meal

Furthermore, the study also sought to find out the main source of their household daily meal. From the findings, majority of the respondents indicated the source of household daily meal as mainly from farming. Some of the respondents indicated the source of household daily meal as both farming and buying in equal amounts while other respondents indicated the source of household daily meal as mainly from buying. The findings therefore imply that most households' source of daily meal as farming. A household's wealth status forms the source of livelihood for farming households. Enough source of income contribute to households' economy in different ways, such as a source of pulling power, source of supplementary food, and means of transport. Besides, source of income are considered a means of security and means of coping during crop failure and other calamities.

4.4.4 Current Grain Stock

The respondents were requested to select and indicate their current grain stock in bags. From the findings, majority of the respondents indicated an average of 27 bags of maize and 10 bags of beans as their current grain stock, other respondents indicated 10 bags of maize and 8 bags of beans as their current grain stock while a small percentage of the respondents indicated 4 bags of maize and 3 bags of beans as their current grain stock. The findings therefore imply that most households in Kiambaa Constituency in Kiambu County had an average of 27 bags of maize, and 10 bags of beans as their current grain stock. The household food security is attributed and by no way limited to, access of education and agricultural training, better farming methods, better post-harvest management. This contributes to the view that food security projects is possibly influenced by women participation.

Furthermore, the respondents were requested to indicate how food is preserved. Most respondents indicated that food is preserved in traditional ways while other respondents indicated that food is preserved using modern methods. Therefore, most households in Kiambaa Constituency indicate that traditional methods are used as food preservative methods.

4.4.5 Harvest Seasons

The respondents were requested to indicate the number of seasons their harvest last. Majority of the respondents stated two seasons as the number of seasons their harvest last while some of the respondents indicated one season as the number of seasons their harvest last. The findings imply that number of seasons that most households in Kiambaa Constituency, Kiambu County harvest their food products last for two months.

4.4.6 Average Harvest

Furthermore, the respondents were requested to indicate their average harvest in a farming season. Majority of the respondents indicated 1,440 Kgs of maize, 720 Kgs of beans, 1,770 Kgs of potatoes per acre as the average harvest in a farming season, some of respondents indicated 880 Kgs of maize, 1020 Kgs of potatoes per acre as the average harvest in a farming season while a small percentage of the respondents indicated 1,000 Kgs of maize, 800 Kgs of potatoes per acre as the average harvest in a farming season. This implies that most households in Kiambaa constituency harvested 1440 Kgs of maize, 1,770 Kgs of potatoes per acre in a farming season. A significant development aid support is able to improve smallholder agricultural productivity, improve food and cash crop production, and reduce vulnerability to food insecurity and hunger.

4.4.7 Rating Production

The respondents were requested to indicate rate their production in the past two years. The responses are indicated in the Table 4.5.

Table 4.5: Rating Production

Rating Production	Frequency	Percentage
Highest	125	39
Slightly highest	106	33
Middle	35	11
Slightly lowest	32	10
Lowest	10	3
Total	321	100

From the findings, majority of the respondents 125 (39%) rated their production in the past two years as highest. Most of the respondents 106 (33%) rated their production in the past two years as slightly highest, 35 (11%) of the respondents rated their production in the past two years as middle, 32 (10%) rated their production in the past two years as slightly lowest while 10 (3%) of the respondents rated their production in the past two years as lowest. The findings therefore insinuated the production in the past two years has been highest.

