INFLUENCE OF GOVERNMENT'S FARM SUBSIDIES RELATED FACTORS ON FOOD SECURITY IN EAST KARACHUONYO DIVISION, HOMABAY COUNTY, KENYA.

BY

ONYANGO DEURENCE ADHIAMBO

A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF ARTS IN PROJECT PLANNING AND MANAGEMENT OF THE UNIVERSITY OF NAIROBI

2014

DECLARATION

This research project is my original work and has never been presented for the award of any degree in any other university.

Signature: _____

Date: _____

ONYANGO DEURENCE ADHIAMBO L50/84292/2012

This research project has been submitted for examination with our approval as the university supervisors.

Signature_____

Date: _____

DR. OURU JOHN NYAEGAH

LECTURER: DEPARTMENT OF EXTRA MURAL STUDIES

UNIVERSITY OF NAIROBI

Signature_____

Date: _____

PROF. MARIA ONYANGO

LECTURER: GENDER INSTITUTE

JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY

DEDICATION

This research project is dedicated to my cherished children Joy and Jayden.

ACKNOWLEDGEMENT

In compiling this report, I relied on the support of many people who made available their expertise and experience. First, I wish to acknowledge my supervisors Dr. John Ouru Nyaegah and Prof. Maria Onyango for their invaluable contributions at different stages of this report development. Their respected opinions made me achieve this caliber of work. I also acknowledge the University of Nairobi for according me a chance to study in a conducive environment at their Kisumu Campus.

My deepest appreciation goes to my lecturers at the Department of Extra Mural Studies, Kisumu Campus. I extend my special gratitude to Dr. Paul Odundo for the expansive coverage of Research Methods, a course unit that is the backbone of this study. I also wish to thank Dr. Charles Rambo for his incisive motivation and Dr. Raphael. Nyonje for always opening his doors for consultation. I also thank my colleagues for the quality time we shared, the useful discussions and encouragement.

I wish to thank my employer, Ministry of Devolution and Planning for granting me the permission to study while working. I wish to sincerely thank Ms. Fresia Kamau for giving me the course approval, a mandatory requirement to undertake studies while employed by the Kenyan Government.

I am highly indebted to my family for their important moral and spiritual support. Words cannot express how grateful I am to my parents for all the sacrifices that they have made on my behalf. Their prayers for me were what sustained me this far. Special thanks go to my daughter Joy for enduring long periods of my absence from home as I undertook my studies. I also wish to acknowledge my friend Mr. Patrick Mbullo whose constant moral support and motivation incented me to strive towards my goal and achieve this academic height.

Above all I wish to thank God for the gift of good health, wisdom and knowledge. Amen.

TABLE OF CONTENTS

| DECLARATION | ii |
|---|-----|
| DEDICATION | iii |
| ACKNOWLEDGEMENT | iv |
| TABLE OF CONTENTS | V |
| LIST OF TABLES | ix |
| LIST OF FIGURES | x |
| LIST OF ABBREVIATIONS AND ACRONYMS | xi |
| ABSTRACT | xii |
| CHAPTER ONE | 1 |
| INTRODUCTION | 1 |
| 1.1 Background of the study | 1 |
| 1.2 Statement of the problem | 4 |
| 1.3 Purpose of the study | 6 |
| 1.4 Objectives of the study | 6 |
| 1.5 Research Questions | 6 |
| 1.6 Significance of the study | 7 |
| 1.7 Limitations of the study | 7 |
| 1.8 Delimitations of the study | |
| 1.9 Basic Assumptions of the Study | |
| 1.10 Definition of significant terms as used in the study | 9 |
| 1.11 Organization of the study | |
| CHAPTER TWO | 11 |
| LITERATURE REVIEW | 11 |
| 2.1 Introduction | 11 |
| 2.2 Overview of the Concept of Government's Agricultural subsidies on Food Security | 11 |

| 2.3 Access to Information and Food Security | |
|--|----|
| 2.4 Training of Farmers and Food Security. | |
| 2.5 Provision of Farm Inputs and Food Security | 16 |
| 2.6 Time of Distribution and Food Security | 16 |
| 2.7 Empirical Literature | |
| 2.8 Theoretical Framework | |
| 2.9 Conceptual framework | |
| 2.10 Summary of Literature Reviewed | |
| CHAPTER THREE | 26 |
| RESEARCH METHODOLOGY | 26 |
| 3.1 Introduction | |
| 3.2 Research Design | |
| 3.3 Target Population | |
| 3.4 Sample Size and Sampling Procedures | |
| 3.4.1 Sample Size | |
| 3.4.2 Sampling Procedures | 27 |
| 3.5 Research Instruments | |
| 3.5.1 Pilot Study | |
| 3.5.2 Validity of the Instruments | 30 |
| 3.5.3 Reliability of instruments | 30 |
| 3.6 Data Collection Procedure | |
| 3.7 Data Analysis Techniques | |
| 3.8 Ethical Consideration | 32 |
| CHAPTER FOUR | |
| DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION | 33 |
| 4.1 Introduction | 33 |
| 4.2 Response Rate | 33 |
| 4.3 Demographic characteristics of respondents | |
| 4.3.1 Characteristics of respondents by Gender | |
| 4.3.2 Characteristics of respondents by Age | |

| 4.3.3 Characteristics of respondents by Education Level | |
|---|----|
| 4.3.4 Characteristics of respondents by Marital Status | |
| 4.4 Access to information on the subsidy programme | |
| 4.4.1 Methods of information access to the government subsidy programme | 39 |
| 4.4.2 Accessibility to information on government's farm subsidy programme | 40 |
| 4.4.3 Feedback mechanism to the in charge agency | |
| 4.5 Influence of training of farmers on the use of subsidies | |
| 4.5.1 Type of training given to beneficiary farmers | |
| 4.5.2 Frequency of training of farmers | 45 |
| 4.6 Provision of farm inputs | |
| 4.6.1 Receipt of inputs by farmers | |
| 4. 6.2 Quality and Quantity of inputs to beneficiary farmers | |
| 4.7 Time of distribution of subsidies | |
| 4.7.1 Timely distribution of farm subsidies | 49 |
| CHAPTER FIVE | 51 |
| SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS | 51 |
| 5.1 Introduction | |
| 5.2 Summary of study findings | 51 |
| 5.3 Conclusions | |
| 5.4 Recommendations | 53 |
| 5.4.1 Recommendations for policy action | 53 |
| 5.4.2 Recommendations for further research | 55 |
| 5.5 Contribution to body of knowledge | |
| REFERENCES | |
| APPENDICES | |
| Appendix I: Letter of Transmittal | 62 |
| Appendix II: Questionnaire for Farmers | 63 |
| Appendix III: Interview Schedule | 69 |

| Appendix IV: Krejcie and Morgan Table for Determining Sample Size from a Given Population | 71 |
|---|----|
| Appendix V: Approval Letter | 72 |
| Appendix VI: Research Clearance Permit | 73 |

LIST OF TABLES

| Table 3.1 Total and sample sizes of the population for study |
|---|
| Table 4.1 Response Rate |
| Table 4.2 Characteristics of Respondents by Gender |
| Table 4.3 Characteristics of Respondents by Age |
| Table 4.4 Characteristics of Respondents by Education Level |
| Table 4.5 Characteristics of Respondents by Marital Status |
| Table 4.6 Methods of access to information on the subsidy programme |
| Table 4.7 Accessibility to information on government's farm subsidy programme40 |
| Table 4.8 Frequency of feedback on the programme41 |
| Table 4.9 Training of farmers on subsidized inputs' use |
| Table 4.10 Type of training given to beneficiary farmers44 |
| Table 4.11 Frequency of training offered to beneficiary farmers 45 |
| Table 4.12 Type of farm input received as a subsidy from the government |
| Table 4.13 Regularity of receipt of subsidized inputs by farmers 47 |
| Table 4.14 Required Quality and Quantity of inputs 48 |
| Table 4.15 On-time distribution of inputs |
| Table 5.1 Recommendations for policy action |
| Table 5.2 Contribution to the body of knowledge |

LIST OF FIGURES

| Figure | 1: Conceptual | framework. | | 22 | |
|--------|---------------|------------|--|----|--|
|--------|---------------|------------|--|----|--|

LIST OF ABBREVIATIONS AND ACRONYMS

| ADC | Agricultural Development Corporation |
|----------|--|
| AISP | Agricultural Input Subsidy Programme |
| ASDS | Agricultural Sector Development Strategy |
| CAN | Calcium Ammonium Nitrate |
| CIP | Crop Intensification Programme |
| DAP | Di-Ammonium Phosphate |
| ESP | Economic Stimulus Programme |
| GDP | Gross Domestic Product |
| GFSP | Ghana Fertilizer Support Programme |
| GIS | Geographic Information System |
| GOK | Government of Kenya |
| HIV/AIDS | Human Immunodeficiency Virus/ Acquired Immune Deficiency Syndrome |
| KARI | Kenya Agricultural Research Institute |
| KCSE | Kenya Certificate of Secondary Education |
| KFA | Kenya Farmers Association |
| КСРЕ | Kenya Certificate of Primary Education |
| KSHS | Kenya Shillings |
| MDGs | Millennium Development Goals |
| NEPAD | New Partnership for African Development |
| NCPB | National Cereals Produce Board |
| TIP | Target Input Programme |
| WB | World Bank |
| WSSD | World Summit on Sustainable Development |
| ZFSP | Zambia Fertilizer Support Programme |

