STAKEHOLDER ASPECTS INFLUENCING IMPLEMENTATION OF FOOD SECURITY PROJECTS IN MSAMBWENI DISTRICT, KENYA

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DECLARATION

This Research project is my original work and has not been presented for a degree in any other University.

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D53/MSA/11111/2007

This Research project has been submitted for examination with my approval as the university supervisor.

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Lecturer: Kenyatta University, Kenya

This Research project has been submitted for examination with my approval as the Chairman of the Department.

Signed:………………………………. Date………………………………
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Chirlady
Management Science
Kenyatta University, Kenya
DEDICATION

I dedicate this research project to my loving mum, Mildred Akoth Omari. Mum, you are the best mother in the world and no one can compare to you. Your unrelenting effort has made me whom I am today. Thank you mum and may God grant you long life to behold your son as God continues to lift him, I will always remain grateful to you.

God bless you Mily.
I want to acknowledge the unfailing help of God that has enabled me to do this research project. I praise you my God and my Father. I also want to extend my deep most gratitude to Kenya Revenue Authority for the sound education policy and also for sponsoring me through this Master of Business Administration programme, through the Chief Executive Officer, Mr. John Njiraini, I say thank you. I commend the good work done by Kenyatta University fraternity especially the Mombasa Campus and above all the ever supportive, informative and educative supervisor Mr. James Maina, may God reward you abundantly and favor you as you advance in your career. My classmates, Mbithi, Fatma, and Christine just to mention a few; it was wonderful learning with you, thank you for your support and encouragements. William Omari, my brother and a dear friend, your constant support leaves me with something to admire, my God will bless you. Dinah Khussi, thank you for your support.

The list is endless but let me pause by recognizing the support of my family: my darling wife, Joan Orengo and our wonderful children: Princess Jessica Praise and Victor Orengo. You have been very understanding and quite supportive. God bless you all.
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<tr>
<td>ASALs</td>
<td>Arid and Semi Arid Lands</td>
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<td>FAO</td>
<td>Food and Agriculture Organization</td>
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<td>FEWSN</td>
<td>Famine Early Warning System Network</td>
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<tr>
<td>FIVIMS</td>
<td>Food Insecurity and Vulnerability Information and Mapping Systems</td>
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<tr>
<td>GTZ</td>
<td>German International Development Organization</td>
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<tr>
<td>IFSP</td>
<td>Integrated Food Security Programme</td>
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<tr>
<td>KIPPRA</td>
<td>Kenya Institute for Public Policy Research and Analysis</td>
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<tr>
<td>MOA</td>
<td>Ministry of Agriculture (Kenya)</td>
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<td>MDGs</td>
<td>Millennium Development Goals</td>
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<td>NAAIP</td>
<td>National Accelerated Assessment Impact Programme</td>
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<td>SAP</td>
<td>Structural Adjustment Programs</td>
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<td>UNICEF</td>
<td>United Nations Children’s Education Fund</td>
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<td>UNFPA</td>
<td>United Nations Fund for Population Activities</td>
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<td>USAID</td>
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ABSTRACT

Despite considerable efforts of national governments and the international community to reduce hunger and improve nutrition in the context of the Millennium Development Goals (MDGs) and other initiatives, the proportion of undernourished people in developing countries has largely remained constant since the mid-1990s. The main objective of the study was to investigate stakeholder aspects influencing food security government projects in Msambweni district. The key issues of this investigation were to establish how; land ownership, cultural practices, education and farming methods have influenced the extent of food security projects implementation in Msambweni district. The study adopted a descriptive survey design. The population targeted comprised the residents of Msambweni district who practice farming activities. Researcher administered questionnaires were applied to collect Primary data from respondents by help of research assistants, who assisted the respondents to fill the questionnaires and also make follow up. Frequency tables and percentages were used to present the findings. Responses in the questionnaires were tabulated, coded and processed by use of a computer Statistical Package for Social Science version 20 programme to analyze the data. Descriptive statistics like the mean and inferential statistics were used to derive meaningful findings and conclusions. While this research contributed to the knowledge, it maintained utmost confidentiality about the respondents. The researcher ensured that all respondents were given free will to participate and contribute voluntarily to the study. The findings indicated that land ownership made the implementation of food security projects easy and faster. Results indicated that cultural practices were a hindrance in food security projects implementation and this implies that it made implementation take a longer period. The findings also indicated that there are taboos in their community which discourage some types of farming methods and some food crops and if people in Msambweni were to disregard cultural beliefs farm productivity and food sufficiency would change positively. Results indicated that farming methods and inputs were key determinants of food security projects implementation. It was also found that farming methods influenced the implementation of food projects at Msambweni district. Cultural practices were found not statistically significant. The study concludes that land ownership is a key driver to food security projects implementation in Msambweni District. It can therefore be concluded that the farmers were happy about the government initiative of distributing seeds, fertilizers and have farmers given grants for basic farm mechanization which would make farmers become self sufficient. It can be concluded that education level is not a determinant of farm output as long as the farmer follows good farming practices and attends farming seminars and workshops to enlighten their farming techniques and hence improve productivity. It is recommended to the farmers to ensure that they retain their own lands and avoid selling and put the land into good use by practicing farming. It is also recommended that the farmers embraces the government initiated projects being implemented in the area as this will help improve food production in the area and avoid food drought and fight poverty. In addition to the above, farmers should have an open mind in fighting hunger as this will ensure that all people work towards improving food security issues regardless of the religion and culture.
CHAPTER ONE: INTRODUCTION

1.1 Background of Study

A project is a combination of human and nonhuman resources pulled together in a temporary organization to achieve a specified purpose; they are development strategies through which ideas are transformed into reality so as to solve challenging issues of today's rapidly changing world. Globally huge investments are made into projects for the purpose of helping organizations to do what it’s doing in a better way, improve the ability to grow and change. To this effect it’s imperative that the success of the project is not only measured on basis of time, cost and scope but also the attainment of the desired outcomes and solving the organizations problems (Belassi and Tukel, 1996). A project is generally considered to be successfully implemented if it comes in on-schedule, comes in on-budget, achieve basically all the goals originally set for it and is accepted and used by the clients for whom the project is intended (Cleland and Keizner, 1985).

Food security projects are essential in enhancing food security and their success is of vital importance for a healthy and productive society.

The process of project implementation involves successful development and introduction of projects in the organization. The project implementation process is complex, usually requiring simultaneous attention to a wide variety of human, budgetary, and technical variables. As a result, the organizational project manager is faced with a difficult job characterized by role overload, frantic activity, fragmentation, and superficiality. Often the typical project manager has responsibility for successful project outcomes without sufficient power, budget, or people to handle all of the elements essential for project success. In addition, projects are often initiated in the context of a turbulent, unpredictable, and dynamic environment. The project manager requires the necessary tools to help him or her focus attention on important areas and set differential priorities across different project elements. For this reason, project management skills are essential for successful implementation (Slevin and Pinto, 1986).

Project management is principally concerned with the introduction and management of change. All projects are unique in some respect and may differ from the usual business for which the parent company exists. The project organization often referred to as the project team though this
in itself is a small part of the total project organization, is set up to achieve a particular objective: the project product. New projects will not only be seen as a new problem to be solved but something to be resisted. Frequent changes stretch resources and other functions causing problems to arise, project management then has been instituted as a normal practice for anything identified as a project, this has resulted into commendable success (Locker and Gordon, 2005).

One of the most influential definitions of food security is that of the World Bank in 1986. The Bank defined it as the "access by all people at all times to enough food for an active and healthy life." This definition encompasses many issues; It deals with production in relation to food availability, it addresses distribution in that the produces would be accessed by all, it covers consumption in the sense that individual food needs are met in order for that individual to be active and healthy. In addition, the availability and accessibility of food to meet individual food needs should be sustainable (Quaye, 2008).

Despite considerable efforts of national governments and the international community to reduce hunger and improve nutrition in the context of the Millennium Development Goals (MDGs) and other initiatives, the proportion of undernourished people in developing countries has largely remained constant since the mid-1990s (FAO 2010). Although some progress in hunger reduction and food security had been made until 2007, the 2008 global food price crisis and subsequent food price spikes have pushed millions of people into food insecurity status (Brinkman, de Pee, Sanogo, Subran and Bloem, 2010). Main causes of this rise in global and national food insecurity include trade restrictions imposed by major food exporters, bio fuels policies, and increased food commodity speculation combined with poor national and local governance to cope with such shocks. Besides these immediate causes, most experts agree that underlying longer-term dynamics such as climate change and mounting food demand through changing dietary patterns and growing populations will lead to further rising food prices and increasing price volatility (FAO, 2011).

According to Fan, Torero and Headey (2011), a broad range of policies have been proposed to reduce the vulnerability of the world’s poor to global food price spikes, including amendments in global trade rules that restrict the possibility of food exporters to impose export bans, stricter
rules on biofuel production and food commodity speculation, the institutionalization of grain reserves to stabilize prices in times of crises, creation and expansion of national social safety mechanisms and boosting investments to raise agricultural productivity and adapt to changing climate sustainably. Both the causes of recent food crises and the proposed responses show a growing importance of factors that go beyond agriculture and households. Yet interventions often have focused on agriculture based approaches, and the household often has been deemed the sole unit of focus by many international organizations concerned with food security.

The slow progress in reducing hunger and malnutrition during the past two decades and the grave impacts of the recent crises may be reasons behind the limited success of the conventional approaches and call for their fundamental reconsideration. Over time, the concept of food security and related approaches to address food insecurity have been developed and modified in accordance with the common understanding of the nature of the food problem and the evolution of the global food system (Maxwell 2006; Maxwell and Slater 2009). Since the term food security entered the broader development policy debate at the 1974 World Food Conference, the concept has been revised and broadened. The most common definition today was first launched at the World Food Summit in 1996 and agreed on by most governments and leading governmental and non governmental development agencies (FAO, 2006).

As a consequence of the recent food crises, tendencies toward an additional paradigm shift can be observed within the expert community that may be described as moving from a sector-specific approach to a system approach integrated across sectors and levels (Fan and Lorch, 2012). Although many experts agree on the need to revise the common conceptual frameworks of food security in light of the recent food crises, little has been done in that direction so far. The most prominent frameworks such as those currently used by the Food Insecurity and Vulnerability Information and Mapping Systems of the FAO and United Nations partners (FIVIMS, 2012).