4.4.8 Contributing Factors

The respondents were asked to indicate the contributing factors to food security projects situation in Kiambaa County. Most of the respondents acknowledged involvement of women as the key factor in fighting food insecurity in Kiambaa Constituency while other respondents indicated training on how to use technologies such as fertilizer micro-dosing, which teaches

farmers to apply a bottle cap of fertilizer for each seed to ensure the appropriate amount is used. The findings imply that involvement of women help in fighting food insecurity. Therefore, recognizing the inter-linkages between rural people deprivations such as lack of education on the one hand, and food insecurity and malnutrition on the other hand, is fundamental in order to have a more comprehensive view of the MDGs. This way, it is possible to have a framework in which both ends and instruments for development are well identified

4.4.10 Surplus

Additionally, respondents were asked to indicate what they did with the surplus. Majority of the respondents stated that they use surplus as a source of income, other respondents indicated use of surplus for micro-sized food businesses while a small percentage of respondents indicated use of surplus for consumption. From the findings, majority of the respondents indicated use of surplus as a source of income. Food availability is achieved when sufficient food both in quality and quantity are consistently within reach to all persons in a household.

4.5 Information on Literacy

This section sought information about literacy and how it influences women participation in food security projects in Kiambaa Constituence, Kiambu County.

4.5.1 Statements on the Effects of Literacy on Women Participation in Food Security

The study requested the respondents to indicate the extent to which literacy affects women participation in food security projects in Kiambaa constituency. The responses were rated on a five point Likert scale where: 5= Great Extent, 4= Moderate Extent, 3= Neutral, 2= Low Extent and 1= No Extent. The mean and standard deviations were bred from SPSS and are indicated in Table 4.6.

Table 4.6: Effects of Literacy on Women Participation in Food Security

Effects of Literacy on Women Participation in Food Security	Mean	Std. Deviation
I am able to read agricultural texts	3.50	0.985
I can read agricultural information well	3.12	0.475
I can make notes from presented agricultural information	3.43	1.269
I can read and write agricultural summary	3.76	1.464
I apply ideas that I learn about farming activities	4.25	1.093
I am able to gather information from different sources like books, newspapers, and the internet	2.08	1.111

From the findings, majority of the respondents agreed to a moderate extent with the statement that I apply ideas that I learn about farming activities with a mean score of 4.25. Majority of the respondents were neutral with the statements that I can read and write agricultural summary, I am able to read agricultural texts, I can make notes from presented agricultural information and I can read agricultural information well with mean scores of 3.76, 3.50, 3.43 and 3.12 respectively. However, some of the respondents agreed to a low extent with the statement that I am able to gather information from different sources like books, newspapers, and the internet with a mean score of 2.08. The results therefore indicate that most respondents indicated that they apply ideas that they learn about farming activities. Smallholder subsistence farmers, especially women are responsible for food security projects and contribute substantially to the national agricultural production. Further, the women's ability to access agricultural information is key to food security owing to the high percentage of women's contribution to the production of food crops.

4.6 Access to Agricultural Information

This section sought information about access to agricultural information and how it influences women participation in food security projects in Kiambaa Constituence, Kiambu County.

4.6.1 Agricultural Information

Furthermore, the study asked the respondents to state how they sought agricultural information. The responses are demonstrated in Table 4.7.

Table 4.7: Agricultural Information

Agricultural Information	Frequency	Percentage
Yearly	151	47
Monthly	122	38
Weekly	44	13.7
Not at all	4	1.3
Total	321	100

From the findings, majority of the respondents 151 (47%) indicated that they sought agricultural information yearly, 122 (38%) of the respondents stated that they sought agricultural information monthly, 44 (13.7%) of the respondents stated that they sought agricultural information weekly while 4 (1.3%) of the respondents stated that they do not all seek agricultural information. This findings implies that respondents sought agricultural information yearly. Agricultural information not only endows one with the power to read and hence be informed, but it also allows one to farm in an effective way.

4.6.2 Sources of Information

The respondents were asked to state the source of information. From the findings, majority of the respondents indicated technological devices such as mobile phones as the source of information, most of the respondents also indicated media as the source of information while other respondents indicated visual as the source of information. This implies that most women in Kiambaa Constituency in Kiambu County Use mobile phones as their sources of information. Hence, women literacy is therefore viewed as a necessary precondition for development and worthy of attention. Against this backdrop, this study seeks to add to the body of knowledge on the role of women literacy in the wellbeing individuals at the household level.