ABSTRACT

The agricultural sector is a significant element of the economies of many countries and which contributes to the realization of major development milestones. According to a report by United Nations' World Summit on Sustainable Development on Food Security, poverty eradication, agriculture and food security have moved to the center stage of global development agenda. The international community, at a World Summit on Food Security held in Johannesburg in 2002, reaffirmed its commitment to develop national and local programmes for sustainable development, poverty eradication and food security (UNDP, 2002). Following this Summit, many countries in Africa revamped their subsidy programmes in which poor farmers were supplied with agricultural farm inputs at controlled and subsidized prices, and often on heavily subsidized credit. As the Kenyan Government continues to operationalize the Agricultural Sector Development Strategy (ASDS) and Vision 2030 there is still need to address the influence of its subsidy programme on food security. This study therefore examined the influence of farm subsidies related factors on food security in East Karachonyo Division, Homa-Bay County. The study was guided by the following objectives; determining how access to information of the subsidy programme, training of farmers on the use of subsidies, provision of inputs and the extent to which time of distribution influence the use of the government's farm subsidies and their effect on food security. The study targeted all the beneficiary farmers under the government's subsidy programme in East Karachuonyo Division, the Sub-County Agricultural Officer, Divisional Agricultural Officer and four Extension Officers and adopted a descriptive survey design where qualitative and quantitative data was collected. The target population was stratified proportionately according to the three main regions in the division where farming activities take place to provide every region with equal chance in the study. Simple Random Sampling was then used to pick the final samples from the population strata. Purposive Sampling was used to sample the Agriculture personneland interview schedules were used to gather information from the six key informants. Structured questionnaires were used to gather data from 254 respondents, a sufficient sample size from the target population of 752 according to Krejcie and Morgan table. Piloting of the study was done in Kasipul Division to refine both tools by testing their strengths and weaknesses and adjustments made accordingly. The collected data was then analyzed qualitatively and quantitatively using of SPSS version 19. The presentation and interpretations were done using frequency tables, figures and percentages for quantitative data. Narrative analysis was used to analyze the qualitative data where information was focused by themes and organized into coherent categories that summarized and brought meaning to the text, patterns of connections identified and interpreted. The study established that 69% of small holder farmers were widowed females aged 41 to 50 years. It was evident from the study that small holder agriculture attracted less educated people (80%) without requisite knowledge and skills for the highly competitive job market. The former provincial administration structures proved to be the most effective medium of disseminating information in rural set ups as rated by 76% of respondents. The major type of subsidized input received by most farmers from the government was certified seeds (67%) and fertilizers (28%). However, 96% of the respondents felt that these subsidies were not distributed t the right time. Finally, the study concluded that not any of the factors when considered on their own ensured food sufficiency. The study recommended an integrated approach that combines agriculture technology, timely provision of the required support training and inputs, backed up with a working feedback mechanism to promote effective management and control of sustainable and competitive agriculture leading to food security and improvement of livelihoods.

CHAPTER ONE INTRODUCTION

1.1 Background of the study

Agricultural sector provides a strong and vibrant socio-economic pillar in development. Most governments subsidize agricultural sector inputs in order to improve the socio-economic viability of farming and ensure national food security (Tripp & Longely, 2006). Food security exists when all people, at all times have physical and economic access to sufficient, safe and nutritious food that meet their dietary needs and food preference for an active healthy life. Food security therefore is not just the physical availability of a single staple food but a variety of food that is accessible in terms of affordability in adequate quantities containing essential nutrients. (World Food Summit, 1996)

Farm subsidies in the world's biggest economies have been on the rise reversing a long-term trend as governments pour more funding into agriculture despite strained budgets and high food prices. Government intervention in food and fiber commodity markets in United States began with the English Corn Law which was a classic case of farm subsidy through trade barriers. This law has for centuries regulated the import and export of grain in Great Britain and Ireland but was repealed in 1846. The bankrupting of Europe by the destructive effects of the World War I, in 1918, led to the closure of major export markets in the United States and beginning a series of events that would lead to the development of agricultural price and income support policies. United States price and income support, (agricultural subsidy), grew out of acute farm income and financial crises, which led to widespread beliefs that the market system was not adequately rewarding farmers for their agricultural commodities. Modern agricultural subsidy programs in the US began with the New Deal and the Agricultural Adjustment Act of 1933 which gave the government the power to set minimum prices and included government stock acquisition, land schemes to cut supplies by destroying livestock (Summer, 2008).

After several years of experimenting, China introduced its first nationwide direct subsidies in 2004 where local authorities were urged to ensure that subsidies reached farmers before the 2004 spring crops were sown. Subsidies for high quality seeds were paid to seed supply companies, which were expected to pass on the subsidies to farmers (Gale, Lohman, & Tuan, 2005). In 2006,

China launched an altered subsidy program for agricultural production materials in which subsidies for each farmer were a function of the fluctuating market prices of agricultural equipment and gain, as well as cultivated land area thus providing an incentive for farmers to grow grain (Guo & Zhao, 2010).

In Africa, many countries including Kenya, Tanzania, Malawi, Zimbabwe and Zambia have pursued large scale subsidy programmes from the 1960's up through the 1980's (Dorward, 2009). These programmes were characterized by a government-controlled input (and output) marketing system, in which farmers were supplied with agricultural inputs at controlled and subsidized prices, and often on heavily subsidized credit. Some of these programmes succeeded albeit being extremely expensive and tended to benefit relatively well-off and better connected farmers. Further, the fertilizer subsidy programmes were prone to inefficiencies arising from high administrative costs, government monopolies and political manipulation (Banful, 2010b). As the subsidy programmes were dismantled and input markets liberalized as a part of the structural adjustment process in the 1980's and 1990's, input use and agricultural productivity declined (T.S., Valerie, & Crawford, 2006).

After a period of liberalized input markets by the end of the last century, new subsidy programmes began to emerge in several African countries. The Malawian government pioneered the return to large- scale subsidies in 1998, when it began distributing free fertilizer to farmers (Banful, 2010b). The implementation of a large-scale agricultural input subsidy programme in Malawi in 2005/6 and subsequent years attracted major international interest and due to these subsidized fertilizers, grain production in Malawi increased. This helped Malawi to come out of deprivation through exports of surplus and guaranteed food security of the country.

The Fertilizer Support Programme in Zambia (ZFSP) launched at the start of the 2002/3 agricultural season sought to break from earlier programmes that focused less on direct subsidies and more on controlling input prices and making sure that inputs were available to smallholders through state-managed production and distribution. Indirect subsidization was provided in the form of state-provided credit, of which only 5%-10% was recovered. According to (World Bank, 2010) the programme has been reasonably profitable from a national perspective and may provide reasonable value for money as a means of increasing food security.

In Tanzania agriculture is the backbone of the economy and a significant contributor to overall national growth sharing more than 45 percent in the GDP and employing over 80 percent of the population. In 2008/9, Tanzanian government embarked on an initiative to retrieve agricultural inputs to stimulate growth in the needy households (Arumugan, 2011). The objective of the Accelerated Food Security Project for Tanzania is to contribute to higher food production and productivity in targeted areas by improving farmers' access to critical agricultural inputs. Heavy subsidy to agricultural sector has improved livelihoods of the poor, generated demand of goods and services in the community and reduced poverty and inequality and supported social and political stability (Tambwe, 2012).

In Kenya the agricultural sector is the mainstay of the economy and directly contributes 24 percent of the GDP and 27 percent of GDP indirectly through linkages with manufacturing, distribution and other service related sectors. Approximately 45 percent of Government revenue is derived from agriculture and the sector contributes over 75 percent of industrial raw materials and more than 50 percent of the export earnings. The sector is the largest employer in the economy, accounting for 60 per cent of the total employment. Over 80 percent of the population, especially living in rural areas derives their livelihoods mainly from agricultural related activities(Kenya Agricultural Research Institute, 2012).

Due to these reasons the Government of Kenya (GoK) has continued to give agriculture a high priority as an important tool for promoting national development. However, food insecurity still remains the sole challenge to this sector. As with other countries, the Government of Kenya has responded to the food crises through three major policy interventions: Supply, prices and income related policies with subsidy on farm inputs, especially fertilizers, through involvement of the Government National Cereals and Produce Board (NCPB) in importing and distributing the inputs being the major undertaking on supply related policies. Agricultural subsidies have been provided by the Kenyan government to farmers since 2004 in order to increase their outputs, reduce post-harvest losses, adopt better technologies and production practices and enhance market links to promote farmers income thereby improving the economic viability of small scale farmers and improving food security. (Government of Kenya , 2010).

1.2 Statement of the problem

In the recent years, and especially starting from 2008, Kenya has been facing severe food insecurity problems. These are depicted by a high proportion of the population having no access to food in the right amounts and quality. Official estimates indicate over 10 million people are food insecure with majority of them living on food relief. Households are also incurring huge food bills due to the high food prices. Maize being staple food due to the food preferences is in short supply and most households have limited choices of other food stuffs (Kenya Agricultural Research Institute, 2012).

In view of this the Ministry of Agriculture in Kenya released a policy statement on promoting sustainable and competitive agriculture through formulation of agricultural policies aimed at promoting agricultural technology, provision of extension and regulatory services for agricultural development in order to attain food security for all Kenyans (Ministry of Agriculture, 2008). In line with this, countrywide agricultural subsidies to increase farmer's productivity and incomes to enhance food safety were introduced by the government. However, despite these concerted efforts by both Government and communities, food shortage cases are still rife in many parts of the country (Government of Kenya , 2010). Hardly hit areas like East Karachuonyo Division still experience intermittent food insecurity (Ministry of Agriculture, 2013).