According to Devereux (2009), despite great advances in the understanding of food security and its underlying factors, most previous studies have been on qualitative aspects assessing two aspects of food security, namely, production and consumption, and on determining the underlying reasons for the high food insecurity faced by Africa today. Very few studies have
considered the historical trends of the balance between food production and demand and its effect on historical trends in self sufficiency. However, a better understanding of such historical trends is necessary to characterize effectively the development of a region’s ability to be self-sufficient and the potential problems it may face. Considering the heterogeneity of African nations in terms of food production systems and their socio-political drivers, it is important and sensible to assess the balance between food production and consumption on a national basis (FAO, 2011). The sensitivity of food security in Africa is associated with environmental variables, such as climate change, poverty and lack of access to food, demographic and economic factors and political failures in adjustment and market liberalization reforms (Sadler and Magnan 2011).

Despite the increased attention to reducing hunger since the adoption of the Millennium Development Goals, the World still faces large problems of widespread hunger and malnutrition. On the world level, the number of hungry has declined, but remains unacceptably high. FAO (2010) estimates that a total number of 925 million people are undernourished in 2010 compared to 1023 million in 2009, out of this developing countries account for 98 percent of the world’s undernourished people. If this situation does not change, the Millennium Development Goal number one (reduce the number of hungry people with 50% by 2015) will not be reached. The German Technical Assistance (GTZ) through the Integrated Food Security Programme (IFSP) launched a Food Aid Programme called Food for Work in 1994, in Mwingi district in Eastern Kenya. Food for Work in the context of IFSP issued as an instrument in development cooperation to counteract severe food stress within the Programme area. These food assistance programs are targeted to those with the greatest economic or social need in the community (Aguko, 2008).

Kenya for a long period pursued the goal of attaining self-sufficiency in food commodities as maize, wheat, rice, beans, milk and meat. Self sufficiency in maize was achieved during the 1970s when production was high and the surplus was exported. Unfortunately, attainment of self sufficiency does not automatically imply that household food security is achieved. Empirical evidence shows that solving the food security issue from production (Supply side) point of view, while overlooking the purchasing power (demand side) of the people, does not solve the food
security problem, with regard to accessibility of sufficient food by vulnerable groups (KIPPRA, 2007). Kenya was hit by a severe food crisis in 2011, during which 3.75 million people were food insecure and 1.4 million pastoralists were in a state of emergency, although the crisis was predicted, there was a poor and disorganized response to Famine Early Warning Systems (FEWS, 2011).

According to the Kenya Ministry of Agriculture (MoA) (2013) the national food security situation remained stable during the month of March 2013 as stocks of most coarse grains improved following the enhanced production and supplies of the major food staples after short rain harvesting. The national maize stocks as at 31st March 2013 stood at 24,723,059 bags, with farmers holding about 17,694,293 bags, Traders 3,918,546 bags, Millers 644,950 bags and NCPB 2,465,270 bags. Beans stocks totaled 3,260,584 bags, Wheat 735,188 bags and Rice 697,046 bags. At an average consumption of 3.72 million bags per month, the surplus of 11,723,004 bags is expected to meet the country national maize requirement up to September 2013. The diminishing maize stocks by September 2013 are expected to be replenished by the increased inflows from Uganda and Tanzania, and the expected early harvest from the South Rift Region. The expected importation is a signal of the need to enhance production. (MoA, 2013)

The coastal Kenya region is a net importer of food; it produced only 25% of its maize requirement in 2009, (Anon, 2010) which was the best ever. Wheat, the second most important cereal in the country is not grown in coastal Kenya. Households can only access wheat flour from the shops, which is a challenge in coastal Kenya households that is characterized by high poverty levels estimated at 69.7% (KNBS, 2007). Cassava (Manihot esculenta Crantz) is also grown in coastal Kenya; it was ranked as the second food crop enterprise (Mwamachi et al, 2005). Commercialization of cassava is considered as one of the avenues towards poverty reduction (Kariuki et al, 2002).

Msambweni is one of the thirteen districts in the Coast province. It borders Taita District to the North West, Kinango District and Kwale District to the North East, Republic of Tanzania to the South and Indian Ocean to the South East. The district is located to the South Eastern Corner of Kenya, lying between latitudes 4°20’ and 4°40’ south and longitudes 39°14’ and 39°36’ east.
Msambweni district is divided into three (3) administrative divisions namely Msambweni, Lungalunga and Diani. The district is made of four topographical features. These features are the coastal plain, the foot plateau, coastal uplands and Nyika plateau. The district experiences two rainy seasons in April to June and October to December which are the long and short rains respectively. The coastal plain runs along the ocean line and varies from 3km to 20km inland. It lies below 30m above sea level. The coastal plain soils are poorly drained, acidic and less fertile and are unsuitable for agriculture (Msambweni District Development Plan 2008-2012)

1.2 Statement of the problem

Food security remains an elusive goal in many parts of the world despite the concerted efforts of governments, non-governmental and international agencies over the past years. An estimated 925 million people around the world were undernourished in the year 2010 (FAO, 2011). All nations signatory to the Millennium Declaration of the year 2000, have a goal of reducing hunger and extreme poverty by halve by the year 2015 in fulfillment of the MDG goal number one. Over the years, several interventions for reducing poverty and enhancing food security have been designed and initiated in Kenya being a signatory to the Declaration. Some of the strategies the includes: Poverty Reduction Strategy Paper (PRSP), Strategy for Revitalization of Agriculture (SRA), Economic Recovery Strategy for Wealth and employment creation (ERS), National Accelerated Agricultural Input Access Programme (NAAIAP) among others.

Problems of drought, famine and climate are real and widespread in developing countries begetting hunger and malnutrition. Indeed, millions of people are food insecure due to famine, drought, pests and climate change. These myriad predicaments lead to poor crop harvests placing the country and the region in a situation of food insecurity. Most people, especially in sub-Saharan Africa, depend on food aid to survive. More so, poverty levels are endemic, affecting majority of the population which compounds the food crisis situation in the region (Amalu, 2009). Kenya has not been spared either. In the recent years, and especially starting from 2008, the country has been facing severe food insecurity problems (Kenya Red Cross, 2012).

Several studies have been conducted on food security by Fan et.al (2011), Fan and Lorch (2012) and Wodon and Zaman (2008), the studies focused on food programs as technology investment,
system approach and production systems as avenues to attain food security but did not concentrate on the factors influencing such food security projects. According to Kenya Food Security Steering Group (2008) communities in arid and semi-arid lands of the country like Kwale County where Msambweni is located are particularly vulnerable to food insecurity. The land is fairly arable and productive, rains are average and government programs like farm inputs provisions have been done but sustainability still remains a challenge in attaining food security. It’s worthy analyzing the reason for continued food insecurity despite the food security programs initiated by the government. So as to bridge this gap of knowledge, this study is to assess the stakeholder aspects that influence implementation of food security projects in Msambweni District.

1.3 Objective of the study
The main objective of the study was to investigate stakeholder aspects influencing implementation of food security projects in Msambweni district.

1.3.1 Specific objectives
i) To examine the extent to which land ownership influence food security projects in Msambweni district.

ii) To assess the extent to which cultural practices of the farmers influence food security projects in Msambweni district.

iii) To examine the extent to which farming methods and inputs practiced by the farmers in Msambweni district influence the food security projects of the area.

iv) To analyze the extent to which education level among the farmers influence food security projects in Msambweni district.

1.4. Research Questions
The research questions set for the study are:

i. To what extent does land ownership influence food security projects in Msambweni district?

ii. Do cultural practices of the farmers influence food security projects in Msambweni district?
iii. Do the farming methods and farm inputs practiced by the farmers influence food security projects in Msambweni district?

iv. How does education level among farmers influence food security projects in Msambweni district?

1.5 Significance of the study
The study contributes to the various stakeholders in diverse ways. To the Government and Agricultural extension officers, the research will provide micro level disaggregated information which will be helpful for policy makers and development practitioners. It contributes in designing appropriate development policy and to make informed decisions regarding food security development programs that will ensure their success. To extension officers guidelines for projects success has been outlined. The farmers can apply recommendations to ensure that initiated food security projects succeeds and achieves their set goals of food security. On the other hand to the Scholars, the research provides academic knowledge regarding factors that influence actualization of food projects in the country. The study results is also expected to be used by Researchers as it adds value to the academia in narrowing the gap in the existing information for further research in the related subject that will be conducted in the country. It also contributes to the corpus of literature on factors affecting the success of government projects in the area of improving food security

1.6 Scope of the study
The unit of study was Msambweni District where the study respondents were drawn from. The study was conducted within the year 2013. The respondents were sampled from farmers in Msambweni District.

1.7 Operational definition of Terms

Food Security- Refers to the availability of food and one's access to it. A household is considered food-secure when its occupants do not live in hunger or fear of starvation.

Agriculture- also called farming or husbandry, is the cultivation of animals, plants, fungi, and other life forms for food, fiber, biofuel and other products used to sustain human life.
Land ownership - also known as land tenure. It is particularly in common law systems, to the legal regime in which land is owned by an individual.

Education- in its general sense is a form of learning in which knowledge, skills, and habits of a group of people are transferred from one generation to the next through teaching, training, research, or simply through auto didacticism.
CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviews the information from other researchers who have carried out research in the same field of study in prior years. It also entails a review of the theories and discussion of studies done both locally and worldwide on the aspects influencing implementation of food security projects.

2.2 Theoretical Literature

Theoretical literature review on project management and food security is as discussed below;

2.2.1 Yield Gap Theory

Reaching higher yields is part of the strategy for achieving food security while protecting the natural environment. The potential for closing the yield gap has been claimed as the most important factor in improving agriculture in Africa, it is preferable to expanding agricultural land. By closing yield gaps and not expanding cultivated land you can protect areas of biodiversity such as forests and natural ecosystems from being converted into crop land (Foley, Ramankutty and Brauman, 2011)

Yield gap is a term which has been used extensively in literature to highlight African farmland as a region which is underused (Delininger and Harriet, 2011). It is a term referring to the difference between the potential and actual crop yield (production per hectare) of a given area of land, assuming the best technology and agricultural practices are available (Foley et al., 2011). This is because biophysical and socioeconomic factors inhibit yields. The gap between the potential yield and actual yield is considered by Widawsky and Toole (1996) for example, as a loss in production that is yet to be realized. Yield gap is used often in reference to the gap being closed and identifying how to “fix” them.