4.6.3 Criteria for Choosing the Source of Information

Additionally, the respondents were requested to state the criteria they chose the source of information. The findings are indicated in Table 4.8.

Table 4.8: Criteria for Choosing the Source of Information

Criteria for Choosing the Source of Information	Frequency	Percentage
Cost	136	42.4
Accessibility	97	31.2
Ability to understand	48	15
Information format	36	11.2
Ability to read	4	1.3
Total	321	100

From the findings, majority of the respondents 136 (42.4%) indicated cost as the criteria they chose the source of information, 97 (31.2%) of the respondents stated accessibility as the criteria they chose the source of information, 48 (15%) of the respondents stated ability to

understand as the criteria they chose the source of information, 36 (11.2%) of the respondents stated information format as the criteria they chose the source of information while 4 (1.3%) of the respondents stated ability to read as the criteria they chose the source of information. This findings implies that women participating in food security projects in Kiambaa Constituency, Kiambu County use cost as the criteria they chose the source of information

4.6.4 Agricultural Information Presentation

The study sought to find out how agricultural information presented to respondents. The results were recorded in Table 4.10.

Table 4.9: Agricultural Information Presentation

Agricultural Information Presentation	Frequency	Percentage
Word of mouth	96	29.9
Audio tapes	82	25.5
Newsletters & newspapers	67	20.9
Radio	46	14.3
Books and Pamphlets	30	9.3
Total	321	100

The results from Table 4.10 showed that 96 (29.9%) respondents indicated that agricultural information presented by word of mouth. It also indicated that 82 (25.5%) of the respondents acknowledged audio tapes as the way agricultural information was presented, 67 (20.9%) indicated newsletters and newspapers, 46 (14.3%) indicated radio while 30 (9.3%) indicated books and pamphlets as the way agricultural information was presented. This implies that agricultural information presented by word of mouth.

4.6.5 Language of Presentation

The study sought to find out the extent to which the respondents were comfortable with the language of presentation. The results were recorded in Table 4.10.

Table 4.10: Language of Presentation

Language of Presentation	Frequency	Percentage
Great extent	128	39.8
Moderate extent	126	39.3
No extent at all	67	20.9
Total	321	100

The results from Table 4.10 showed 128 (39.8%) respondents indicated that they were comfortable with the language of presentation to a great extent, 126 (39.3%) of the respondents acknowledged that they were comfortable with the language of presentation to a moderate extent while 67 (20.9%) indicated that they were comfortable with the language of presentation to no extent at all. This implies that the respondents were comfortable with the language of presentation to a great extent.

Furthermore, most respondents indicated Kikuyu as the language of presentation they were comfortable with, some respondents indicated Kiswahili as the language of presentation they were comfortable with while a small percentage of the respondents indicated English as the language of presentation they were comfortable with.

4.7 Women Land Ownership

This section sought information about women land ownership and how it influences women participation in food security projects in Kiambaa Constituence, Kiambu County.

4.7.1 Own Land

The respondents were requested to point out whether they own land. Table 4.11 shows the findings.

Table 4.11: Own Land

Own Land	Frequency	Percentage
Yes	230	71.7
No	91	28.3
Total	321	100

From the findings, majority of the respondents 230 (71.7%) indicated that they own land while 91 (28.3%) indicated that they did not own land. The findings therefore show that most women in Kiambaa Constituency own land. The patrilineal inheritance in Kiambu County typically sees tracts of ancestral land carved into ever-smaller plots to accommodate subsequent inheriting male generations in the communal holding. Those who did not own land was as a result of restriction of women's access to land and access to property other than land by custom, which essentially prohibits women from owning land.

4.7.2 Title Deed

The research sought to find out if the respondents had a title deed under their name. The responses are shown in Table 4.12.