Rachuonyo North Sub-county Agricultural Department report for the financial year 2012/2013, underscored that despite the significant contribution of the agricultural subsidies programme to enhance self-food sufficiency, food security level is still low since the district experiences acute food shortages rendering it to depend on relief food and food imports from other counties. The current food insecurity problems in East Karachuonyo are attributable to several factors, including high costs of domestic food production due to high costs of inputs especially fertilizer, frequent droughts and flooding in most parts of the division, escalating population due to natural increase as more people continue to depend on diminishing farm sizes and following the post-election violence which occurred in early 2008, high global food prices and low purchasing power for large proportion of the population due to high level of poverty and the fact that many farmers shy away from using fertilizers fearing that it destroys the soils further (Ministry of Agriculture, 2013). In the report, a household of eight (8) people requiring 12 bags

of the staple cereal, maize, annually can only produce 2 bags which only sustains them for 2 months after which their reserve is exhausted. 95% of the households cannot afford the requisite four meals a day pointing to serious food shortages. This situation heightens in the months of April, May and June before which the next harvest is ready.

Hospital records at the Kendu-Bay Sub-District Hospital show a rise in the number of children admitted due to malnutrition during these peak months. Eight of every ten children seen at the hospital suffer from malnutrition disorders. The increase in disease incidence adds to the household disease burden thus stretching the household's already meager resources. This has also led to increased absenteeism from school by school going children. Those who manage to attend school, show up very hungry with low concentration spans leading to poor performance. This is as backed by Education Department's reports that show increased absconding from school by the children during this period. Parents and caregivers during these times preoccupy themselves with food searching ventures neglecting their other responsibilities. Juvenile caseloads at the Probation Offices increase many-fold as children seek also to make ends meet through hook and crook.

All these problems could be attributed to food insufficiency caused by low agricultural productivity. The Government's subsidy programme was initiated to solve these problems but still farmers lack the requisite information to access this programme. The Agriculture department is grossly understaffed with extension officers who ought to sensitize farmers on the existence of the subsidies. This could be through talks, community radios, brochures and even posters. The few extension officers are also not facilitated to play their role in enhancing agricultural productivity. Besides this, farmers are not trained on the use of subsidies yet a trained population is a real asset in ensuring agricultural productivity. The few extension officers are not trained on indigenous knowledge relevant to the farming activities carried out in their working areas and thus cannot in turn pass on this knowledge to the farmers to enable them to be sustainable and successful in future.

Furthermore, the subsidies are not provided in the right quantity, quality and at the right time. Even after fulfilling all the required conditions and joining long queues, a farmer will not get the right quantity and quality of fertilizer he or she paid for. This will not only lead to poor plant health and growth but also a waste of money and time. Complicated bureaucratic requirements and system of centralized distribution have caused farmers to delay time of planting of crops, potentially putting the food security of the country and especially East Karachuonyo division at risk. This study therefore sought to investigate how the provision of the government's agricultural farm subsidies influences food security in East Karachuonyo Division, Homa – Bay County.

1.3 Purpose of the study

The purpose of this study was to determine the influence of the use of government's farm subsidies on food security in East Karachuonyo Division, Homabay County, Kenya.

1.4 Objectives of the study

The study sought to achieve the following objectives:

- i. To examine how access to information of the subsidy programme influence food security in East Karachuonyo Division
- ii. To establish the extent to which training of farmers on the use of subsidies influence food security in East Karachuonyo Division.
- To assess the extent to which provision of farm inputs influence food security in East Karachuonyo Division
- iv. To determine the extent to which time of distribution of the agricultural subsidies influence food security in East Karachuonyo Division.

1.5 Research Questions

The following research questions guided the study:

- i. How does access to information of the subsidy programme influence food security in East Karachuonyo Division?
- How does training of farmers on use of the subsidies influence food security in East Karachuonyo Division?
- iii. How does provision of farm inputs by the government influence food security in East Karachuonyo Division?
- iv. How does time of distribution of subsidies influence food security in East Karachuonyo Division?

1.6 Significance of the study

The provision of government's agricultural subsidies to farmers can only promote food security when factors influencing self-food sufficiency are identified and mitigated. It is hoped that the findings of this study will provide beneficial information and data for use by the government's Ministry of Agriculture in improving already existing policies aimed at promoting food security through the use of agricultural subsidies.

The study may also help researchers and students interested in similar research topics by providing insights for further investigations in other areas. Furthermore, the study may possibly instill awareness among the farmers on how government's agricultural subsidies can promote self-food sufficiency. Moreover, the study could help Non-Governmental Organizations (NGOs), donors, development partners and other stakeholders in the field of agriculture to focus their efforts to promote food security and socio economic welfare of the nation.

1.7 Limitations of the study

The commencement of this study coincided with the onset of long rains in East Karachuonyo Division from April leading to muddy roads which made it difficult to access certain areas. This caused some delay since questionnaires were administered. There was also no proper road network into targeted interior areas. The occurrence of these eventualities were mitigated by accessing affected areas by use of hired four-wheel drive taxi and motor cycles to penetrate remote regions with no good road network.

The study was also limited by the methodological approach that was applied. Since the questionnaires did not exhaustively capture the information required especially from the key informants, interview schedules were used in addition to the questionnaires. In view of the fact that more questionnaires than interview schedules were used to collect data, more quantitative data was collected as opposed to qualitative data. This thus presented a quantitative versus qualitative data limitation.

This research projectwas developed alongside other learning activities. This posed a time constraint in handling both learning and research activities to meet strict deadlines. This was overcome through proper time management. Furthermore, the time allocated for this study did not allow for a countrywide study thus will only be limited to East Karachuonyo Division in Homa-Bay County. The findings of this study were thus used only to set trends and were not generalized to the entire country.

1.8 Delimitations of the study

The study was confined to the influence of government's farm subsidies on food security in East Karachuonyo Division and not any other subsidy programme run by any other agency. It targeted only farmers who benefitted from the Government's agricultural subsidy program. This tapered focus was due to the fact that the subsidy program has been the largest food security project undertaken by the Kenyan Ministry of Agriculture. This study was therefore restricted to assess the successes or failures of this program in ensuring households were food secure in East Karachuonyo Division.

This study was delimited to Wang' Chieng, Kibiri, and Kendu Bay Town wards in East Karachuonyo division where farming activities took place. East Karachuonyo division is one of the two divisions in Karachuonyo Constituency located in Homa-Bay County. The study's focus was on East Karachuonyo because it is the most food insecure Division in Homa-Bay County. It has poor soil types compared to others in the county. East Karachuonyo also has the least donor support in many sectors, agriculture included. When compared to other divisions in Homa-Bay County, it enjoys the least donor focus and resource investment undertaken to facilitate community driven development, women empowerment and child-welfare, environment, and food security projects. Other divisions like West Karachuonyo, its counterpart, enjoy massive support from international donors like ChildFund, World Vision, African Development Bank and Plan International.

1.9 Basic Assumptions of the Study

The study assumed that all the farmers interviewed provided honest and accurate information in order to determine the discrepancy between the actual and expected level of food security. This information will help highlight the plight of farmers and to make the farmers see themselves as part of the programme since the recommendations will aid in soliciting for more help from the government to the farmers.

1.10 Definition of significant terms as used in the study

- Access to information: Access to information is the obligation to publish and disseminate to the public key information and the obligation to receive from the public requests for information and respond.
- Agricultural inputs: A range of materials, which may be used to enhance agricultural productivity. Most important among these are fertilizers and improved seeds.
- Certified seeds: A type seed that is produced under strict certification standards in order to maintain varietal purity, has pass field inspection, by an approved seed conditioning plant, sampled, and passed lab testing before it can be sold
- **Food security:** A situation where all people at all times have physical and economic access to sufficient, safe, nutritious food that meet their dietary needs and food preferences for an active and healthy life.
- Government's Farm Subsidies: Government free supplied input subsidies of CAN Fertilizer, DAP fertilizer, certified maize seeds and Subsidized NCPB fertilizer vouchers.
- Production:Is the volume, value or quantity of goods and services produced by
a worker, plant, firm or economy. It is the sum total of the results
achieved by the various factors together.
- Productivity:An economic measure of output per unit of input. Inputs include
labor and capital.
- **Programme:** A plan of action aimed at accomplishing a clear objective, with details of what work is to be done, by whom, when, and resources to be used.
- **Provision of farm inputs:** This is the distribution of resources that are used in farm production, such as fertilizer and seeds.

- **Small holder farmer:** Persons dependent on small-scale subsistence farming as their primary source of income and cultivate less than 2.0 hectare of land.
- **Time of distribution :** Is the planting period when the Government's farm subsidies are disbursed to the farmers.
- **Training:** Is an educational and learning process that involves acquisition of knowledge, concepts, rules and new information, changing of attitude, re-learning and reinforcement of existing knowledge and skills.

1.11 Organization of the study

This research project was organized in five chapters. Chapter one introduced the study, stated the problem, objectives, research questions, illustrated the significance of the study, limitations, delimitations, basic assumptions and definition of significant terms that were used in the study. The second chaptercovered literature reviewed in relationto the study. Chapter threedetailed the methodology of the study. Thiscomprised the research design that was adopted, targeted population, sample and sampling technique, the research instruments, data collection procedures, data processing and analysis techniques and ethical considerations. Chapter four presented the study findings discoursed under key themes and in line with study objectives. It also focused on the presentation as well as discussions and interpretation of study data. Chapter five summarized the main study findings and presented significant conclusions to the study. It also captured the contribution the study has made to the body of knowledge and gave recommendations both for policy action and further research on the influence of government farm subsidies related factors on food security.

CHAPTER TWO LITERATURE REVIEW

2.1 Introduction

This chapter reviewed the available relevant literature on the influence of government's farm subsidies related factors in promoting food security. It covered intellectual work done in Kenya and related findings across the world. Itconsidered literature on the following thematic areas: influence of access to information of the subsidy programme on food security, influence of training of farmers on the use of the farm subsidies on food security, influence of provision of farm inputs on food security and influence of time of distribution of the farm subsidies on food security. This chapter also diagramed the variables in a conceptual framework based on the theoretical framework whose features form this study. It showed how the independent variables influenced the dependent variables and demonstratedhow the moderating intervening variables influenced the outcome of the study. Lastly it looked at a summary of all the literature reviewed.