The yield gap theory is placed within the productionist paradigm. There is an understanding that land is not worth anything until it is utilised for production. The potential yield is calculated
using all the known agricultural technology and management, and therefore it is assumed that this should be adopted as the method on the ground. According to Deininger et al. (2011) in the World Bank report, yield gaps are perceived in respect to investment opportunities. A large yield gap is defined as an attractive quality for investment due to the possibilities for easy increase in yield. Land acquisitions are thought to bring investment in fertilizers, pest management, irrigation, improved seed varieties, knowledge of farming practices and mechanized practices. However, large yield gaps can be an indicator of problems that land acquisitions cannot easily solve such as political problems. As such, when investment has already been made in the land, sustained large yield gaps are a negative sign as it implies that there are constraints that are difficult for investors to overcome (Borras, 2011)

2.2.2 Productionist Paradigm Theory
Productionism paradigm is the move from local small scale production to mechanized, commercial, mass production of food commodities. It hails from the time after the Second World War and the industrialization of agriculture. The food supply chain is lead by the quantity of food and all progress is directed to increasing this output. The productionist model of farming is typically monoculture, this being especially conducive to the high input of energy, pesticides, and fertilizers. The productionist paradigm influences how policy is made and where investment is directed, favouring particular types of farming methods and production. It is through this paradigm that land acquisitions have been seen as a solution (Lang and Heasman, 2004)

Lang and Heasman (2004) predicted the decline of the productionist paradigms and the emergence of two paradigms concerned less with production and more with integrated ecology or life science. However, economic stability, food prices and demand for arable land has changed since the time they wrote their book. Like the period after the war, in 2008 the globe was suffering from food shortages; prices rose and many countries experienced riots. These events have reaffirmed the dominance of the productionist paradigm for a little while longer. It is also partly because of the productionist paradigm that African governments are willing to open up their local markets to foreign investment. The surplus stock caused by high production rates and strong regional economies could undermine local markets in developing countries by selling their stock at undercut prices.
2.2.3 Belassi and Tukel’s Project Critical Success Factors

Belassi and Tukel (1996) have grouped critical success factors in projects into four areas and further explained the interaction between them. The four groups were factors related to the project, factors related to the project manager and the team members, factors related to the organization and lastly factors related to the external environment. Belassi and Tukel performed 2 surveys; firstly they identified the 5 most common success factors from the literature and asked the respondent to list any other critical factor specific to their projects. From the first survey, they obtained 91 responses in which 21% of the respondents are project managers from manufacturing sector. The project managers in manufacturing ranked the most critical factor for project success as availability of resources, followed by top management support, the third most important factor was preliminary estimates, followed by project manager performance and client consultation.

In this survey, it also shows that in respect to the criteria used to measure success (cost, time, quality and client satisfaction), the organizational structure (pure, functional or matrix) and project size (more and less than 100 activities), the factors related to the organization which were availability of resources and top management support are still the dominant factors on the list. From the second survey done using a questionnaire which targeted the project managers, out of the 57 responses that they obtained, 40.7% respondents are from manufacturing which formed the largest response group. The respondents from manufacturing sector indicated that factor related to the organization is most critical. Further to that, the project managers from manufacturing rank top management support, coordination and competence of project manager as the most important factors for project success, in fact these three factors were ranked equally important followed by commitment, technical background and communication of project members as the next 3 important factors.

2.2.4 Kerzner’s Project Critical Success Factors

Kerzner (2006) in his study defines critical success factors as elements which must exist within the organization in order to create an environment where projects may be managed with excellence on a consistent basis. They are the few key areas where “things must go right” for a particular business to flourish. In order to have a successful project management, corporate
understanding of the project management at the employee/functional level, project management level and executive level is critical. A good corporate understanding will create a corporate culture where project management is no longer viewed as either a threat to established authority or a cause for unwanted change. It was also found that Project management is unlikely to succeed unless there is any visible support and commitment by executive management. This support and commitment can be described in two subtopics; project sponsorship and life-cycle management. The role of the sponsor is to manage interference that exist for the project manager besides continuously reminding project team that only performance at the highest standards of excellence are acceptable. It is important that company goals, objectives and values be well understood by all members of the project team throughout the life-cycle of the project. Ongoing and positive executive involvement, in a leadership capacity will reflect executive management’s commitment to project management.

Organizational adaptability is also vital to project success; this refers to the organization’s ability to respond quickly and effectively to changes in the market place. Two critical factors involving organizational adaptability were found in organizations committed to excellence; informal project management and a simple but lean structure. The decision to go for either formal or informal project management and implementation depends on the scope and size of the project, cost of the project, and availability of experienced personnel for the project and also the maturity of the concept of utilizing project in an organization. Staffing for projects was done in a manner to achieve a blend of experience, technical expertise and training. Proper selection of resources will ensure that technical skills are optimally utilized with a minimum of overhead. A project team where its structure is simple and lean enable better control, communication and in budget. With this lean approach, the project manager must be experienced and have a qualified team. There must be a clear definition of responsibility and authority for individual members of the team and the project manager must fill the roles of facilitator, coordinator, leader, organizer, planner, delegator and administrator in order for the project to be implemented successfully. The criteria used to select project manager also affects project success, four criteria that are normally used to select project managers are whether they were results-oriented, possessed strong interpersonal skills, their depth of understanding of the organization and lastly their commitment to corporate values. Strong leadership style by the project manager is necessary for
the successful implementation of projects. Normally the project manager has a great deal of responsibility but does not have the commensurate authority as a line manager whereas the line manager has a great deal of authority but only limited project responsibility. Considering this fact, it is therefore important for a project manager to maintain a leadership style that adapts to each employee assigned to the project. This is complicated by the fact that the project’s life cycle may be so short that the project manager does not have sufficient time to get to know the people.

Commitment to planning and control is a key aspect to project success; well-managed projects are committed to planning. For example if the output of a project is to contain quality, then this quality must be properly planned for in the early stages of a project. When detailed planning is being done, it must be tracked or follow-up and re-planning must be done if the initial plan does not work before it is too late to do so. It is shown that personnel factor especially the project manager competence and leadership style is one of the crucial factors in project success implementation. This is true as project in itself has no essence unless it is managed by a group of people with the necessary skills, experience and qualification.

2.3 Empirical Literature Review
This section discusses literature from various factors that influencing food security projects and also brings out gaps in literature that this study seeks to address.

2.3.1 Land Ownership and Food Security
Increased agricultural productivity can enhance household food security and nutrition through two avenues: directly, through increased food production for consumption, and indirectly, through increased incomes permitting the purchase of more and better quality food. In both ways, secure rights to land can help moderate the impact of food price volatility on poor rural households (Defoer and wayne, 2010). Disparity of wealth and land ownership is not a new phenomenon. However, the degree to which agricultural lands are owned within areas of food insecurity makes it a vital a factor of food security. An analysis of these concepts and their global implications is pressing, as over 963 million people do not have enough to eat. Most of them live in developing countries, and sixty-five percent of them live in only seven countries: China, India, Bangladesh, the Democratic Republic of Congo, Indonesia, Pakistan and Ethiopia (FAO, 2011).
Food security means the availability and access to sufficient safe food, whereas food sovereignty involves both ownership and the rights of local people to define local food systems, without first being subject to international market concerns (FAO, 2012). An important distinction must be made between food sovereignty as a theoretical construct and food sovereignty as a movement. The food sovereignty movement considers that the practices of multi-national corporations are akin to colonization; as such companies buy up large tracts of land and turn local agricultural resources into export cash-crops. As a movement, food sovereignty lacks direction and involves a great diversity of opinion and idea. As a model to reconsider and re-evaluate food, it highlights important challenges and offers potential remedies to current challenges. Food sovereignty as a theoretical construct, relates to the ownership and rights of food growers and local communities (Scoones, Devereux and Hadad, 2009).

USAID argues that food insecurity is often a result of poverty (USAID, 2011), while ownership, land rights and sovereignty are not mentioned as causal factors. While it is true that a direct relationship can be found between those who face food insecurity and those who are impoverished, that does not exclude other causes; such as, a lack of sovereignty or oppressive external factors. However, USAID does not take poverty alleviation and/or human rights as its prime reasons for engagement; rather its prime interests are to protect America and to create opportunities for Americans (Riddell, 2007). The European Union community has sought the improvement of food security for the least-developed countries through a plethora of national and international development bodies, while also engaging in massive export-based land acquisitions in those same regions (Graham, Kunnemann and Suarez, 2011). Ironically, the aim of reaching the Millennium Development Goals (MGDs) with funding and support from the European Union is countered by European Union businesses as they engage in activities that displace and dispossess locals of their land and livelihood. Increasing commercial production does not mean an increase of local or national food security, in particular when these foreign companies are exporting entire crops. This may in fact, lead to increased food insecurity and higher levels of malnutrition and poverty (Ansoms, 2011). Surprisingly, even Harvard University has used its investments in land-acquisition deals (Vidal and Provost, 2011). Land holding was also found to be a determinant factor of household food security. Relatively land rich households
nearly all reached 80% of their calorie requirement; this indicated that a household with larger land holding was found to be in better position of food security than those of land poor households (USAID, 2011). The most common asset in rural areas is landholding and this was a good indicator of poverty when income was unobserved (Riddell, 2007). Households with small farms were prone to food insecurity. In addition, land quality has been found to provide a good amount of yield in communal farms. In most communal areas, farms are of relatively poor quality and require the use of chemical fertilizer (Scoones et al, 2009).

Study done on urban agriculture as an alternative food security strategy in Kampala, access to land had significant positive effect on nutritional status of children in non farming households than in farming households of different income groups. It had also found significant effect of land holding on calorie availability or production. The result indicated that non farming households who had access to land had relatively better food security measured in terms of better nutritional status and calorie availability. The food security effect was even more pronounced in very low income (poor) households (Ansoms, 2011). This is also in support of the results obtained by Comparing very low income group of households among farming and non farming households, a significant higher level of short term food sufficiency was observed in the very low income group of the farming households than in non farming families, despite the same spending on food per person per day. This was due to availability of un purchased food from farming (Riddell, 2007).

2.3.2 Cultural Practices and Food Security

Many studies have shown that women play a predominant role in household food security through participating in agricultural and food production (The World Bank, 2009). They account for between 60 and 80 of household food production in Sub-Saharan Africa (FAO, 2007). In South Asia they provide 90 percent of the labor for cultivating rice. They ensure household food security and nutrition through their roles as food producers, processors, and income earners but despite of their key role in food production they have less access to land, resources, credit, training, extension services, agricultural inputs and technology. They are also trapped in poverty by illiteracy and unwanted high fertility and this affects production and food security (Quisumbing, Brown, Feldstein, Haddad, and Pena, 2005). Women provide more labor in food
production than men especially in Sub Saharan Africa. This is due to the fact that in many places in Africa food production and security is reported to be a woman responsibility (UNFPA, 2009). In a study done in Kenya and Tanzania showed that all household, whether men contributed or not to the farming, women were the ones who are primarily responsible for farming the food that sustained their families (Hyder et al, 2005).

In many places in Africa gender division of labor in agriculture is based on types of crops, types of task or both. Studies have shown that men are involved in most physical demanding activities such as ploughing, bush clearing and bush burning while other activities along the food chain are left to women. Women are involved in planting, harvesting, weeding, marketing of crops and in post harvest processing of food crops such as threshing, winnowing, milling and drying (UNICEF, 2006). This is the pattern which is also called traditional farming system. In regard to type of crops, women are reported to be more involved in food crops while men are involved in cash crops (whether food or non food crops). An explanation for this is that women are responsible for feeding the family, thus prefer to grow subsistence crops and men are responsible for providing cash income and thus prefer to grow cash or export crops. But more recent reports have shown that women are increasingly involved in cash crops despite their traditional role of feeding families (World Bank, 2011).