Table 4.12: Title Deed

Title Deed	Frequency	Percentage
Yes	28	8.7
No	293	91.3
Total	321	100

From the findings, majority of the respondents 293 (91.3%) indicated that they did not have a title deed under their name while 28 (8.7%) indicated that they had a title deed under their

name. This implies that most women in Kiambaa Constituency did not have a title deed under their name. This prohibits women from owning land. Even when women are able to acquire assets, their husbands often act as intermediaries in the transaction. This situation has negative influence for women's access and fully participates in farming for enhanced food security

4.7.3 Use of Land

Respondents were asked to indicate how they use they land. From the findings, majority of the respondents indicated that women in Kiambaa constituency use land for subsistence farming while other respondents indicated livestock farming as the type for usage of land. The findings imply that women in Kiambaa constituency use land mostly for subsistence farming.

4.7.4 Often use of Land for Food Production

The study asked the respondents to state how they often use their land for food production. The responses are demonstrated in Table 4.13.

Table 4.13: Often use of Land for Food Production

Use of Land for Food Production	Frequency	Percentage
Yearly	155	48.3
Monthly	100	31
Weekly	44	13.8
Not at all	22	6.9
Total	321	100

From the findings, majority of the respondents 155 (48.3%) indicated that they often use their land for food production yearly, 100 (31%) of the respondents stated that they often use their land for food production monthly, 44 (13.8%) of the respondents stated that they often use their land for food production weekly while 22 (4.6%) of the respondents stated that they do not all use their land for food production. This finding implies that women participating in

food security projects in Kiambaa Constituency, Kiambu County often use their land for food production yearly.

4.8 Gender Action Plan Policy Responses

This section sought information about Gender Action Plan Policy Responses and how it influences women participation in food security projects in Kiambaa Constituence, Kiambu County.

4.8.1 Gender Action Plan Policy

The respondents were asked to state the extent to which they agree that Gender Action Plan policy responds to food security in their area and the responses are shown on Table 4.14.

Table 4.14: Gender Action Plan Policy

Gender Action Plan Policy	Frequency	Percentage
Greatly agree	191	59.4
Agree	116	36.2
Neutral	14	4.4
Total	321	100

From the findings, majority of the respondents 191 (59.4%) strongly agreed that Gender Action Plan policy responds to food security in their area, 116 (36.2%) agreed that Gender Action Plan policy responds to food security in their area while 14 (4.4%) were neutral with the statement that Gender Action Plan policy responds to food security in their area. The findings therefore show that most respondents strongly agreed that Gender Action Plan policy responds to food security in their area.

4.8.2 Gender Action Plan Policy Implementation

The study asked the respondents to state if Gender Action Plan policy had been successfully implemented. The findings are illustrated in Table 4.15.

Table 4.15: Gender Action Plan Policy Implementation

Gender Action Plan Policy Implementation	Frequency	Percentage
Yes	143	44.6
No	178	55.4
Total	321	100

From the findings, majority of the respondents 178 (55.4%) stated that Gender Action Plan policy had not been successfully implemented while 143 (44.6%) stated that Gender Action Plan policy had been successfully implemented. The findings imply that women participating in food security projects in Kiambaa Constituency, Kiambu County acknowledge that Gender Action Plan policy is not successfully implemented. Ineffective Gender Action Plan policy trends hinder improvements in land productivity and land certification project.

4.8.3 Influence of Gender Action Plan Policy

Respondents were asked to state how Gender Action Plan policy influences their participation in food security projects. Majority of the respondents indicated that in most cases that Gender Action Plan policy focuses on integrating women as ultimate clients into agricultural projects to enhance supply responses in times of crises while other respondents indicated that Gender Action Plan policy promotes joint land titles between men and women thus increasing women's power on decision making. This finding imply that Gender Action Plan policy focuses on integrating women as ultimate clients into agricultural projects to enhance supply responses in times of crises. The study found that Gender Action Plan works towards compliance with conditionality's which include attendance of agricultural seminars and trainings by women in the region. This contributes not only to improving poor women's access to agricultural information, but also to empowering them, relieving some of their household burdens, and to redistributing household tasks concerned to farming.