2.2 Overview of the Concept of Government's Agricultural subsidies on Food Security

An agricultural subsidy is any financial assistance given to farmers through government sponsored price support programme or agribusiness to supplement their income, ensuring ample food production, manage the supply of agricultural commodities, stabilizing food prices and generally strengthening the agricultural segment of the national economy(Thurow, 2010).

Majority of industrialized countries, in the 1930s, developed agricultural price support policies to reduce the unpredictability of prices of farm products and to increase or stabilize farm income. In food exporting countries, such as United States and France agricultural subsidies have been designed primarily to increase farm income, either by raising the long –term level of prices above free market level or by providing direct payments to farmers. In Africa, increase in food and fertilizer prices have impacted greatly on the poor urban and rural households, renewing policy markets focus on the need to increase staple food crop productivity (Wright, 1995).

A study by the Overseas Development Institute evaluates the benefits of the Malawi Government Agricultural input subsidy programme, which was implemented in 2006/2007 to promote access to and use of fertilizers in both maize and tobacco production to increase agricultural productivity and food security. The subsidy was implemented by means of a coupon system, which could be redeemed by the recipients for fertilizer types at approximately one – third of the normal cash price. According to policy conclusions of the overseas Development Institute the voucher for coupon system can be effective way of rationing and targeting subsidy access to maximize production, economic and social gains. Many practical and political challenges however remain in the program design and implementation required to increase efficiency, control costs and limit patronage and fraud (Dorward, 2008).

2.3 Access to Information and Food Security

Creating awareness through provision of information on products and services to the rural people is an essential component for development. Information has power only when applied and practiced effectively. In another review (Bigman, 2002) asserted that in Rwanda information access is regarded as a basic resource for farmers to improve their food security level as well as their living conditions. Information access facilitates awareness and empowerment as well as access to information on supply of inputs, new technologies, early warning systems (drought, pests, and diseases) and market prices.

Since information is power, then enough information should be given to farmers repackaged in the language they will understand and given to them at the appropriate time. Farmers are able to make informed choices on the basis of information available to them, therefore efforts to create suitable awareness for accessing information is very significant. (Tripp & Longely, 2006)suggested that information given to rice farmers in Sri Lanka should be according to their needs, their needs could be how to use fertilizers, plant seeds, control pests and disease.

In a study carried out in Nigeria by (Okafor, 2002), she noted that an effective subsidy programme promoting policy is successful when it creates awareness among the farmers on the existence of the subsidies. The policy should analyze the extent to which the farmers are exposed to valuable information regarding the subsidy programme. She noted that extension officers are the main information providers, and are in charge of information centers; hence have a great role to play in providing information to farmers in different formats like talks, posters, pamphlets and brochures.

In another study by (Nyoro & Muiruri, 2001), mentioned that the FM radio sessions form the basis of content delivery to rural farmers. Extension agents and selected farmers from the project area participate in radio discussions which are broadcasted in national and local FM stations. Recordings of radio broadcast are dubbed on audiocassettes for replay by farmer groups during their meeting days. The participation of extension agents and farmers in agricultural radio programmes has brought access to information closer to the rural small holder farmers thereby demystifying the agricultural programmes.

2.4 Training of Farmers and Food Security.

The government of Kenya recognizes that educating and training its citizens is fundamental to the success of the vision 2030 strategy (Ministry of Planning, National Development and Vision 2030, 2007). The Vision 2030 relies on the creative talents that can raise the country's international competitiveness through enhanced productivity at the local and national levels. A literate population is an asset to the agricultural sector as it provides qualified personnel and opportunities for developing the sector. According to (Nompozolo, 2000) a knowledge-based economy creates, adopts and adapts information on production and distribution of goods and services, making it the focal point and engine for rapid agricultural growth.

To become an entrepreneur with parameters that determines the scope of an enterprise in rural areas, the small holder farmers must be familiarized with the principles of business economics, record keeping and they should become proficient with managerial skills. Education and training should go hand in hand since education is the primary motivator and initiator. Any agricultural development plan should start with training of the target extension support during the project implementation. Farmers should have a great contact with various sources of relevant information which confirms the importance of knowledge in order to improve farming efficiency. Good performance and reasonable amount of information is necessary to back up agricultural productivity. He also recommends that extension officers must be trained in indigenous knowledge relevant to the farming activities carried out in their working areas.Training is enhanced when various medium are used to promote easy understanding, this can be done using appropriate mediums which vary from workshops, seminars, on farm training and demonstrations (Oeffle&Koelle, 2003).

13

The role of extension officers actually determines sustainability of the development initiatives in the long run. Thus, the higher the level of education of a farmer the more successful the farmer is likely to be. Education mostly improves the managerial ability by helping the farmer to emulate and execute farm plans and acquire information on how to improve marketing of the products. A sound educational background can reinforce natural talent and provide a basis for informed decision making (Oeffle & Koelle, 2003). The knowledge that the farmers gain from the extension officers becomes very significant by fully disseminating information between the government and small holder farmers.

A study conducted by (Guo & Zhao, 2010) in china disclosed that the training process is best done when broken down into 5 major steps namely prepare, tell, show, do, and review. Prepare the farmers to be at ease and explain why the skill to be learned is important. Explain the content thoroughly by breaking it down into key parts or steps. Demonstrating exactly how the task or skill is to be done by the farmers. Involve the farmers by asking questions and getting feedback. Give the farmer an opportunity to perform or do the task, this is important as it builds confidence in other learner. The trainer should ensure that the farmer does each step correctly to avoid getting wrong concepts. Finally the trainer should review the training process by providing honest feed back to the leaner in terms of encouragement, constructive criticism.

A review study by (Nompozolo, 2000)in South Africa noted that good performance and reasonable amount of information is necessary to back up agricultural productivity. He also recommends that extension officers must be trained in indigenous knowledge relevant to the farming activities carried out in their working areas. The role of extension officers actually determines sustainability of the development initiatives in the long run. It is the knowledge that the farmers gain from the extension officers that enable them to be sustainable and successful in the future. Therefore the extension officers become very significant in fully disseminating information between the government and the small holder farmers.

Another study by (Muok, Kimondo, & Atshushi, 2001)pointed out that banana farmers in Uganda are trained using farmer to farmer approach, where model farmers are selected based on their education level, leadership position, success at the enterprises and personality traits. The model farmers are trained and given inputs, other farmers are encouraged to learn from the

model farmers who are required to encourage and train their peers by generously sharing their knowledge. Formation of farmer organizations enables farmers to discuss and share their various experiences which enhance group dynamics.

A journal article by (Jiggins & Van den , 2007) suggests that before planting seasons farmers should be appraised on crop management techniques, fertilizers requirements and its application strategies to get maximum benefit and output. Training can also be in form of product demonstration, fertilizer demonstrations are laid out at farmer's field to educate and convince the farmers for balance fertilizer use. Another avenue of training farmers is through brochures on fertilizer use which should accompany the fertilizer during distribution. Training is beneficial when it is done where it is exactly needed and should be designed considering the ability of the farmers to learn the material facts, use the facts effectively and make most efficient use of resources available (Arumugan, 2011)

According to (Munyaga, 2006) in order for Kenya to promote better service the proximity of extension services can ensure the lowest cost and quality of inputs that are available to farmers. The purpose of demonstrations and training sessions should focus on helping small holders optimize their use of the inputs and training topics should result from identified training needs which will have direct relevance to the needs of trainees and therefore enhance learning by adults such as farmers and extension agents.

In a case study of Bangladesh, (Bari, 1987) noted that participation of rural people is essential for effective rural development; people cannot participate unless they have been motivated or made aware about changes they need for their welfare. As such regular and repeated training and education play a vital role to make the rural people aware and acts as subjects in the development process. (Muok, Kimondo, & Atshushi, 2001), pointed out that in Uganda the government privately run extension services as well as non-governmental organizations regularly train banana farmers. Thus the more a farmer has been trained effectively and continuously the more successful the farmer becomes. Training improves the managerial ability by helping the farmer to emulate and execute farm plans and also acquire information on how to improve marketing of their products. Hence a sound training background reinforces natural talent and provides a basis for decision making.

According to (Ali, Kathuri, & Wesonga, 2011) in a case study on effective extension methods for increased food production in Kakamega District in Kenya, training should continue through extension support during the project implementation. Regular training of farmers on subsidies usage like fertilizers enhances their adoption. Farmer field days should also be held at various crop growth stages to show case the effect on balanced fertilizer use.

2.5 Provision of Farm Inputs and Food Security

A study conducted by (Thompson and Troeh, 2003) in Lake Tahoe in North America noted that to be most effective, fertilizer need to be applied in proper quantities. Proper fertilizer application will not only improve plant health and growth but it will save money and time, and most importantly help protect the crystal clear beauty of Lake Tahoe. If less or excess fertilizers are supplied to the plants, the nutrients they contain will by-pass the plants they are intended for and end up in downstream waters where they will stimulate the growth of other unwanted plants like algae.

According to (Iken & Amusa, 2004) application of inputs like fertilizer should not be seen as a goal in isolation. The broader goal is application of sufficient quantity of fertilizer since fertilizers are substances that supply plant nutrient or adjust soil fertility and food quality is definitely improved by adequate use of fertilizers. Another consideration for quantity of fertilizer and seeds to be used on a farm is the size of farm so as to ensure that sufficient quantity of seeds and fertilizer are applied as per the required measures.

2.6 Time of Distribution and Food Security

The Kenyan government's first subsidy programme in more than ten years was intended to help farmers offset their costs of purchasing maize seeds and fertilizer, but the programme has been mired in problems. Complicated bureaucratic requirements and delayed import of government-subsidized fertilizer have caused Kenyan farmers to postpone time of planting of crops, potentially putting the food security of the country at risk. The former President Mwai Kibaki's directive to the treasury in March 2013 to release 3.34 billion shillings (\$39.4 M) for the procurement of fertilizer and maize seeds was made late – when the rainy season had already started. The presidential orders should have been made at least two months before the start of the planting season to allow transportation to far-flung farmers. These are among the barriers that are

affecting food production as most farmers were yet to plantas late as April because they were relying on the cheap seeds and fertilizer.