Other studies have claimed that gender division of labor change over time. Boserup (2008) claimed that the roles of women in agriculture were related to population density and economic opportunities. Gender relations are dynamic and respond to economic incentives and opportunities. In a study done in Indonesia in semi-urbanized and rural village, women in semi urbanized village did not participate in agricultural production because of other economic opportunities in the village, while men continued to be active in agricultural production. The traditional gender division of labour was observed to be more in rural while in semi urban village men performed more women tasks. Thus it varies from place to place and seems to be subject to local socio economic context (Doss, 2011).

On the other hand feminization in agriculture is reported to be increasing due to extensive male out-migration as they move to urban areas to search for better income opportunities. This has resulted in growth of female headed household which increases female labor in agriculture (Saito
et al, 2009). International trade agreements, Structural Adjustment programme (SAP) and loan repayment have also affected rural households. When government cut subsidies to support traditional crops many subsistence farmers fail to maintain their lives and men leave their farms, thus compounding the trend of feminization. In a study done in Tanzania, not only do farmers respond to the effect of SAP by abandoning farming but also cope with the situation by switching from growing some crops and/or reducing crop area under cultivation. Other studies in Africa have shown that men contribution in crop production is higher compared to that of women. A multi country study in Africa showed that men contributed more in crop production than female in most places while women contributed their labor more in food processing. Similar findings were also observed in a study done by Enete (2008), contributions of men in Nigeria. The authors of both studies argue that it could be misleading to generalize women as main producers of food across Africa.

2.3.3 Farming Methods, farm inputs and Food Security

A farming system is defined as a population of individual farm systems that have similar resource bases, enterprise patterns, household livelihoods, constraints and for which similar development strategies and interventions would be appropriate. Farm system comprises not only resources such as fields, crops, animals, feeds and manure which are managed and transformed through human activity, but also it includes the farming family, housing facilities and food stores. The same authors recognize sub-systems within the farm system; the crop production system, the animal production system, and the household system (Dixon, Gulliver and Gibbon 2008). The type of farming system prevailing in a region depends on technical, institutional and human determinants which interact at each location and point in time to provide a unique environment for agricultural production. The above determinants will dictate the most suitable farming systems with a maximum productivity and any change in these determinants will have an effect on agricultural productivity (Deininger et al., 2011).

Despite a diversity of extensive farming systems in Sub Saharan Africa, the continent still faces a number of challenges namely declining soil fertility, inadequate use of improved germplasm, limited irrigation that severely limits the production potential, poor extension services to farmers and poor access to markets (Jama and Pizarro, 2008). A study done in Burundi revealed that the
prevalent farming system found in Burundi is the highland perennial farming system. This farming system is based not only on perennial crops such as banana, plantain and coffee complemented by cassava, sweet potatoes, beans and cereals but also cattle is kept for milk, manure, and social security (Dixon et al., 2008).

According to Wodon and Zaman (2008), food production systems changes in response to the high population density associated with acute scarcity of agricultural land and intensive work on land yet with very low returns. The same author gives a simplified typology of agricultural production systems based on soil fertility management practices, cropping and livestock systems, linked to the level of population density. Both food crop and livestock subsectors are affected by a number of key constraints contributing to limited growth. In the food crop subsector, there is limited use of improved farm management practices such as irrigation, limited use of purchased inputs, uncertain water supply, high input prices, and post harvest constraints. Population density is also noted as a major determining factor.

A study done by Degefa (2002) showed a mixed effect of improved technology utilization on availability of food in the household and food security status. The utilization of farm credits, improved seeds and herbicides and irrigation indeed had enhanced the volume of food available at the household level and improved food security status, however, per capita food availability has declined for the farmers who utilized commercial fertilizer and insecticides. He provided the reason for the undermined contribution of these inputs could be due to the contribution of drought and pest experienced in the particular study area. Giovanni (1985) concluded that Intermediate inputs such as seeds, fertilizer and pesticides were found to be the most significant parameter of the production function in addition to land elasticity, labor and capital.

2.3.4 Education Level and Food Security

Food insecurity and under-education are still common in many developing countries. The challenges are enormous, especially in rural areas where food insecurity, poverty and educational deprivation often create a vicious circle. Climbing out of this ‘poverty trap’ cannot be achieved by addressing one sector alone. It is therefore essential to explore feasible measures in which these interrelated issues can be tackled together, focusing on interventions which have
the greatest effect on poverty reduction. Basic education initiatives in rural areas which have used agricultural or environmental experience as a means of making teaching and learning more relevant and the potential impact of this kind of approach on food security and sustainable rural development were studied. This was done through a global literature review, looking at different policies, initiatives and analysis complemented with field work in Kenya, Zimbabwe and Mali. Potential implications for policy and suggested areas for increased investment are proposed in Department for Internal Development (DFID, 2005).

The acknowledgement of the link between women’s’ empowerment and improved household food security recognizes Kenyan women as the gatekeepers to national development and increased nutrition for its children. Improving women’s’ education is probably the most important policy instrument Kenya can use to increase agricultural productivity, reduce poverty, and promote better health. According to Quisumbing and Pandolfelli (2008), one year of primary education provided to all Kenyan women farmers would boost farm yields by 24%. The lack of education is believed to be the basic cause of poor agricultural development and food insecurity in developing countries.

Education contributes significantly to sustained rural income growth. Education increases the ability of farmers to allocate resources more efficiently and helps to develop the flexible skills needed to participate in knowledge-intensive agricultural activity. Education promotes constructive problem solving, abstract thinking, and the understanding of the causal relationship between technology inputs and agricultural outputs. The Ministry of Agriculture recognizes the importance of agricultural training for its youth through various Rural Youth Agricultural Programs. Youth, defined in Kenya as aged 14-30 comprise 62% of the total Kenyan population, more than half of which come from rural settings. Agriculture is an examinable subject in public school at the primary and secondary level. Kenyan youth, enjoying a relatively high level of literacy, are happy to adopt new ideas. Agricultural curriculum that combines basic content with local farming practices becomes relevant to learners of all ages. Parents are happy to adopt new ideas brought home by their children as opposed to strangers. As a result, schools become community learning centers for education and social activities for adults as well. The process of
learning becomes socially imbedded for all generations and encourages long-term changes in behavior that improve food security (Grenmer, 2010).

2.4 Conceptual Framework

According to Kombo and Tromp (2009), a concept is an abstract or general idea inferred or derived from specific instances. A conceptual framework is a set of broad ideas and principles taken from relevant fields of enquiry and used to structure a subsequent presentation. Mugenda and Mugenda (2003) and Reichel and Ramey (1987), define a conceptual framework as a hypothesized model identifying the model under study and the relationship between the dependent and independent variables. Kothari (2004) defines an independent variable also known as the explanatory variable as the presumed cause of the changes of the dependent variable, while a dependent variable refers to the variable which the researcher wishes to explain. The goal of a conceptual framework is to categorize and describe concepts relevant to the study and map relationships among them. Such a framework would help researchers define the concept, map the research terrain or conceptual scope, systematize relations among concepts, and identify gaps in literature (Creswell, 2003). The conceptual frame work is as shown below:
Figure 2.1: Conceptual Framework

Independent Variables | Intervening variables | Dependent Variable
---|---|---
Land ownership
- Disparity in ownership
- Accessibility/ownership rights
- Land size and productivity
Cultural practices
- Gender division of farm activities and Feminization of agriculture
- Gender categorization of crops
- Resource ownership, beliefs
Farming methods and Farm inputs
- Farm systems applied
- Farm inputs availability
Education level
- Constructive thinking and Understanding new technology
- Flexibility in use of new ideas

- Politics

Implementation of food security projects
- Attainment of goals
- Sustainability

(Source: Researcher, 2013)
2.5 Study Gaps

A study on food security by Fan et al. (2011) focused on programs to enhance food security by preventing recurring food crises however there is need to find out factors that contribute to the success of these initiatives. Another study by Fan and Lorch (2012) found that as a consequence of the recent food crises, tendencies toward an additional paradigm shift can be observed within the expert community that may be described as moving from a sector-specific approach to a system approach integrated across sectors and levels. Wodon and Zaman (2008) study in Burundi on food security shows enhancement of food security resulting from change of food production systems. All these studies were carried out in a different context and hence the need to validate some of their findings through this current study. Specifically, this study has established the stakeholder aspects influencing food security projects in Msambweni District.
CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction
The research methodology is the general pattern of organizing the procedure for collecting valid and reliable data for an investigation. It gives a detailed description of the research procedures that are followed during the investigation. This chapter outlines and describes the methods that were used for the study and adopted the following structure: research design, target population sample and sampling design, data collection methods, instrument validity, instrument reliability, data analysis and research ethics.

3.2 Research Design
The study adopted a descriptive survey design which according to Kothari (2004) and Onen and Oso (2009) is appropriate where the study seeks to describe the characteristics of certain groups, estimate the proportion of people who have certain characteristics and make predictions. The research design helped the researcher in the selection of subjects for observation, and in determination of the type of analysis to be used for interpretation of the data. This design is appropriate for this study since Borg, Gall & Gall (2003) noted that descriptive survey research is intended to produce statistical information about the aspects of a research issue. Descriptive survey research designs are used in preliminary and exploratory studies to allow researchers to gather information, summarize, present and interpret data for the purpose of clarification (Orodho, 2003). According to Mugenda and Mugenda (2003) the purpose of descriptive research is to determine and report the way things are and it helps in establishing the current status of the population under study. The design was chosen for this study due to its ability to ensure minimization of bias and maximization of reliability of evidence collected.

3.3 Target Population
According to Creswell (2003) and Ngechu (2004), a population is a well defined or set of people, services, elements, events, group of things or households that are being investigated. Msambweni District is found within Kwale County, which is one of six Counties in the Coastal region of Kenya. According to the 2009 population census, the district had a population of 496,133 people (Kenya National Bureau of Statistics, 2009). The target population was undefined due to lack of official data on how many of the residents of the Msambweni district are involved with
agricultural activities. The population targeted comprised the residents of Msambweni district who practice farming activities. The Accessible population was those farmers who could reliably and practically be included in a sample during the day of sampling.