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes and concludes on the research findings as carried out. It presents the summary of the findings and the conclusions drawn from them, and lastly the recommendations. The implications of the research are discussed and suggestions made on areas of further study.

5.2 Summary of the Findings

The study found that majority of the respondents involved in the study were married. The study established that most respondents had attained secondary education as the highest level of education. The low education realized in the study is a threat to the activities regarding factors influencing women participation in food security projects in Kenya. Most respondents were residents for more than 5 years.

In regard to Information on food security projects situation, the study found that majority of households in Kiambaa constituency, Kiambu County considered mukimo as their normal everyday family meal for households. Additionally, the study found that most households in Kiambaa Constituency in Kiambu County take tea and nduma, githeri and mukimo as the type of meals during breakfast, lunch and supper respectively. The source of household daily meal as mainly from farming. The study found that most households in Kiambaa Constituency in Kiambu County had 27 bags of maize and 10 bags of beans as their current grain stock. The household food security is attributed and by no way limited to, access of education and agricultural training, better farming methods, better post-harvest management. The number of seasons that most households in Kiambaa Constituency, Kiambu County harvest their food products last for two months. The study found that households in Kiambaa constituency harvested 1,440 Kgs of maize, 1,770 Kgs of potatoes, and 2,040 Kgs of beans per acre in a farming season. The study found involvement of women as important in fighting food insecurity therefore, recognizing the inter-linkages between rural people deprivations such as lack of education on the one hand, and food insecurity and malnutrition on the other hand, is fundamental in order to have a more comprehensive view of development.

On literacy, the study found that most women participating in food security projects in Kiambaa Constituency, Kiambu County apply ideas that they learn about farming activities. Smallholder subsistence farmers, especially women are responsible for food security projects. Further, the women's ability to access agricultural information is key to food security owing to the high percentage of women's contribution to the production of food crops based on the study.

Furthermore, the study found that women participating in food security projects in Kiambaa Constituency, Kiambu County sought agricultural information yearly. Agricultural information not only endows one with the power to read and hence be informed, but it also allows one to farm in an effective way. The study also established that indicated technological devices such as mobile phones as the source of information, most of the respondents also indicated media as the source of information while other respondents indicated visual as the source of information. Therefore revealing the connection between women literacy and food security as well as determine their level of access to agricultural information. The study found that most respondents acknowledge use of friends as a source of agricultural information drives project success more than other means.

The study further found that most women in Kiambaa Constituency own land. The patrilineal inheritance in Kiambu County typically sees tracts of ancestral land carved into ever-smaller plots to accommodate subsequent inheriting male generations in the communal holding. Those who did not own land was as a result of restriction of women's access to land and access to property other than land by custom, which essentially prohibits women from owning land. The study also found that women in Kiambaa constituency use land for subsistence farming. Subsistence farming mainly provides families' staple food and in the case of extra supply it could be sold to cover for household expenses. Furthermore, women participating in food security projects in Kiambaa Constituency, Kiambu County often use their land for food production yearly.

In relation to Gender Action Plan Policy Responses, the study found that Gender Action Plan policy responds to food security in their area. Women participating in food security projects in Kiambaa Constituency, Kiambu County acknowledge that Gender Action Plan policy is not successfully implemented. Ineffective Gender Action Plan policy trends hinder improvements in land productivity and land certification project. The study found that

Gender Action Plan policy focuses on integrating women as ultimate clients into agricultural projects to enhance supply responses in times of crises. Therefore, Gender Action Plan policy response influence women's participation in food security projects in Kiambaa Constituency, Kiambu County since the challenge of food security is to transform the system into more open, dynamic and multidimensional to reward women's participation in food security.