Under the subsidy programme, farmers can buy 50 kilograms of Di-ammonium Phosphate (DAP) for 2,500 shillings (\$30), whereas the same amount would sell on the open market for 4,600 shillings (\$54). But in order to take advantage of the subsidy, farmers must qualify for it through a complicated application process. Growers and other agricultural industry stakeholders are required to fill out an application at a National Cereals and Produce Board (NCPB) regional office, wait for officials to make a decision, go to an authorized bank to pay the subsidized price upon receiving approval, and then head to one of the NCPB-run depots to pick up their consignment of seeds and fertilizer. The problem is that in each step in the process, farmers have to travel far to reach NCPB offices and deal with long waits which compels some farmers to buy fertilizer at market prices.

In addition, the government is still a long way off from shipping in enough DAP to meet farmers' demand. Slowing delivery even more is the system of centralized distribution. Even after fulfilling all the conditions, one has to join long queues and at the end of it all, one does not get the quantity of fertilizer they paid for or they are told there is no fertilizer. However these steps are necessary to deter unscrupulous tradersand to ensure [that] real farmers get the fertilizers at the subsidized rates. In the past, there have been scenarios where traders pose as farmers who buy and then sell [the fertilizers] to real farmers at inflated prices (Bosire, 2013).

NCPB, the government agency entrusted with distributing fertilizer and seed, is reviewing procurement procedures to ensure efficiency. Easing these requirements could help offset the initial delay and ensure timely planting to secure the country's food security. Subsidies like seeds and fertilizers should be distributed to famers during planting season at the onset of rains. Timely planting using fertilizer allows the germinating seeds to benefit from the nitrogen flux effect which occurs with the first rains. The germinating seeds will also benefit from the warm soil temperature and good aeration thereby escaping pests and diseases which minimize agricultural yield. When subsidies are distributed early, farmers will plant early and harvest promptly thus allowing land preparation for the next cropping season (Kiiya, Ndung'u, Onyango , Lunzalu, & Mulati, 2005).

2.7 Empirical Literature

Green revolution in Asia was mediated by the facilitation of modern inputs such as improved seeds, fertilizers and pesticides to farmers. With the introduction and adoption of these improved inputs, the farmers were able to substantially increase their crop production levels by several folds. These increased yields provided food security and stability which in turn sparked off an array of social and economic transformation (Bezabih, Hadera , & Nigatu, 2010).

In fostering agricultural development and safeguarding food security in China, the Chinese government introduced policy support programme by increased spending in agricultural subsidy from 103 billion Yuan in 2007 to 123 billion Yuan in 2008. The subsidy for superior varieties covered rice, wheat, corn and cotton. The subsidy for purchasing farm machinery also rose to 13 billion Yuan. In addition to this, China further expanded the national grain reserve and provided a strong incentive to major grain producing counties (Gao, 2008). The implementation of agricultural subsidy policy in China greatly promoted farmers' income since 1978. Farmer's income grew most rapidly from 1978 to 1984 (Cheng, 2006). China's agricultural subsidy policy mainly involves finance, foreign trade, food, civil affairs, and banks so the transaction cost is high (Guo & Zhao, 2010)

Many parts of Africa have a favorable climate and fertile soil, making agriculture well suited for the continent, however, the right equipment and expertise is often lacking and food security is not always guaranteed. South Africa's Standard Bank is determined to make food security a sustainable reality in Africa. In 2009 it decided to help all categories of farmers in the countries in which it operates, prioritizing those in Ghana, Nigeria, Namibia, Uganda and Zambia. Next it will assist producers in Mozambique and Tanzania (Taylor, 2004).

Malawi's Agricultural Input Subsidy Programme (AISP) turned around the agricultural sector into a success leading to food security for the country (African Focus Bulletin, Jan 2009). In November, 2008 the United Nations Food and Agricultural Organization rewarded Malawi's President the late Bingu Mutharika, who also served as the Minister of Agriculture with the Agricola prize. In the 1998/99 and 1999/2000 agricultural seasons, the Malawi Government with donor support, implemented a large scale programme under which all farm household received

an input 'starter pack' comprising 15kg of fertilizer, 2 kg of maize seeds and 2kgs of legume seeds. With good rains, Malawi had large harvests these years.

From 2000/2001 the programme was scaled down to the 'Target Input Programme' (TIP) with a smaller quantity 10kg fertilizer per beneficiary and targeted a section of beneficiaries, the national production was very low with severe food shortages in 2001/2002 to 2005/2006. From 2005/2006 the government took a different approach with a very large scale Agricultural Input Subsidy Programme (AISP) by providing fertilizer and seeds to farmers. Low income farmers were given fertilizers coupons to purchase 100kg of fertilizer equipment at US\$7, one fifth of the market price and in addition the farmers were provided with vouchers to buy seeds enough for planting half an acre each. As a result the average yield per farmer increased to 2 tons per hectare from 0.8 tons in 2005 (Minter, 2005)

In Rwanda, agriculture is a major component of its national economy. In 2009, agriculture contributed 34% to the country GDP, about 84% of the population of which 52% are women depends either directly or indirectly on agriculture for living (Republic of Rwanda, 2009). With a total population of 1,205,090 and an estimated growth rate of 2.9%, the country has limited availability of arable land for agriculture and the constantly growing food requirements of the growing population renders food security a major challenge (World Bank, 2007).

Cultivation of food crops have been predominantly by smallholder farmers for subsistence living, as a result the on- farm productivity levels have been very low in Rwanda. The low productivity is mainly attributed to low use of inputs which make farmers produce insufficient food to feed their families and with no surplus for future consumption hence have no income to purchase yield enhancing inputs. Increasing agricultural productivity and food security therefore requires adoption of modern inputs by the small holder farmers. Access to improved inputs was a challenge to farmers due to high purchase and transportation cost to farmers who are mainly based in the rural areas. This prompted the Rwandan Government to introduce a Crop Intensification Programme (CIP) with the goal of increasing agricultural productivity by increasing food crop production through a multi-pronged approach which involves facilitation of improved seeds inputs bought from Kenya and Tanzania and fertilizer input, consolidation of land use, provision of extension services and improvement of post-harvest handling and storage mechanisms in order to ensure that the country is food secure (Arumugan, 2011).

In Kenya, after revival of the Hola and Bura Irrigation Schemes through the Economic Stimulus Programme (ESP) in 2009, the farmers were given seeds and fertilizer subsidies which led to high maize output that improved the socio-economic lives of the farmers drastically. However, poor planning by the government in terms of storage led to post harvest losses (Hoffler & Owuor, 2009).

2.8 Theoretical Framework

In order to ascertain the interrelationship between various factors that influenced the use of government subsidies programme on food security, the study adopted the Sustainable Livelihood Approach Theory founded by Robert Chambers and Gordon Conway in 1991. Sustainable Livelihood Approach Theory concerns people's strategies and capacities to generate and maintain their means of living and enhance their wellbeing and that of future generations and which contributes net benefits of livelihoods at the local, national and global levels in the short and long term (Chambers & Conway, 1991).SLA has seven flexible and adaptable guiding principles including: Being people-centered, Being holistic, Being dynamic, Building on strengths, Aiming for sustainability, Promoting micro-macro links and Encouraging broad partnerships.

Adopting a SL approach to poverty reduction initiatives raises some difficult methodological and practical issues, including difficulties in defining who the poor are and 'social relations of poverty', i.e. where relations of inequality and power maintain and reproduce poverty at the local level. Despite these difficulties, the SL approach has strengths in showing the variety of activities that people carry out, often in combination, to make a living especially among the poor, who often rely on a number of different types of economic activities for their livelihoods, and where it is not any activity but their combined effect for the household economy that matters (Chambers R. , 1995); (Hussein & Nelson, 1998).This is in line with findings from recent participatory poverty assessments which show that poverty is a much more complex phenomenon than just low incomes or insufficient food production (Holland & Blackburn, 1998).

Other crucial facets of the SL approach include: facilitates an understanding of the underlying causes of poverty by focusing on the variety of factors, at different levels, that directly or indirectly determine or constrain poor people's access to resources/assets of different kinds, and thus their livelihoods; facilitates an understanding of the linkages between people's livelihood strategies, their asset status, and their way of using available natural resources; and offers a more appropriate basis for evaluating the socio-economic impact of projects or programmes which have poverty alleviation as at least one of their overall objectives.

From the foregoing, the study adopted the SL framework to examine the Government's farm subsidies programme to determine how access to information of the subsidy programme, training of farmers on the use of the agricultural subsidies, provision of farm inputs and time of distribution of the agricultural subsidies, interrelated with the main pillars of food security which are availability, accessibility, stability and utilization.

2.9 Conceptual framework

According to (Mugenda & Mugenda, 2003), conceptual framework involves forming ideas about relationships between variables in the study and showing the relationship graphically. This study's conceptual framework was based on how independent variables which included: access to information of the subsidy programme, training of farmers on the use of subsidies, provision of farm inputs and time of distribution of the subsidies influenced the use of government's farm subsidies on food security.

Figure 1: Conceptual framework diagram

The study was guided by the relationship between the variables as shown below:



The above figure illustrates the perceived relationship between the variables of the study i.e. how access to information of the subsidy programme, training of farmers on the use of the agricultural subsidies, provision of farm inputs and time of distribution of the farm subsidies which are components of the independent variable, the government's subsidy programme, influences food security, the dependent variable. It also shows how the moderating and intervening variables influence the planning and execution of the subsidy programme by the government.