3.4 Sample and Sampling Design
A sample is a part drawn from a larger whole taken in order to learn something about the whole (the population) from which it is drawn. According to Kothari (2004) sampling is the selection of a subset of individuals from within a population to yield some knowledge about the whole population, especially for the purposes of making predictions based on statistical inference. It’s a collection of units chosen from the universe to represent it. Its main advantages are cost, speed, accuracy and quality of the data (Ader, Mellenbergh and Hand, 2008). Lavrakas (2008) describe a sample in a survey research context as a subset of elements drawn from a larger population.

This study applied stratified random sampling. A population is divided into subgroups called strata and a sample is selected from each strata. After the population is divided into strata, either a proportional or a non proportional sample can be selected. Sampling of farmers was done at random from the existing divisions and locations of Msambweni district. The method provided ability to control sample size in the strata, increased statistical efficiency, provides data to represent, analyze different subgroups and use of different methods in the strata.

According to the 2009 population census, the district had a population of 496,133 people (KNBS, 2009) and hence it can be defined as a large population. In such a case, a final sample estimate is calculated using a formula recommended by Mugenda and Mugenda (2003) and Gay (1981) which is used to determine a sample from a large population. A large population is one which comprises of 10,000 elements and more (Mugenda & Mugenda, 2003). Using the formula below, a sample size is determined as follows:

\[ n = \frac{Z^2 \cdot p^* (1-p)}{d^2} \]

Where:  
- \( n \) = Sample size for large population  
- \( Z \) = Normal distribution Z value score, (1.96)  
- \( p \) = Proportion of units in the sample size possessing the variables under study, where for this study it is set at 50% (0.5)
d = Precision level desired or the significance level which is 0.05 for the study
The substituted values in determining the sample size for a large population are as follows.

\[
n = (1.96)^2 * (0.5)(0.5) = 384 \\
(0.05)^2
\]

The 384 potential respondents were selected using stratified random sampling method.

3.5 Data Collection Method
The study relied on data collected through a questionnaire structured to meet the objectives of the study. According to Mugenda and Mugenda (2003), questionnaires are commonly used to obtain important information about a population under study whereby each item is developed to address specific themes of the study. Questionnaires are less costly and not time consuming. The questionnaires were researcher administered to collect primary data from respondents. Each respondent selected was briefed on how to fill in the questionnaire; research assistants assisted the respondents to fill the questionnaires and also making follow up. The research assistants were conversant with the two national languages (English and Swahili) and the local dialects. The completed questionnaires were collected and then captured in a Microsoft excel worksheet for ease of exporting to statistical package for social sciences for further detailed analysis.

3.6 Instrument Validity
The research employed questionnaires as research instrument. Validity test was conducted to measure accuracy, clarity and suitability of the research instrument. Pre testing was conducted by use of a sample of five randomly selected agricultural extension officers within the district. Content validity was examined to ensure the instrument answers all the research questions. Based on the analysis of the pre-test results; corrections, adjustments and additions to the research instruments was made (Borg et al. 2003).

3.7 Instrument Reliability
Reliability is the dependability, consistency or trustworthiness of a test. Apart from validity test, the data collected must also be reliable. According to Creswell (2008), the goal of good study is to measure the data which is reliable. This study applied Cronbach alpha to test the reliability of the data collected. Using inter-item correlation matrix as a guide, items that did
not strongly contribute to alpha, those that were too similar and those whose content was not critical, were eliminated. According to Cooper & Schindler (2003), Cronbach’s alpha has the most utility for multi-item scales at the interval level of measurement. It requires only a single administration and provides a unique, quantitative estimate of the internal consistency of a scale. Twenty questionnaires were used to pilot the reliability of the questionnaire and a coefficient of 0.836 was achieved. Based on the recommendations of Creswell (2008) of a coefficient of 0.7, then the yielded coefficient of 0.836 was adequate for the study.

3.8 Data Analysis

The process of data analysis involved data clean up and explanation. Data was checked for errors and omissions followed by making corrections where possible. Coding of the data was done for ease of computer processing and finally it was captured in computer spread sheets in readiness for data transfer for analysis. Processing and analysis of the data was done using a computer package for Social Sciences version 20 programme (Kothari, 2004). Data description to develop sufficient knowledge to describe the data was done by descriptive statistics; this included measure of central tendencies (mean, median and mode) and measure of dispersion as standard deviation and variance. Inferential statistics as correlation and regression analysis will also be applied to derive meaningful findings and conclusions. Frequency tables and percentages were used to present the findings.

A multiple linear regression model was used to test the significance of the influence of the independent variables on the dependent variable. The multiple linear regression model is as laid below.

\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e \]

Where

i. \( Y \) = the value of the dependent variable

ii. \( \{ \beta_i; i=1,2,3,4\} \) = The coefficients representing the various independent variables.

iii. \( \{X_i; i=1,2,3,4\} \) = Values of the various independent (covariates) variables.

iv. \( e \) is the error term which is assumed to be normally distributed with mean zero and constant variance.

\( Y = \) Food security projects
$X_1 =$ land ownership

$X_2 =$ Culture practices

$X_3 =$ Farming methods and inputs

$X_4 =$ Education

### 3.9 Research Ethics

While this research contributed to the knowledge of domestic conflict, it maintained utmost confidentiality about the respondents. The researcher ensured that all respondents are given free will to participate and contribute voluntarily to the study. In addition, the researcher ensured that necessary research authorities are consulted and permission granted and due explanations given to the respondents before commencement of the study.
CHAPTER FOUR: FINDINGS, RESULTS AND DISCUSSION

4.1 Introduction

The chapter presents the empirical findings and results of the application of the variables using techniques mentioned in chapter three. Specifically, the data analysis was based on specific objectives where patterns were investigated, interpreted and implications drawn on them. The chapter starts with a preliminary analysis of the data before analyzing the study variables.

4.2 Response Rate

The initial target sample for the study was 384 respondents. Three hundred and eighty four questionnaires were circulated to randomly selected farmers. A research assistant was deployed to circulate and follow up on the questionnaires. Out of the 384 self administered questionnaire, 235 were duly completed and returned. This converts to a response rate of 61% as shown in Table 4.1. According to Mungena and Munega (2003) and also Kothari (2004) a response rate of 50% is adequate for a descriptive study. Babbie (2004) also asserted that return rate of 50% is acceptable to analyze and publish, 60% is good and 70% is very good. Based on these assertions from renowned scholars 61% response rate is adequate for the study.

Table 4.1: Response Rate

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Returned</td>
<td>235</td>
<td>61%</td>
</tr>
<tr>
<td>Unreturned</td>
<td>149</td>
<td>39%</td>
</tr>
<tr>
<td>Total</td>
<td>384</td>
<td>100%</td>
</tr>
</tbody>
</table>

4.3 Sample Characteristics

The preliminary information gathered regarding the characteristics of the respondents was about; gender, age and the years engaged in farming.

4.3.1 Gender of respondents

The respondents were asked to indicate their gender. Table 4.2 shows that majority (66.8%) of the respondents was female and 33.2% were male. The findings imply that the agricultural sector is a female dominated field.
Table 4.2: Gender of the Respondents

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>78</td>
<td>33.2</td>
</tr>
<tr>
<td>Female</td>
<td>157</td>
<td>66.8</td>
</tr>
<tr>
<td>Total</td>
<td>235</td>
<td>100</td>
</tr>
</tbody>
</table>

4.3.2 Age of the respondents

The respondents were asked to indicate their age brackets. Results in Table 4.3 revealed that 43\% of the respondents were aged between 36 to 45 years and 31\% were aged between 26 to 36 years. The findings imply that most of the respondents were at their energetic age hence they had the energies to divert into farming as their career.

Table 4.3: Age of the Respondents

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>26 to 35 years</td>
<td>73</td>
<td>31.1</td>
</tr>
<tr>
<td>36 - 45 years</td>
<td>101</td>
<td>43</td>
</tr>
<tr>
<td>46 to 55 years</td>
<td>46</td>
<td>19.6</td>
</tr>
<tr>
<td>Over 55 years</td>
<td>15</td>
<td>6.4</td>
</tr>
<tr>
<td>Total</td>
<td>235</td>
<td>100</td>
</tr>
</tbody>
</table>

4.3.3 Years Engaged in Farming

The respondents were asked to indicate the number of years they have been engaged with farming activities. Table 4.4 reveals that 53\% of the respondents had been in the farming activities for a period between 6 to 7 years, 42\% of the respondents had been in farming for a period of more than seven years. The findings imply that all the respondents had been in the field for a long period hence accurate response regarding the study.

Table 4.4: Years Engaged in Farming

<table>
<thead>
<tr>
<th>Years</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 to 5 years</td>
<td>13</td>
<td>5.5</td>
</tr>
<tr>
<td>6 to 7 years</td>
<td>124</td>
<td>52.8</td>
</tr>
<tr>
<td>More than 7 years</td>
<td>98</td>
<td>41.7</td>
</tr>
<tr>
<td>Total</td>
<td>235</td>
<td>100</td>
</tr>
</tbody>
</table>
4.4 Frequencies and Descriptive Analysis
This section is arranged based on the objectives of the study.

4.4.1 Food Security Projects
This section tested the views of the farmers regarding the food security projects in Msambweni district. Table 4.5 shows that 63% of the respondents disagreed that Msambweni has never had hunger problems, 76% agreed that they have never failed to feed themselves and the family, and 76% agreed that they have more than three types of crops in their farm which ensures food sufficiency for their family the whole year. Seventy five percent of the respondents agreed that they supplement farm produce with animal products like milk and eggs to ensure balanced diet for their families, 86% agreed that Msambweni has never received food aid and 80% agreed that they are aware of some government projects which are meant to improve food sufficiency in Msambweni. In addition, 83% agreed that food projects initiated by the Government are quite helpful, 78% agreed that food projects initiated by the Government are still continuing and 85% agreed that they normally work hard to ensure their families do not suffer food shortage any time of the year. Finally 83% of the respondents agreed that they cannot wait to rely on government food grants. The mean score for the responses was 3.82 which indicate that many respondents agreed to the statements regarding implementation of food security projects.
Table 4.5: Food Security Projects