5.3 Discussion of the Findings

The findings revealed that it largely availability of local resources such as land, security and labour contributed to food security projects. Ownership of land has an economic power and status attribute especially where it is legally owned. It is therefore significance as female headed households increase hence the need to review or refocus on the distribution of land rights. Nwezi (1989) found that women land ownership, access and ownership contributes to food security. Kibwana (2002) found that land remains important because it has been extended into the individualized tenure domain permitting daughters or widows to inherit land by removing land from the patrilineage and threaten the lineage and the security of future generations.

The study revealed that involvement of women in food security projects promotes food security. These findings concur with Schmid and Adams (2008); who highlighted involvement of women as a key aspect of project success without which failure becomes the obvious. They further say that, more demanding market conditions require a stronger focus on leadership, knowledge, and skills to ensure project success. The findings further, echo Shore (2005), who argued that without involvement of women, the risk of project failure increases. Zhang and Faerman, (2007) in their research on projects also concluded that 80% of projects fail because of poor gender imbalance. Their findings further suggested that poor leadership skills reflected limited or no teamwork, inadequate communication, and an inability to resolve conflicts as well as other human related inefficiencies. Shore (2005); further argues that, involvement of women affects corporate culture, project culture, project strategy, and project team commitment.

The results concerning Gender Action Plan policy and its influence on the participation of women in food security projects area suggested that most of women were not involved in the food security projects and as such could not fully grasp their objectives. Consequently, their

limited involvement in developing the gender action policies was having a negative impact on the sustainability of the projects as evidenced by the multiple regression results. This meant that the level of ownership of the projects was limited. Hence, it was imperative to involve them more in the planning processes of the project. These findings reflect the views of Verma (1996) who observed that women are strategic actors and must also be attentive to organizational imperatives in regard to funding. These concerns relate to donor preferences and the reality that aid projects must demonstrate tangible results (Van den Ban, 1998).

5.4 Conclusions

According to demographic characteristics of the respondents, the study concluded that those that were involved in the study were female. Majority of the respondents involved in the study were married. Furthermore, the study indicated that most respondents had attained secondary education as the highest level of education.

The study concluded that most households in Kiambaa constituency considered “*mukimo*” and “*githeri*” as their normal everyday family meal for households. It concluded that the source of household daily meal is mainly from farming. Additionally, the study concluded that most households in Kiambaa Constituency in Kiambu County had 27 bags of maize, and 10 bags of beans as their current grain stock. The study also settled that households in Kiambaa constituency harvested 1,440 Kgs of maize, 1,770 Kgs of potatoes per acre in a farming season. It determined that a significant development aid support is able to improve smallholder agricultural productivity, improve food and cash crop production, and reduce vulnerability to food insecurity and hunger.

The study settled that most households from Kiambaa Constituency, Kiambu County apply ideas that they learn about farming activities. It concluded that smallholder subsistence farmers, especially women are responsible for food security projects and contribute substantially to the national agricultural production. It also concluded that the women’s ability to access agricultural information is key to food security owing to the high percentage of women’s contribution to the production of food crops.

In regard to agricultural information, the study concluded that agricultural information not only endows one with the power to read and hence be informed, but it also allows one to farm in an effective way. The study also established that indicated technological devices such as

mobile phones as the source of information, most of the respondents also indicated media as the source of information while other respondents indicated visual as the source of information. Additionally, the study found that most respondents acknowledge that the previous methods promote food security projects. It revealed that in most cases the problem with science in agriculture and extension is that it has a poor understanding of the knowledge from very poor, indigenous rural people.

The study concluded that most women in Kiambaa Constituency own land. Customary tenure was the most commonly reported landownership type in Kiambaa Constituency. Women access land customarily through their husbands. Since women play a key role in household food production, ownership to land gives them full access to land for farming purposes for household food production. For those who do not own land or have been denied access to their husbands land by customs, which essentially prohibits women from owning land, do not have the right to cultivate land for household food production hence affecting food security in Kiambaa Constituency negatively. It established that subsistence farming provide families' staple food as well as money for household expenses, and were often pushed aside by mill owners who favoured business from larger grain merchants.