Access to information of the subsidy programme enabled farmers to be aware of the government programme. This influenced the number of the desired beneficiaries' thereby promoting use of the inputs in order to produce sufficient outputs as per the factors of production. Success of rural development programmes depends on effective use of information in daily activities since the diverse nature of rural communities indicates that their information needs are many and varied. The effectiveness of a given information dissemination strategy depends on factors such as the characteristics of the innovation, the target audience, and the information channel. Getting the proper fit of the innovation, information channel, purpose, and target audience is important.

Regular and relevant training on the use of subsidies by the extension officers to the farmers on food production methods and use of subsidies enables the farmers to select and implement technologies and practices which fit their particular environment and culture. The extension officers should also be adequate in numbers, and qualified in order to offer the required functional content in a meaningful form to the farmers. Quality and safe agricultural output are produced when the inputs are used as required so as to ensure that the produce are utilizable by the recipient consumers.

The type, quality of inputs provided by the government strongly influence food security, inputs should be adequate, meaning the fertilizers and seeds used should be in recommended quantities and quality required by a particular plant in order to produce quality output. The fertilizers and seeds should also be safe to the plants and the farmers taking into consideration the pH level of the soil and type of soil in order to produce consumable outputs.
Time of distribution influence the use of governments agricultural subsidies on food security since planting season should coincide with the onset of the rains given that water is vital for plant growth, so varying precipitation patterns have a significant impact on agriculture. The important aspects of rainfall to be considered are amount, duration and intensity. Total rainfall should be adequate, well distributed and reliable to increase the chances of high yield thereby enhancing food availability.

The government also influences use of the subsidies by passing laws and regulations and provision of funds in order to avail the inputs in adequate quantities, to ensure that a wider cross section of farmers can access the inputs thereby producing surplus output that can be sold by the farmers, and during the next season they can now purchase the inputs in order to produce more food and buy other food varieties they did not produce, making food to be sustainable. Therefore governments' policy can enable or limit the success of a programme such as achieving food security or surplus agricultural production to stimulate economic growth.

The intervening variables, politics, cultural values and beliefs and attitude also influence the use of government's agricultural subsidies on food security. Cultural values and beliefs are influenced by the social systems of a community which are reflected in land use patterns and ownership which is one of the main factors of productions.

Politics can influence various activities including agriculture. A conducive farming environment exists when there is no political unrest and war given that political good will is an impetus to equitable distribution of subsidies to farmers.

Attitude influences the readiness of an individual to adopt and accept an innovation and are formed as farmers gain information about any programme. It shapes a farmer's way of responding to situation based on values and assumptions manifested through behavior

2.10 Summary of Literature Reviewed

The agricultural sector is a key component of the economy of any rural populace and contributes to the realization of major development milestones. It contributes to the broader economic goals envisaged in the Kenyan Vision 2030 anchored on the economic, social and political pillars(Kenya Vision 2030, 2007). Most governments have put in place measures thatencourage intensive use of chemical and organic inputs by subsidizing fertilizer. These have helped to increase the production of food, especially among smallholder farmers who lack input and money to purchase inputs (Dreze, 2007). The exploration of the various literatures emphasizes that sustainable development on food security demands that all the stakeholders in the agricultural sector take active responsibility and participation in planning, implementation, evaluation and decisions making to enable the laid programmes by various organs achieve their end objectives.

CHAPTER THREE RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents and describes the research methodology used in conducting the study. This includes the research design, the targeted population, sampling design and techniques, research instruments for data collection, data collection procedure and analysis techniques and lastly ethical issues considered during the study.

3.2 Research Design

The study adopted a descriptive survey design in examining the influence of government's farm subsidies on food security in East Karachuonyo Division. Information that described the existing phenomena was obtained by asking individuals from a large study population about their perceptions, attitudes, behavior or values.

According to (Mugenda & Mugenda, 1999), a survey studies a large population to discover the relative incidence, distribution and interventions of sociological and psychological variables. According to (Kothari, 2004), surveys are only concerned with existing conditions or relationships, opinions held, ongoing processes, evident effects or developing trends. The method of data collection often used in surveys is either observation or interview or questionnaire (Kothari, 2004)

3.3 Target Population

The study targeted 752 farmers engaged in crop farming in the three regions of East Karachuonyo Division namely; Wang' Chieng, Kibiri, and Kendu Bay Town that received the government free supplied input subsidies of 50Kgs bag of CAN fertilizer, 50Kgs of DAP fertilizer and 10Kgs of certified maize seeds and farmers who received government subsidized NCPB fertilizer vouchers in 2013. (Ministry of Agriculture, 2013). The study also targeted 1 Sub-County Agricultural Officer, 1 Divisional Agricultural Officer and 4 extension officers.

3.4 Sample Size and Sampling Procedures

The sample size and sampling procedures used in obtaining the study's sample from the population are described below.

3.4.1 Sample Size

A sample is a small production of population selected using a predetermined procedure (Koul, 1986). The study utilized a sample size of 254based on the Krejcie and Morgan sample size determination table and as cited by (Kasomo, 2007) a target population of 752 farmers gave a sample size of 254. In addition, six (6) agricultural office personnel were also interviewed. These included: one (1) Sub-County Agricultural Officer, one (1) Divisional Agricultural Officer and four (4) extension officers. The population was stratified proportionately according to the three main regions in the Division. This was done to provide every region with equal chances in the study.

3.4.2 Sampling Procedures

Sampling entailed selecting and analyzing a relatively small number of individuals in order to find out something from the entire population from which they are selected (Mugenda & Mugenda, 1999). The sample was drawn from the target population of 752 farmers. Since the target population was not homogeneous and the purpose of sampling happens to be to estimate the population value of a certain characteristic, then proportionate stratified sampling was used to obtain a representative sample of farmers from each region benefitting from government's subsidy programme. This method increases statistical efficiency and ensures that each farmer benefitting from government's farm subsidy program has a chance of being included in the sample (Kathuri& Pals, 1993).

Proportional allocation method was used to keep the sizes of the samples from the different strata proportional to the sizes of the strata. If P_i represented the proportion of population included in stratum *i*, and *n* represented the total sample size, the number of elements selected from stratum *i*was*n*. P_i (Kothari, 2004). With the sample size (n) of 254 to be drawn from a population size (N) of 752 which is divided into three strata of size N₁=281, N₂=219, and N₃=252. Proportional allocation methodwas then adopted to give sample sizes as below for the different strata.

For strata with N₁=281, we have P₁=281/752, hence $n_1=n.P_1=254(281/752)=95$

For strata with N₂=219, we have P₂=219/752, hence $n_2=n.P_2=254(219/752)=74$

For strata with N₃=252, we have $P_3=252/752$, hence $n_3=n.P_3=248(252/752)=85$

Thus using proportional allocation, the sample sizes for different strata were 95, 74 and 85 respectively as shown in the table below.

| Stratum | Total number of | Proportion percentage | Sample size |
|----------------------------------|-----------------|-----------------------|-------------|
| | farmers | of target population | |
| Wang' Chieng (N ₁) | 281 | 37.37 | 95 |
| Kibiri (N ₂) | 219 | 29.12 | 74 |
| Kendu Bay Town (N ₃) | 252 | 33.51 | 85 |
| TOTAL | 752 | 100.00 | 254 |

Table 3.1 Total and Proportionate Sub-Sample Sizes of the population for study

Source; Ministry Of Agriculture, 2013

Simple random sampling was then used to pick the samples from each stratum. With the defined population of 281 farmers, and the proportionate representative sample of 95 for stratum 1, a complete list of this stratum population was accessed and numbers assigned to each of the sub-population units i.e. 1 to 281. Random numbers were then generated using a scientific calculator before the sample of 95 farmers was selected from the list of 281 farmers. In this case, this meant selecting 95random numbers from the random number table. The first three numbers from the random number table were: 058 (the 58thfarmer from the numbered list of 281 farmers);103 (the 103rdfarmer from the list); 76 (the 76th farmer from the list); then the 58th, 103rd and76th farmers from the list of sub-population units were selected to be part of the sample for stratum 1. This was repeated for stratum 2 and 3 respectively until a total of 254 farmers were selected from the target population.

Purposive sampling was used for the agricultural department personnel as this sampling method is applicable when a particular group of respondents is targeted andit allowed the researcher to use cases that had the required information with respect to the objectives of the study. Cases of subjects were therefore handpicked because they were informative or they possessed the required characteristics. It is a form of biased sampling or non-probability sampling used when a researcher is not interested in selecting a sample that is representative of the population. (Mugenda & Mugenda, 2003).

3.5 Research Instruments

The study used questionnaires, interview schedule and document analysis as the main tools for collecting data.

Questionnaires

Descriptive data are usually collected by opened and close-ended questions in the questionnaires (Gay, 1996). The study used both open ended and closed ended questions to collect data from small holder farmers who benefitted from the government subsidy programme. The questionnaires were structured in six sections; section one dealt with demographic information, section twocovered access to information of the subsidy programme, section three focused on training of farmers on the use of subsidy, section four focused on the provision of farm inputs, section five provided information on time of distribution of the subsidy and section six addressed the challenges and suggested solutions.

Interviews

Key informant interviews were carried out at the Sub-county and Divisional Agricultural Offices using an interview schedule. This covered areas of policy, planning and implementation of the subsidy programme. The interview schedule provided additional information to what was gathered by the questionnaires and also provided views of policies and regulations governing the government subsidy programme and how the sector reacts to the programme.