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Likert mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Msambweni has never had hunger problems</td>
<td>17%</td>
<td>46%</td>
<td>15%</td>
<td>17%</td>
<td>5%</td>
<td>2.46</td>
</tr>
<tr>
<td>I have never failed to feed myself and the family</td>
<td>11%</td>
<td>8%</td>
<td>6%</td>
<td>36%</td>
<td>40%</td>
<td>3.86</td>
</tr>
<tr>
<td>I have more than three types of crops in my farm which ensures food sufficiency for my family the whole year</td>
<td>8%</td>
<td>8%</td>
<td>8%</td>
<td>59%</td>
<td>17%</td>
<td>3.69</td>
</tr>
<tr>
<td>I supplement farm produce with animal like milk and eggs to ensure balanced diet for my family</td>
<td>3%</td>
<td>7%</td>
<td>5%</td>
<td>52%</td>
<td>33%</td>
<td>4.04</td>
</tr>
<tr>
<td>Msambweni has never received food aid</td>
<td>3%</td>
<td>6%</td>
<td>5%</td>
<td>55%</td>
<td>31%</td>
<td>4.03</td>
</tr>
<tr>
<td>I am aware of some government projects which are meant to improve food sufficiency in Msambweni</td>
<td>7%</td>
<td>6%</td>
<td>8%</td>
<td>45%</td>
<td>35%</td>
<td>3.96</td>
</tr>
<tr>
<td>Food projects initiated by the Government is quite helpful</td>
<td>2%</td>
<td>7%</td>
<td>9%</td>
<td>41%</td>
<td>42%</td>
<td>4.14</td>
</tr>
<tr>
<td>Food projects initiated by the Government is still continuing</td>
<td>2%</td>
<td>10%</td>
<td>11%</td>
<td>44%</td>
<td>34%</td>
<td>3.97</td>
</tr>
<tr>
<td>I normally work hard to ensure my family does not suffer food shortage any time of the year</td>
<td>2%</td>
<td>7%</td>
<td>6%</td>
<td>58%</td>
<td>27%</td>
<td>4.02</td>
</tr>
<tr>
<td>I cannot wait to rely on government food grants</td>
<td>5%</td>
<td>6%</td>
<td>7%</td>
<td>48%</td>
<td>35%</td>
<td>4.03</td>
</tr>
</tbody>
</table>

Average likert mean 3.82

4.4.2 Land Ownership and Food Security Projects

The first objective of the study was to examine the extent to which land ownership influence food security projects in Msambweni district. Table 4.6 indicates that 81% of the respondents agreed that they own more than 2 acres of land, 71% agreed that everybody in their neighborhood owns at least 2 acres of land and 74% agreed that if everybody utilized his piece of land well he will be able to feed his family and remain with a surplus for sale. Sixty seven percent of the respondents agreed that people with land which has title deeds are able to utilize their land better because they can borrow money from the bank to develop the land, 65% agreed that the size of land does not matter but its productivity per acre is very important in attaining food sufficiency and 64% agreed that the government is committed to solve land ownership issues at Msambweni. The mean score of the responses for this section was 3.79 indicating that
more respondents agreed that land ownership was a key driver of food security project implementation.

The findings agree with those in USAID (2011) who asserted that land holding was found to be a determinant factor of household food security. Relatively land rich households nearly all reached 80% of their calorie requirement; this indicated that a household with larger land holding was found to be in better position of food security than those of land poor households. The findings also agree with those in Riddell (2007) who argued that the most common asset in rural areas is landholding and this was a good indicator of poverty when income was unobserved hence households with small farms were prone to food insecurity. In addition, the findings concur with those in Scoones et al. (2009) who asserted that land quality has been found to provide a good amount of yield in communal farms and in most communal areas, farms are of relatively poor quality and require the use of chemical fertilizer.

Table 4.6: Land Ownership

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Likert mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>I own more than 2 acres of land</td>
<td>6%</td>
<td>6%</td>
<td>8%</td>
<td>53%</td>
<td>28%</td>
<td>3.92</td>
</tr>
<tr>
<td>Everybody in my neighborhood owns at least 2 acres of land.</td>
<td>8%</td>
<td>15%</td>
<td>7%</td>
<td>43%</td>
<td>28%</td>
<td>3.68</td>
</tr>
<tr>
<td>If everybody utilized his piece of land well he will be able to feed his</td>
<td>4%</td>
<td>9%</td>
<td>12%</td>
<td>40%</td>
<td>34%</td>
<td>3.91</td>
</tr>
<tr>
<td>family and remain with a surplus for sale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People with land which has title deeds are able to utilize their land</td>
<td>3%</td>
<td>16%</td>
<td>14%</td>
<td>31%</td>
<td>36%</td>
<td>3.8</td>
</tr>
<tr>
<td>better because they can borrow money from the bank to develop the land</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The size of land does not matter but its productivity per acre is very</td>
<td>6%</td>
<td>20%</td>
<td>9%</td>
<td>35%</td>
<td>30%</td>
<td>3.63</td>
</tr>
<tr>
<td>important in attaining food sufficiency</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The government is committed to solve land ownership issues at Msambweni</td>
<td>9%</td>
<td>15%</td>
<td>13%</td>
<td>34%</td>
<td>30%</td>
<td>3.61</td>
</tr>
</tbody>
</table>

Average likert mean 3.76
4.4.3 Cultural Practices and Food Security Projects
The second objective of the study was to assess the extent to which cultural practices of the farmers influence food security projects in Msambweni district. Results on Table 4.7 indicates that 67% of the respondents agreed that their culture do not allow men to do some farming activities and similarly for women, 77% agreed that if both men and women were to work mutually, farm productivity of Msambweni would increase and 76% agreed that their religion do not allow the cultivation of some crops which could otherwise improve their food stocks. Sixty five percent of the respondents agreed that there are taboos in their community which discourage some types of farming methods and some food crops, 74% agreed that if people in Msambweni were to disregard cultural beliefs farm productivity and food sufficiency would change positively and 72% agreed that negative cultures can be a challenge to implementing new farming methods. The mean score of the responses for this section was 3.75 indicating that there was agreement with most of the statements on cultural practices as a factor influencing implementation of food security projects. These results reveal that farmers at Msambweni are not very comfortable with the farming activities being initiated.

The findings agree with those in UNFPA (2009) who asserted that women provide more labor in food production than men especially in Sub Saharan Africa. This is due to the fact that in many places in Africa food production and security is reported to be a woman responsibility. The study findings also concur with those in Hyder.et al (2005) who in a study done in Kenya and Tanzania showed that all household, whether men contributed or not to the farming, women were the ones who are primarily responsible for farming the food that sustained their families.

The findings further agree with those in World Bank (2011) which reported that women are reported to be more involved in food crops while men are involved in cash crops (whether food or non food crops). An explanation for this is that women are responsible for feeding the family, thus prefer to grow subsistence crops and men are responsible for providing cash income and thus prefer to grow cash or export crops. But more recent reports have shown that women are increasingly involved in cash crops despite their traditional role of feeding families.
**Table 4.7: Cultural Practices**

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Likert mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>My culture does not allow men to do some farming activities and similarly for women</td>
<td>10%</td>
<td>19%</td>
<td>5%</td>
<td>29%</td>
<td>38%</td>
<td>3.66</td>
</tr>
<tr>
<td>If both men and women were to work mutually, farm productivity of Msambweni would increase</td>
<td>6%</td>
<td>12%</td>
<td>5%</td>
<td>52%</td>
<td>25%</td>
<td>3.78</td>
</tr>
<tr>
<td>My religion does not allow the cultivation of some crops which could otherwise improve our food stocks</td>
<td>4%</td>
<td>13%</td>
<td>7%</td>
<td>53%</td>
<td>23%</td>
<td>3.79</td>
</tr>
<tr>
<td>There are taboos in my community which discourage some types of farming methods and some food crops</td>
<td>6%</td>
<td>17%</td>
<td>12%</td>
<td>38%</td>
<td>27%</td>
<td>3.64</td>
</tr>
<tr>
<td>If people in Msambweni were to disregard cultural beliefs farm productivity and food sufficiency would change positively</td>
<td>2%</td>
<td>12%</td>
<td>12%</td>
<td>46%</td>
<td>28%</td>
<td>3.87</td>
</tr>
<tr>
<td>Negative cultures can be a challenge to implementing new farming methods</td>
<td>9%</td>
<td>9%</td>
<td>11%</td>
<td>41%</td>
<td>31%</td>
<td>3.77</td>
</tr>
<tr>
<td>Average likert mean</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.75</td>
</tr>
</tbody>
</table>

**4.4.4 Farming Methods and Input and Food Security Projects**

The third objective of the study was to examine the extent to which farming methods and inputs practiced by the farmers in Msambweni district influence the food security projects of the area. Table 4.8 shows that 71% of the respondents agreed that they believe mechanized farming and irrigation have the potential of producing more farm output in land, 91% agreed that use of modern pesticides and fertilizers improves farm productivity as compared to traditional methods and 76% agreed that if government was to provide grants for basic farm mechanization farmers would become self sufficient. Sixty one percent of the respondents agreed that multiple farming methods within the same acreage can boost farm productivity, 62% agreed that zero grazing has better animal yields than use of ranching and 62% agreed that farm inputs are still expensive. Finally, 76% of the respondents agreed that all taxes on farm inputs should be eliminated if the government wants to make farming more meaning full and 82% agreed that the government should invest in more research on the most appropriate farming methods for Msambweni. The
mean score for the responses for this section was 3.78 which indicate that many respondents agreed that farming methods and inputs was a key driver of food security projects implementation. The results revealed that farming methods and inputs influenced food security projects implementation.

The findings agree with those in a study done by Degefa (2002) which showed a mixed effect of improved technology utilization on availability of food in the household and food security status. The utilization of farm credits, improved seeds and herbicides and irrigation indeed had enhanced the volume of food available at the household level and improved food security status, however, per capita food availability has declined for the farmers who utilized commercial fertilizer and insecticides. He provided the reason for the undermined contribution of these inputs could be due to the contribution of drought and pest experienced in the particular study area.

The findings also agree with those in Giovanni (1985) who concluded that Intermediate inputs such as seeds, fertilizer and pesticides were found to be the most significant parameter of the production function in addition to land elasticity, labor and capital. The findings further concur with those in Jama and Pizarro (2008) who asserted that despite a diversity of extensive farming systems in Sub Saharan Africa, the continent still faces a number of challenges namely declining soil fertility, inadequate use of improved germplasm, limited irrigation that severely limits the production potential, poor extension services to farmers and poor access to markets.