The study concluded that Gender Action Plan Policy focuses on integrating women as ultimate clients into agricultural projects to enhance supply responses in times of crises while other respondents indicated that Gender Action Plan policy promotes joint land titles between men and women thus increasing women's power on decision making. It concluded that Gender Action Plan policy is not successfully implemented in Kiambaa Constituency in Kiambu County. Furthermore, the study established that Gender Action Plan policy focuses on integrating women as ultimate clients into agricultural projects to enhance supply responses in times of crises. It finally concluded that Gender Action Plan policy response influence women's participation in food security projects in Kiambaa Constituency, Kiambu County since the challenge of food security is to transform the system into more open, dynamic and multidimensional to reward women's participation in food security.

5.5 Recommendations

Based on the study findings, it is recommended that:

- (i) Since food production among households in the division does not meet the household needs and women group projects seem to have greater influence; more women should be encouraged to join women groups which eventually would enable them initiate income generating projects to boost food production for sustainable food security in the area.
- (ii) Though the Kenya government supports education in both primary and secondary schools, women group projects may be an alternative source of education subsidy. The study therefore recommends that the government should allocate more revolving funds to the women groups in order to enable them expand their projects for higher income generation to allow them effectively support higher education beyond primary and secondary among the households in the division.
- (iii) Finally, it is beneficial to train the women on food security techniques so as to enable them to keep the progress of the projects in a manageable state even long after the withdrawal of the donors. In particular, this kind of training will instil in them the much required objectivity that is often lacking in communities when sustainability of projects is considered.

5.6 Suggestions for Further Research

- (i) The study was limited to Kiambaa Constituency in Kiambu County; however, the researcher has observed a greater influence of women projects on household food security in a rural setting. There is need to conduct a study on influence of women in food security projects in other regions in Kenya.
- (ii) Most women in rural setting seem to have limited education that may not enable them initiate plan and undertake projects. The study therefore recommends that a study on influence of education on initiation of women projects be conducted to enable recommendation of an effective training program for women project managers.

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APPENDICES

**APPENDIX A: KREJCIE AND MORGAN (1970) SAMPLE SIZE ESTIMATION
TABLE**

N^*	S^*	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	1000000	384

APPENDIX B: LETTER OF TRANSMITTAL

Dear Sir/Madam

RE: LETTER OF TRANSMITTAL

My name is George Nyanuga Ombese, a Master of Arts in Project Planning and Management student at the University of Nairobi. I am currently carrying out my research project and you have been selected to participate in this study that aims to establish the impact of women literacy on food security projects in Kenya. The study will involve carrying out interviews as well as self-administered questionnaires in which your views about the women literacy impact on food security projects in Kiambaa will be highlighted. This will be treated with utmost confidentiality and at no particular time will the information you provide be divulged to anybody without your consent. No reference will be made in both oral and written reports which could link you to any information collected and your name will not appear anywhere. No risks are anticipated as a result of taking part in this exercise.

Thanking you in advance.

Yours faithfully

Ombese George Nyanuga

APPENDIX C: QUESTIONNAIRE FOR THE SAMPLED WOMEN IN KIAMBAA

A. General Information

1. Please indicate your age

i. 18-24 years []

ii. 25-34 years []

iii. 35-44 years []

iv. Over 45 years []

2. What is your Marital Status?

i. Married []

ii. Single []

iii. Widowed []

3. Please indicate your highest level of education

i. Primary []

ii. Secondary []

iii. Tertiary []

iv. No formal education []

4. How many years have you lived at Kiambaa:

a) 0-3 years [] b) 3-5 years [] c) More than 5 years []