3.5.1 Pilot Study

A pilot study was conducted in the neighboring Kasipul Division by administering questionnaires to 40 farmers who benefitted from the government subsidy programme in 2013 and 3 Agriculture personnel at the division level. The 40 farmers were selected proportionately from three strata and simple random sampling used to arrive at the final sample to be used in

piloting. Piloting was done to check if randomization procedures were comprehensible to the research assistants, check reliability and validity of results and validate the research instruments before they were used to collect data for the actual study. The process refined both the questionnaires and the interview schedules by testing their strengths and weakness followed by necessary adjustments. Pre-testing the questionnaire helped to iron out vague questions that generated ambiguous responses, rephrase questions using comments by the respondents and to provide enough writing space. In addition to the pilot study, a few copies of the instruments were analyzed to ascertain the suitability of the methods of data analysis (Mugenda & Mugenda, 1999). The results of this process were used to identify potential practical problems in following the research procedures and to improve the design of the main study.

3.5.2 Validity of the Instruments

Validity of the instruments measure the extent to which the instruments will capture what they purport to measure (Mugenda & Mugenda, 1999). An instrument is validated by proving that its items are representative of skills and characteristics that it purports to measure. Validity of research instruments ensures scientific usefulness of the findings.

To uphold the validity of the instruments, the researcher discussed the content of the questionnaire with supervisor before administration in the field. This was important as it ensured unclear, ambiguous and vague questions were corrected or avoided and the insights obtained were used to make adjustments on the questionnaire items.

3.5.3 Reliability of instruments

The reliability of a research instrument concerns the extent to which the instrument yields the same results on repeated trials. (Borg & Gall, 1989)describes reliability as the level of internal consistency or stability of the measuring device overtime.

The split half reliability analysis method was used where by the questionnaires were split into two halves (the odd numbered items to one half and the even numbered items to the other half of the test) and a correlation taken between the two halves. This correlation only estimated the reliability of each half of the test. It was then necessary to use a statistical correction to estimate the reliability of the whole test using the Spearman-Brown prophecy formula (Carmines & Zeller, 1979) given by;

$$Pxx'' = 2Pxx'/1 + Pxx'$$

WherePxx" is the reliability coefficient for the whole test and Pxx' is the split-half correlation.

According to (Kaplan & Saccuzzo, 2001) an instrument with an r - value above 0.5 is considered reliable while one with an r - value below 0.5 is considered unreliable.

3.6 Data Collection Procedure

An authorization to conduct the study was obtained from the National Commission for Science and Technology (NACOSTI) under the Ministry of Higher Education, Science and Technology while University of Nairobi issued an introductory letter to the researcher. Both the research clearance permit and the introductory letter were used to gain legitimate access to the target group. Data was collected with the aid of three research assistants, each being allocated a stratum of the study. The assistants were first trained and orientated on the randomization procedures and all sections of the data collection tools. The questionnaires were filled by the research assistants for those who were not able to read and write. On spot checks were done for completeness, omission and commission errors. Data from the respondents was analyzed and results interpreted for correctness.

3.7 Data Analysis Techniques

Data collected was analyzed using SPSS version 19. Data entry started immediately after receiving questionnaires from the respondents. Data from the questionnaires werefirst analyzed manually tocheck for comprehensibility, completeness and relevance. The information gathered was then summarized, tabulated and coded to facilitate analysis and ensured both accuracy and relevance of the analysis (Miles & Huberman, 1994).

The data was analyzed using both quantitative and qualitative techniques. Quantitative data was analyzed using simple statistics like frequency distribution tables and percentages, while

narrative analysis was used to analyze qualitative data in order to determine the effect of the components of the independent variable on the dependent variable, food security.

3.8 Ethical Consideration

Authority was obtained from the National Commission for Science and Technology (NACOSTI) and from relevant ministries and administrative offices. Vide a copy of the letter from NACOSTI; the researcher sought permission from the Deputy County Commissioner who in turn wrote introductory letters advising area chiefs and assistant chiefs accordingly. The authorization together with the transmittal and introductory letters were used to brief other leaders and interested individual respondents on the scope of the study.

Sampled farmers were expected to provide honest and accurate information. To ensure this, anonymity and confidentiality were preserved and the participants wereat liberty to ignore what they did not wish to respond to or understand or all together withdraw from the study at any time without any ramifications.Confidentiality was assured by ensuring that the data collected was not privy to unauthorized persons.It was also made clear that the study was purely for academic purposes to enable the respondents participate with clear conscience without fear of victimization.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter presents the study findings which have been discoursed under key themesand in line with the study's objectives. It also focuses on presentation of information as well as discussions and interpretation of data on the influence of government's farm subsidies related factors on food security in East Karachuonyo Division.

4.2 Response Rate

Response rate refers to the percentage of the number of people who responded to the research instruments divided by the number of total respondents in the sample. 254 copies of the questionnaires were distributed to the sampled farmers who benefitted from the subsidy programme. Six (6) interview schedules were administered to six key informants and all together, their responses were recorded and the response rate was 81% as illustrated in table 4.1.

| Target Population | Total Respondents | No. Responded | Response |
|--------------------------|--------------------------|---------------|----------|
| | | | Rate |
| Farmers | 254 | 204 | 80.31 |
| Agricultural Personnel | 6 | 6 | 100.00 |
| Total | 260 | 210 | 80.76 |
| | | | |

Table 4.1 Response Rate

The findings of table 4.1 depict that the response rate was 80.76%, out of this farmers had a response rate of 80.31% and the agricultural personnel had a response rate of 100%, implying that the response rate was very good, since a response rate of 50% is deemed adequate for analysis and reporting. According to (Mugenda & Mugenda, 2003) a response rate of 60% is

good and a response rate of 70% and over is very good. The study therefore recorded an outstandingrate of response.

4.3 Demographic characteristics of respondents

This section describes the characteristics of the respondents used in the study. Demographic characteristics include features such as gender, age, education level and marital status. The demographic characteristics were studied in order to give an understanding of the respondents and their setting which was viewed as necessary to the analysis of the data obtained.

4.3.1 Characteristics of respondents by Gender

To investigate the extent to which gender of the respondents influenced the government farm subsidies programme, the respondents were asked to state their gender. This was important as one of the glaring weaknesses in Kenyan agricultural policy is the omission of the pivotal role women play in the production of the nation's food supply. While Kenyan women only own one percent of the land they produce the vast majority of the food for their entire families nationwide(Food Agricultural Organization , 2004). They receive less than seven percent of the farm extension services, less than ten percent of the credit given to small-scale farmers, and are generally undernourished, overworked, illiterate, and genuinely lack a voice in Kenyan society. All household activities are accomplished by women working 14 hours a day but most of the income from the sale of farm products go to men. Agricultural sector is a top priority but does not consider the gender dimension of agricultural livelihoods.Table 4.2 indicates the gender of the respondents.

| Gender | No. of Respondents | Percent | |
|--------|--------------------|---------|--|
| Female | 141 | 69.12 | |
| Male | 63 | 30.88 | |
| TOTAL | 204 | 100.00 | |
| | | | |

Table 4.2 Characteristics of Respondents by Gender

Table 4.2 indicates that 114 (69%) of females received the government's farm subsidies compared to 63 (31%) of their male counterparts. The statistics above imply that in East Karachuonyo Divison, more women than men engaged in subsidized agricultural activities. Women more often engage in agricultural activities in the rural areas as their male counterparts move to urban areas in search of employment. Most women also have a low purchasing power thus most likely to benefit from free or subsidized farm inputs distributed by the Agriculture Department on behalf of the government. On the other hand, most women believe in suchrural development ventures unlike men who dismiss them.

This study identified institutional gender bias in development programming leading to the acceptance of the need to address gender relations in land rights, resource control, credit, extension information, technology, and the division of labor. These findings are in line with aggregate data in a Food Agricultural Organization study which suggested African women produce 90% of the food crops, household water and fuel, do 80% of the food storage and transport work, do 90% of the hoeing and weeding, and 60% of the harvesting and marketing (Food Agricultural Organization , 2004).

4.3.2 Characteristics of respondents by Age

The ages of the respondents were of concern to the study as it assisted the researcher to identify their relevance to the study. 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 schools at the primary and secondary level and Kenyan youth, enjoying a relatively high level of literacy and capable of adopting new ideas, shun the curriculum that combines basic content with local farming practices leaving it to the older people. Thus the process of learning that ought to be socially imbedded for all generations and encourage long-term changes in behavior that improve food security is interfered with leading to food insufficiency.

The respondents were asked to state their ages and responses were captured in table 4.3

| Age | No. of Respondents | Percentage | |
|---------|--------------------|------------|--|
| ≤20 | 2 | 0.98 | |
| 21 – 30 | 20 | 9.80 | |
| 31 - 40 | 67 | 32.84 | |
| 41 - 50 | 102 | 50.00 | |
| ≥51 | 13 | 6.37 | |
| TOTAL | 204 | 100.00 | |

Table 4.3 Characteristics of the Respondents by Age

The table 4.3 shows that farmers under 20 years were 2 (0.98%), 21-30 years were 20 (9.8%), 31-40 years were 67 at 32.84% while those aged 41-50 were 102(50%) and those above 51 were 13 representing 6.37%. Thus the table illustrates that farmers of age 30 years and below did not receivemuch of the subsidies at only (22) 11%. This is because those in this age bracket, the youth, have a negative attitude towards farming as a means of livelihood. They perceive it as a dirty preoccupation. Moreover, majority of these youth are still either looking for employment opportunities or pursuing their education at various levels. Farmers between 41 – 50 years received the most subsidies at 50%, followed by farmers in the 31 - 40 age brackets at 33%. This is attributed to the fact that majority of rural dwellers in this age brackets have started families and there being no employment, have turned to farming as a source of livelihoods for their families.