The findings concur with those in Dixon et al. (2008) who did a study in Burundi and revealed that the prevalent farming system found in Burundi is the highland perennial farming system. This farming system is based not only on perennial crops such as banana, plantain and coffee complemented by cassava, sweet potatoes, beans and cereals but also cattle is kept for milk, manure, and social security.
### Table 4.8: Farming Methods and Input

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Likert mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>I believe mechanized farming and irrigation has the potential of producing more farm output in land</td>
<td>1%</td>
<td>15%</td>
<td>14%</td>
<td>45%</td>
<td>26%</td>
<td>3.81</td>
</tr>
<tr>
<td>Use of modern pesticides and fertilizers improves farm productivity as compared to traditional methods</td>
<td>2%</td>
<td>3%</td>
<td>4%</td>
<td>50%</td>
<td>41%</td>
<td>4.25</td>
</tr>
<tr>
<td>If government was to provide grants for basic farm mechanization farmers would become self-sufficient</td>
<td>1%</td>
<td>15%</td>
<td>9%</td>
<td>52%</td>
<td>24%</td>
<td>3.83</td>
</tr>
<tr>
<td>Multiple farming methods within the same acreage can boost farm productivity</td>
<td>8%</td>
<td>20%</td>
<td>12%</td>
<td>37%</td>
<td>24%</td>
<td>3.5</td>
</tr>
<tr>
<td>Zero grazing has better animal yields than use of ranching</td>
<td>4%</td>
<td>22%</td>
<td>12%</td>
<td>28%</td>
<td>34%</td>
<td>3.64</td>
</tr>
<tr>
<td>Farm inputs are still expensive</td>
<td>12%</td>
<td>15%</td>
<td>11%</td>
<td>35%</td>
<td>27%</td>
<td>3.49</td>
</tr>
<tr>
<td>All taxes on farm inputs should be eliminated if the government wants to make farming more meaningful</td>
<td>6%</td>
<td>9%</td>
<td>9%</td>
<td>47%</td>
<td>29%</td>
<td>3.84</td>
</tr>
<tr>
<td>The government should invest in more research on the most appropriate farming methods for Msambweni</td>
<td>3%</td>
<td>11%</td>
<td>4%</td>
<td>62%</td>
<td>20%</td>
<td>3.84</td>
</tr>
</tbody>
</table>

#### Average likert mean

3.78

### 4.4.5 Education Level and Food Security Projects

The fourth and last objective of this study was to analyze the extent to which education level among the farmers influence food security projects in Msambweni district. Results on Table 4.9 reveal that 79% agreed that farms of more educated people yield better output than those of non-educated people, 92% agreed that those farmers who attend farming seminars and workshops are more successful in their farming than those who do not and 89% agreed that education encourages farmers to mechanize their farms. Sixty six percent of the respondents agreed that Agricultural extension officers are key in educating farmers on how to improve their farm productivity, 74% agreed that education is not a determinant of farm output as long as the farmer follows good farming practices and 90% agreed that the government should look for ways of
communicating modern methods of farming using locally understood languages. Finally, 7% agreed that those who studied agriculture in either primary or secondary school are better farmers. The mean score for the responses was 3.76 indicating that many respondents agreed that education level influences food security projects implementation.

The findings agree with those in Quisumbing and Pandolfelli (2008) who argued that the acknowledgement of the link between women’s’ empowerment and improved household food security recognizes Kenyan women as the gatekeepers to national development and increased nutrition for its children. Improving women’s’ education is probably the most important policy instrument Kenya can use to increase agricultural productivity, reduce poverty, and promote better health. According to Quisumbing and Pandolfelli (2008), one year of primary education provided to all Kenyan women farmers would boost farm yields by 24%. The lack of education is believed to be the basic cause of poor agricultural development and food insecurity in developing countries.

The findings also agree with those in Grenmer (2010) who asserted that education increases the ability of farmers to allocate resources more efficiently and helps to develop the flexible skills needed to participate in knowledge-intensive agricultural activity. Education promotes constructive problem solving, abstract thinking, and the understanding of the causal relationship between technology inputs and agricultural outputs. The Ministry of Agriculture recognizes the importance of agricultural training of youth through various Rural Youth Agricultural Programs.
Table 4.9: Education Level

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Likert mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farms of more educated people yield better output than those of non educated people</td>
<td>6%</td>
<td>13%</td>
<td>3%</td>
<td>54%</td>
<td>25%</td>
<td>3.79</td>
</tr>
<tr>
<td>Those farmers who attend farming seminars and workshops are more successful in their farming than those who don’t</td>
<td>1%</td>
<td>3%</td>
<td>4%</td>
<td>71%</td>
<td>21%</td>
<td>4.08</td>
</tr>
<tr>
<td>Education encourages farmers to mechanize their farms</td>
<td>2%</td>
<td>4%</td>
<td>6%</td>
<td>72%</td>
<td>17%</td>
<td>3.99</td>
</tr>
<tr>
<td>Agricultural extension officers are key in educating farmers on how to improve their farm productivity</td>
<td>8%</td>
<td>15%</td>
<td>11%</td>
<td>49%</td>
<td>17%</td>
<td>3.53</td>
</tr>
<tr>
<td>Education is not a determinant of farm output as long as the farmer follows good farming practices</td>
<td>5%</td>
<td>17%</td>
<td>4%</td>
<td>66%</td>
<td>8%</td>
<td>3.55</td>
</tr>
<tr>
<td>The government should look for ways of communication modern methods of farming using locally understood languages</td>
<td>3%</td>
<td>4%</td>
<td>3%</td>
<td>79%</td>
<td>11%</td>
<td>3.9</td>
</tr>
<tr>
<td>Those who studied agriculture in either primary or secondary school are better farmers</td>
<td>10%</td>
<td>13%</td>
<td>7%</td>
<td>62%</td>
<td>8%</td>
<td>3.46</td>
</tr>
</tbody>
</table>

Average likert mean 3.76

4.5 Inferential Statistical Analysis

This section presents the correlation and regression analysis.

4.5.1 Bivariate Correlation

Table 4.10 displays the results of correlation test analysis between the dependent variable (food security projects implementation) and independent variables and also correlation among the independent variables themselves. Results on Table 4.9 show that food security projects implementation is positively correlated with all the independent variables. This reveals that any
positive change in land ownership, cultural practices, farming methods and education level led to increased implementation of food security projects.

Table 4.10: Bivariate Correlation

<table>
<thead>
<tr>
<th>Variable</th>
<th>Food security</th>
<th>Land ownership</th>
<th>Cultural practices</th>
<th>Farming methods</th>
<th>Education level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food security projects</td>
<td>Pearson Correlation</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land ownership</td>
<td>Pearson Correlation</td>
<td>0.776</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cultural practices</td>
<td>Pearson Correlation</td>
<td>0.622</td>
<td>0.857</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.000</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farming methods</td>
<td>Pearson Correlation</td>
<td>0.578</td>
<td>0.699</td>
<td>0.675</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Education level</td>
<td>Pearson Correlation</td>
<td>0.384</td>
<td>0.583</td>
<td>0.619</td>
<td>0.739</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

4.5.2 Regression Analysis

In order to establish the statistical significance of the independent variables on the dependent variable (food security projects) regression analysis was employed. The regression equation took the following form.

\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \mu \]

Where

- \( Y \) = Food Security Projects
- \( X_1 \) = Land ownership
- \( X_2 \) = Cultural practices
- \( X_3 \) = Farming methods and inputs
- \( X_4 \) = Education level
In the model, $\beta_0 = \text{the constant term}$ while the coefficient $\beta_i = 1 \ldots 4$ was used to measure the sensitivity of the dependent variables ($Y$) to unit change in the predictor variables. $\mu$ is the error term which captures the unexplained variations in the model. Table 4.11 shows that the coefficient of determination also called the R square is 62.9%. This means that the combined effect of the predictor variables (land ownership, cultural practices, farming methods and education level) explains 62.9% of the variations in implementation of food security projects. The correlation coefficient of 79.3% indicates that the combined effect of the predictor variables has a strong and positive correlation with food security projects implementation. This also meant that a change in the drivers of food security projects has a strong and a positive effect on food security projects implementation.

### Table 4.11: Regression Model Fitness

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>$R$</td>
<td>0.793</td>
</tr>
<tr>
<td>$R$ Square</td>
<td>0.629</td>
</tr>
<tr>
<td>Std. Error of the Estimate</td>
<td>0.40275</td>
</tr>
</tbody>
</table>

Analysis of variance (ANOVA) on Table 4.12 shows that the combined effect of land ownership, cultural practices, farming methods and education level was statistically significant in explaining changes in food security projects implementation. This is demonstrated by a $p$ value of 0.000 which is less that the acceptance critical value of 0.05.

### Table 4.12: ANOVA

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>$F$</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>63.256</td>
<td>4</td>
<td>15.814</td>
<td>97.492</td>
<td>0.000</td>
</tr>
<tr>
<td>Residual</td>
<td>37.308</td>
<td>230</td>
<td>0.162</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>100.564</td>
<td>234</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.13 displays the regression coefficients of the independent variables. The results reveal that land ownership, farming methods and education level are statistically significant in
explaining implementation of food security projects. However cultural practices were not statistically significant in influencing implementation of food security projects.

Table 4.13: Regression Coefficients

<table>
<thead>
<tr>
<th>Variable</th>
<th>Beta</th>
<th>Std. Error</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1.755</td>
<td>0.186</td>
<td>9.414</td>
<td>0.000</td>
</tr>
<tr>
<td>Land ownership</td>
<td>0.691</td>
<td>0.066</td>
<td>10.418</td>
<td>0.000</td>
</tr>
<tr>
<td>Cultural practices</td>
<td>-0.143</td>
<td>0.083</td>
<td>-1.718</td>
<td>0.087</td>
</tr>
<tr>
<td>Farming methods</td>
<td>0.208</td>
<td>0.067</td>
<td>3.095</td>
<td>0.002</td>
</tr>
<tr>
<td>Education level</td>
<td>-0.207</td>
<td>0.069</td>
<td>-3.017</td>
<td>0.003</td>
</tr>
</tbody>
</table>

4.6 Summary of Key Results

The summary of the results are shown in Table 4.14 which indicate that land ownership, farming methods and education level are key determinants of food security project implementation. However in general the farmers agreed that all the variables of this study were important in influencing food project security implementation.

Table 4.14: Summary of Key Coefficients

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean Score</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land ownership</td>
<td>3.76</td>
<td>0.000</td>
</tr>
<tr>
<td>Cultural practices</td>
<td>3.75</td>
<td>0.087</td>
</tr>
<tr>
<td>Farming methods</td>
<td>3.78</td>
<td>0.002</td>
</tr>
<tr>
<td>Education level</td>
<td>3.76</td>
<td>0.003</td>
</tr>
</tbody>
</table>
CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction
This chapter finalizes the study by proving the summary of key findings, conclusions and recommendations. The summary, conclusions and recommendations are aligned to the specific objectives of the study.

5.2 Summary of Key Findings
One of the key findings was that farmers from Msambweni valued the food security projects. This was demonstrated by the extent of agreement with the statements in the questionnaire in support of the food security projects implementation.

5.2.1 Land Ownership and Food Security Projects
The first objective of the study was to examine the extent to which land ownership influence food security projects implementation in Msambweni district. Results indicated that land ownership was a key determinant in influencing food projects implementation. The findings indicated that land ownership made the implementation of food security projects easier and faster. This was evidenced by the responses from the respondents who indicated that they own more than 2 acres of land, everybody in their neighborhood owns at least 2 acres of land and if everybody utilized his piece of land well he will be able to feed his family and remain with a surplus for sale. The findings were also supported by the regression coefficients and correlation results. There was a positive and significant relationship between food security project implementation and land ownership.