B. Food security projects Situation

1. What makes a normal everyday family meal for your household?

2. What did you eat yesterday?

a. Breakfast_____

b. Lunch_____

c. Supper_____

3. What is the main source of your household daily meal?

(1) Mainly from farming _____ (2) Mainly from buying_____

(3) Both farming and buying in equal amounts _____

4. What is your current grain stock (**bags**)

a. Maize_____

b. Sorghum_____

c. Beans_____

d. Other (Specify)_____

How is this grain preserved or stored? _____

5. How many seasons does your harvest last?

6. What is your average harvest in a farming season?

7. In a scale of 1 – 5 where 5 is the highest, how do you rate your production in the past two years?

1	2	3	4	5

8. What was your harvest in bags last season?

9. What have been the contributing factors to this situation?

.....

What do you think can help improve your food security?

.....

10 What do you do with the surplus?

.....

C. Literacy

In a scale of 1-5 please indicate to what extent literacy affects women participation in food security projects in Kiambaa constituency. (Use 5= Great Extent, 4= Moderate Extent, 3= Neutral, 2= Low Extent and 1= No Extent).

STATEMENT	1	2	3	4	5
I am able to read agricultural texts					
I can read agricultural information well					
I can make notes from presented agricultural information?					
I can read and write agricultural summary					
I apply ideas that I learn about farming					

activities					
I am able to gather information from different sources like books, newspapers, and the internet					

1. Access to Agricultural Information

1. How often do you seek agricultural information?

Not at all [] Weekly [] Monthly [] Yearly []

2. Which sources of information do you use frequently? _____

3. On which of the following criteria do you choose the source of information? (You may select more than one)

1)Ability to read		4)Information format	
2)Ability to understand		5)Cost (whether you pay or not)	
3)Accessibility (distance)		6)Other (specify)	

4. How is agricultural information presented to you?

1)Books and Pamphlets		4)Radio	
2)Newsletters & newspapers		5)Word of mouth	
3)Audio tapes		6)Other (Specify)	

5. What are your feelings about these methods?

.....

6. What other methods do you think may be used to get information to you? _____

7. Why would you prefer these methods? _____

8. In what language is the information presented to you? _____

9. To what extent are you comfortable with the language of presentation?

Great extent [] Moderate extent [] No extent at all []

What language (s) are you comfortable with? _____

10. What are the problems that you face in an attempt to get agricultural information?

11. What do you think can be done to solve the problems that you face? _____

12. In general what other challenges do you face in everyday life? _____

13. How do you cope in light of these challenges? _____

D. Women Land Ownership

1. Do you own land? Yes [] No []

If No., Why?

2. Do you have a title deed under your name? Yes [] No []

If No., Why?

3. How do you use your land?

4. How often do you use your land for food production?

Not at all [] Weekly [] Monthly [] Yearly []

5. Does it produce enough for your food security projects?

Yes [] No []

E. Gender Action Plan Policy Response

1. To what extent do you agree that Gender Action Plan policy responds to food security in your area?

Greatly agree [] Agree [] Neutral [] disagree []

2. Has Gender Action Plan policy successfully implemented? Yes [] No []

Explain _____

3. How does Gender Action Plan policy influence your participation in food security projects?

APPENDIX D: INTERVIEW GUIDE FOR KEY INFORMANTS

1. What are the on-farm activities performed by women?
2. What are the crops grown by farmers in Kiambaa?
3. Do you consider the households of women farmers in Kiambaa to be food secure?
4. Are the women farmers able to read documents?
5. Are women farmers in Kiambaa able to write?
6. What are the sources of agricultural information available to women in Kiambaa?
7. How accessible are these sources?
8. What is the rate of accessing agricultural information by women in Kiambaa?
9. Do you think women's ability to read and write influences access to agricultural information?
10. Do women in Kiambu County own land?
11. How often do they use land for food production?
12. Have you adopted Gender Action Plan policy in your area?
13. Does Gender Action Plan policy influence women in the participation of food security projects?
14. What is the success rate of Gender Action Plan policy in improving food security projects?