5.2.2 Cultural Practices and Food Security Projects
The second objective of the study was to assess the extent to which cultural practices of the farmers influence food security projects implementation in Msambweni district. Results indicated that it hinders food security projects implementation and this implies that it made implementation take a longer period. This was supported by the majority of the respondents agreeing that their culture do not allow men to do some farming activities and similarly for women and that their religion do not allow the cultivation of some crops which could otherwise
improve their food stocks. The findings also indicated that there are taboos in their community which discourage some types of farming methods and some food crops and if people in Msambweni were to disregard cultural beliefs farm productivity and food sufficiency would change positively. However the negative correlation of the relationship between food projects and cultural practices shows the factor is not statistically significant.

5.2.3 Farming Methods and Inputs and Food Security Projects
The third objective of the study was to examine the extent to which farming methods and inputs practiced by the farmers in Msambweni district influence implementation of food security projects in the area. Results indicated that farming methods and inputs were key determinants of food security project implementation. The findings indicated that farming methods influenced the implementation of food projects at Msambweni district. This was demonstrated by the mean score of responses and also the regression coefficient. The results indicated that majority of the respondents agreed that use of modern pesticides and fertilizers improves farm productivity as compared to traditional methods, they believe mechanized farming and irrigation have the potential of producing more farm output in land and if government was to provide grants for basic farm mechanization farmers would become self sufficient. The correlation between farming methods and food security project implementation was found to be strong and positive. This implies that farming methods and input were statistically significant in explaining food security project implementation.

5.2.4 Education Level and Food Security Projects
The fourth and last objective of this study was to analyze the extent to which education level among the farmers influence food security projects in Msambweni district. Results indicated that education was a key factor. However the findings also indicated that education level of the respondents did not matter so much as long as they apply the correct farming methods and attend farming seminars and workshops. This was supported by majority of the respondents who asserted that those farmers who attend farming seminars and workshops are more successful in their farming. Agricultural extension officers are vital in educating farmers on how to improve their farm productivity and education is not a determinant of farm output as long as the farmer
follows good farming practices. There results also showed that there was a positive and significant relationship between education level and food security project implementation.

5.3 Conclusions
Based on the objectives and the findings of the study the following conclusions can be made:

Land ownership is a key driver to food security implementation in Msambweni district. This kind of finding is consistent as it has been supported by other scholars and hence highlighting the intensity of land ownership in securing food problems. It can also be concluded that Cultural practices is a determinant factor in implementation of food security but are not statistically significant in explaining food security projects implementation despite the taboos and beliefs in farming activities. Farming methods and inputs were statistically significant in explaining food security projects implementation, the respondents overwhelmingly agreed with its positive effect on projects implementation. It can therefore be concluded that the farmers were happy about the government initiative of distributing seeds, fertilizers and have farmers given grants for basic farm mechanization which would make farmers become self sufficient. Education was found to be effective in driving food security projects implementation. However education level is not a determinant of farm output as long as the farmers exercise good farming practices and attends farming seminars and workshops to enhance their farming techniques and hence improve productivity.

5.4 Recommendations
Based on the results, findings and conclusions the following recommendations have been deciphered: It was found that land ownership affects implementation of food security projects. It is recommended to the farmers to ensure that they retain their own lands and avoid selling and put the land into good use by practicing farming. It is recommended that the farmers embrace the government initiated projects being implemented in the area as this will help improve food production in the area and avoid food drought and fight poverty. This effort can lead to successful implementation of the projects and subsequently lead to better productivity and by extension that of the overall farms. Cultural practices were found to be a determinant factor in implementation of food security projects. It is recommended that farmers reviews the existing taboos and beliefs and disregard them as this can lead to improved food security. Farmers should
have an open mind in fighting hunger as this will ensure that all people work to the betterment of improving food security issues regardless of the religion and culture. Farming methods and inputs was found to be a key driver in food security projects implementation. It is recommended that farmers evaluate the advantages of mechanized farming methods and traditional farming practices and embrace the better option. Farmers should also attend the farmer’s workshops and seminars organized by the government to exchange ideas and learn also new tactics of farming activities. The study also recommends that the farmers organize themselves in groups and invite the agricultural officers so that they can be trained on various farming methods and on how to improve their productivity. Further recommendation is that the government should look for ways of communicating modern methods of farming using locally understood languages to ensure that the whole country embraces changes at the same pace.

5.5 **Areas for Further Study**

Arising from the findings and the gaps in the study, a replica study is recommended in other districts in order to test whether the conclusions of this study will hold true. Another study could be carried out to include other factors that influence implementation of food security projects like demographic characteristics and socio-economic factors. Future studies should apply different research instruments like focus group discussions to involve respondents in discussions in order to generate detailed information which would help improve projects implementation process.
REFERENCES


Degefa T. (2002). Household seasonal food insecurity in Oromya zone, Ethiopia: causes; Social Science Research report series No. 26, Ethiopia


FEWS (June 7, 2011) East Africa Food Security Alert


Giovanni Andrea Cornia (1985); Farm size, Land yields and the Agricultural Production Function: An Analysis for Fifteen Developing Countries. World Development Vol.13, No.4, pp513 – 534


KIPPPRA (Dec 2007) Kenya Agricultural Sector Data Compendium.


Quisumbing A, & Pandolfelli L. Promising approaches to address the needs for Poor Female farmers, IFPRI Discussion Paper 00882. Washington DC: International Food Policy and Research Institute; 2008


Saito, K., Mekonnen, H. & Spurling, D. (2009). Raising the productivity of women farmers


APPENDICES

Appendix I: Letter of Introduction

Patrick Orengo Omari
Kenyatta University – Mombasa Campus
PO BOX 43844,
Nairobi

Monday, July 29, 2013

Deputy County Commissioner
Msambweni District -Kwale County

Dear Sir,

RE: DATA COLLECTION FOR ACADEMIC RESEARCH

I am a Masters of Business Administration student at Kenyatta University. I wish to conduct a research entitled “Factors influencing implementation of food security projects in Msambweni District”. A questionnaire will be used to gather relevant information to address the research objectives of the study. The purpose of writing to you is to kindly request you to grant me permission to collect information from randomly sampled resident farmers in Msambweni District. Please note that the study will be conducted as an academic research and the information provided will be treated with strict confidence. Strict ethical principles will be observed to ensure confidentiality and the study outcomes and reports will not include reference to any individuals. Your acceptance will be highly appreciated.

Yours Sincerely,

Patrick Orengo Omari
Student – Kenyatta University
Appendix II: Questionnaire

This questionnaire is meant to gather information regarding “Stakeholder Aspects influencing implementation of food security projects in Msambweni District”.

CONFIDENTIALITY Clause:
The responses you provide will be used for academic research purposes and will be strictly confidential.

Kindly note that if you have challenges reading or communicating in English, you will be assisted to interpret the questionnaire in a language you are comfortable with.

BASIC INFORMATION

1) Kindly indicate your gender
   Male [ ] Female [ ]

2) Kindly indicate your age bracket
   18 to 25 years [ ] 26 to 35 years [ ]
   36 - 45 years [ ] 46 to 55 years [ ]
   Over 55 years [ ]

3) For how many years have you been engaged with farming activities
   Less than 1 Year [ ] 1 -2 Years [ ]
   3 to 5 years [ ] 6 to 7 years [ ]
   More than 7 years [ ]
**FOOD SECURITY PROJECTS**

The following are statements relating to food security projects. Kindly tick the statement as appropriate on your opinion on each statement.

<table>
<thead>
<tr>
<th>No</th>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Msambweni has never had hunger problems</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I have never failed to feed myself and the family</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>I have more than three types of crops in my farm which ensures food sufficiency for my family the whole year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>I supplement farm produce with animal like milk and eggs to ensure balanced diet for my family</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Msambweni has never received food aid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>I am aware of some government projects which are meant to improve food sufficiency in Msambweni</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Food projects initiated by the Government is quite helpful</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Food projects initiated by the Government is still continuing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>I normally work hard to ensure my family does not suffer food shortage any time of the year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>I cannot wait to rely on government food grants</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**LAND OWNERSHIP**

Below are statements on the influence of land ownership on food security projects. Kindly tick the statement as appropriate on your opinion on each statement.

<table>
<thead>
<tr>
<th>No</th>
<th>Statements</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I own more than 2 acres of land</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Everybody in my neighborhood owns at least 2 acres of land.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>If everybody utilized his piece of land well he will be able to feed his family and remain with a surplus for sale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>People with land which has title deeds are able to utilize their land better because they can borrow money from the bank to develop the land</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>The size of land does not matter but its productivity per acre is very important in attaining food sufficiency</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>The government is committed to solve land ownership issues at Msambweni</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**CULTURAL PRACTICES**

The following statements are related to the effect of cultural practices on food security projects.

Kindly tick as appropriate on your opinion on each statement

<table>
<thead>
<tr>
<th>No</th>
<th>Statements</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>My culture does not allow men to do some farming activities and similarly for women</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>If both men and women were to work mutually, farm productivity of Msambweni would increase</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>My religion does not allow the cultivation of some crops which could otherwise improve our food stocks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>There are taboos in my community which discourage some types of farming methods and some food crops</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>If people in Msambweni were to disregard cultural beliefs farm productivity and food sufficiency would change positively</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Negative cultures can be a challenge to implementing new farming methods</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# FARMING METHODS AND INPUTS

The following statements are related to the relationship between farming methods and inputs and food security projects. Kindly tick as appropriate on your opinion on each statement.

<table>
<thead>
<tr>
<th>No</th>
<th>Statements</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I believe mechanized farming and irrigation has the potential of producing more farm output in land</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Use of modern pesticides and fertilizers improves farm productivity as compared to traditional methods</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>If government was to provide grants for basic farm mechanization farmers would become self sufficient</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Multiple farming methods within the same acreage can boost farm productivity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Zero grazing has better animal yields than use of ranching</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Farm inputs are still expensive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>All taxes on farm inputs should be eliminated if the government wants to make farming more meaningful</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>The government should invest in more research on the most appropriate farming methods for Msambweni</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**EDUCATIONAL LEVEL**

The following statements are related to the relationship between educational level and food security projects. Kindly tick as appropriate on your opinion on each statement.

<table>
<thead>
<tr>
<th>No</th>
<th>Statements</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Farms of more educated people yield better output than those of non-educated people</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Those farmers who attend farming seminars and workshops are more successful in their farming than those who don’t</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Education encourages farmers to mechanize their farms</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Agricultural extension officers are key in educating farmers on how to improve their farm productivity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Education is not a determinant of farm output as long as the farmer follows good farming practices</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>The government should look for ways of communication modern methods of farming using locally understood languages</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Those who studied agriculture in either primary or secondary school are better farmers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Thank you for your participation.