4.3.3 Characteristics of respondents by Education Level

The study also looked into the educational background of the respondents as a factor influencing their ability to embrace subsidized farming to increase productivity thus ensuring food security. 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.(Food Agricultural Organization , 2004). In view of this the farmers were asked to give their education level and their responses were as illustrated in table 4.4.

| Education Level | No. of Respondents | Percent |
|------------------|--------------------|---------|
| KCPE and Below | 97 | 47.55 |
| KCSE | 65 | 31.86 |
| Certificate | 23 | 11.28 |
| Diploma | 12 | 5.88 |
| Degree and above | 07 | 3.43 |
| TOTAL | 204 | 100.00 |

Table 4.4 Characteristics of Respondents by Education Level

Table 4.4 indicates that farmers with KCPE and below were 97(47.55%), KCSE 65 (31.86%), certificate at 23 (11.28%), while diploma and degree were represented by 12 (5.88%) and 7 (3.43%) respectively. This implies that farmers with secondary qualification and below were the majority engaged in activesubsidized farming compared to those respondents with certificate, diploma and degree as they posted the highest frequency at 162 translating to 80% of respondents. This is attributable to the fact that those with primary and secondary education are jobless in the face of rising unemployment and more likely to rely on government's free or subsidized farminputs. This further points to the fact that small holder farming attracts less educated people who do not possess knowledge and skills required by the greatly competitive labor market. However, there were very few university graduates (3%) who received the

subsidies. Most university graduates shunned farming as most of them were well placed in white collar jobs. Well educated farmers were few as most of them had modest qualifications to secure the scarce formal employment opportunities.

This is in line with study findings by (Nompozolo, 2000) and (Bari, 1987) which pointed to education as the foundation of successful agricultural endeavor. The studies found out that higher the level of education of a farmer the more successful the farmer was likely to be. Both studies posited that education mostly improved the managerial ability by helping the farmer to emulate and execute farm plans and acquire information on how to improve marketing of the products. A sound educational background can reinforce natural talent and provide a basis for informed decision making (Oeffle & Koelle, 2003).

4.3.4 Characteristics of respondents by Marital Status

Marital statuses of the respondents were also sought as it hinges greatly on which type of economic ventures individuals engage in.Men are known to be bread winners in most African societies while women are caretakers of homes and children. Most women after the passing on of their husbands who are majorly the bread winners in most households, and being illiterate, resort to farming as a source of livelihood for their families. Having a low purchasing power and no assets to finance their agricultural undertakings, they solicit free or subsidized inputs from organizations offering such, government being the major one. Table 4.5 illustrates the various marital orientations and how the influenced the uptake of subsidized farm inputs offered by the government.

| Marital Status | No. of Respondents | Percent |
|----------------|--------------------|---------|
| Single | 17 | 8.33 |
| Married | 51 | 25.00 |
| Widowed | 136 | 66.67 |
| TOTAL | 204 | 100.00 |

Table 4.5 Marital Characteristics of the Respondents

Table 4.5 reveals that, 136 (67%) who stated that they received the subsidies were widowed, 51 (25%) were married, and 17 (8%) were single. This meant that the widowed, mostly women, received more subsidies as they were more vulnerable having lost their bread winners. Participation of widows in subsidized farming ensured to some extent food security for the households they head, households which could otherwise be dependent on other people for a living easing the burden on the community.

4.4 Access to information on the subsidy programme

Creating awareness through provision of information on products and services to the rural people is an essential component for development that the study considered. The study scrutinized methods of accessing information, how accessible the information on the government's subsidized programme is and the feedback mechanism used to get back information to the agency in charge.

4.4.1 Methods of information access to the government subsidy programme

The study investigated the various methods through which the respondents received information regarding the government's farm subsidy programme. Various methods were cited as shown in the table 4.6.

| Method of access | No. of Respondents | Percent |
|---------------------------|--------------------|---------|
| Provincial Administration | 154 | 75.49 |
| Mass Media | 7 | 3.43 |
| Social interaction | 40 | 19.60 |
| IEC materials | 3 | 1.48 |
| TOTAL | 204 | 100.00 |

 Table 4.6: Methods of access to information on the subsidy programme

Table 4.6 shows that the majority154 (76%) gathered information through the national security and coordination team i.e. through the Chiefs and Assistant Chiefs, 40 (20%) through social interaction and 7 (3%)through radios and televisions and a paltry 3 (1%). This meant that information in the rural areas is mostly disseminated using the national security and coordination team structure, which encompasses the Deputy County Commissioner, Division Officer, Chiefs and Assistant Chiefs followed by social interactions.

This is in line with the findings of a study done by (Tripp & Longely, 2006)who assert that enough information should be given to farmers repackaged in the language they will understand through an appropriate medium and given to them at the suitable time. In Rwanda, in a study by (Nyoro & Muiruri, 2001), the most effective medium that worked well was dubbed information onto cassettes disseminated through radio. In this study, the best medium that suited the rural farmer folk who benefited from the subsidized inputs was the former provincial administration staff, now interior security coordination team.

4.4.2 Accessibility to information on government's farm subsidy programme

The study also sought to know how accessible information on government's farm subsidy programme. Accessibility is paramount as it determines the number of people who will take up the subsidies. The table below illustrates the findings in table 4.7

| Accessibility | No. of Respondents | Percent |
|-----------------|--------------------|---------|
| Very accessible | 13 | 6.37 |
| Accessible | 25 | 12.26 |
| Less accessible | 71 | 34.80 |
| Not accessible | 95 | 46.57 |
| TOTAL | 204 | 100.00 |

Table 4.7 Accessibility to information on government's farm subsidy programme

The findings in table 4.7 revealed that majority of the farmers did not have access to information regarding the government's farm subsidy programme. This is shown by the majority 166 (81.37%) who opined that the information is either less accessible or not accessible. Those who thought the information was accessible were a paltry 25 (12%) with only 13 (6.4%) noting that the programme information was very accessible.

The study asserted that information access is a basic resource for farmers to improve their food security level as well as their living conditions as found out by (Bigman, 2002). In another review on poverty alleviation strategies (Okafor, 2000) backs up this finding in her review conducted in Nigeria where she found out that an effective subsidy programme promoting policy is successful only when it creates awareness among the farmers on the existence of the subsidies.

4.4.3 Feedback mechanism to the in charge agency

Provision of feedback is important as it provides an enabling environment for effective management of the programme by ensuring two-way channel of communication. This will go a long way in ensuring that everything runs within the set parameters and non-conformities identified and corrective action taken. Table 4.8 highlights the responses from farmers with regard to feedback mechanism.

| Feedback frequency | No. of respondents | Percent | |
|--------------------|--------------------|---------|--|
| Very frequent | 4 | 1.96 | |
| Frequent | 18 | 8.82 | |
| Less frequent | 82 | 40.20 | |
| Not frequent | 100 | 49.02 | |
| TOTAL | 204 | 100.00 | |

Table 4.8 Frequency of Feedback on the programme

The study found out that 4 (1.96%) of the farmers felt that the feedback was very frequent, 18 (8.82%) felt that the feedback was frequent while 82 (40.2%) and 100 (49.02%) opined that the feedback mechanism was less frequent and not frequent respectively. From the study, it is clear that there is infrequent feedback mechanism on the programme to the government agency concerned. This is because majority 182 (89%) of the respondents felt that provision of feedback to the government agency concerned is inadequate and ineffective. This is against 22 (11%) who felt that the feedback mechanism was adequate and effective. The programme thus has an infrequent feedback mechanism pointing to poor management and implementation of the entire programme. This led to low community involvement and poor stakeholder participation.

4.5 Influence of training of farmers on the use of subsidies

The government of Kenya recognizes that educating and training its citizens is fundamental to the success of the vision 2030 strategy (Ministry of Planning, National Development and Vision 2030, 2007). A literate population is an asset to the agricultural sector as it provides qualified personnel and opportunities for developing the sector. A knowledge-based economy creates, adopts and adapts information on production and distribution of goods and services, making it the focal point and engine for rapid agricultural growth.

Any agricultural development plan should therefore start with training of the target extension support during the project implementation. Farmers should have a great contact with various sources of relevant information which confirms the importance of knowledge in order to improve farming efficiency. Good performance and reasonable amount of information is necessary to back up agricultural productivity. In light of this, the farmers were asked to indicate whether they were trained on the use of subsidies or not. Their responses were as summarized in table 4.9

| Training of farmers | No. of respondents | Percent |
|---------------------|--------------------|---------|
| Yes | 61 | 29.90 |
| No | 143 | 70.10 |
| TOTAL | 204 | 100.00 |

Table 4.9 Training of farmers on subsidized inputs' use

The study revealed in table 4.9 that only 61 (30%) of the farmers had been trained whereas 143 (70%) were not trained on how to use the inputs. (Jiggins & Van den , 2007), suggest that before planting seasons farmers should be appraised on crop management techniques, fertilizers requirements and its application strategies to get maximum benefit and output. In the absence of such an appraisal, farmers lack the basic skills and knowledge on the use of the subsidized inputs provided by the government. This leads to low production and productivity thus food insecurity.

This finding also anchors around a study by (Muok, Kimondo, & Atshushi, 2001) in Uganda that found out that the more a farmer has been trained effectively and continuously the more successful the farmer becomes. Training thus improves the managerial ability by helping the farmer to emulate and execute farm plans and also acquire information on how to improve marketing of their products. Hence a sound training background reinforces natural talent and provides a basis for decision making.

4.5.1 Type of training given to beneficiary farmers

Training of the farmers using appropriate methods is of utmost importance as it improves productivity. Training is enhanced when various medium are used to promote easy understanding. This can be done using appropriate mediums or methods which vary from workshops, seminars, on farm training and demonstrations.

The training method chosen should prepare the farmers to be at ease and elucidate why the skill to be learned is important by explaining the content thoroughly; breaking it down into key parts or steps. The purpose of training sessions should focus on helping small holders optimize

their use of the inputs. Training topics should result from identified training needs as people cannot participate unless they have been motivated or made aware about changes they need for their welfare. These training needs have direct relevance to the needs of trainees and therefore enhance learning by adults such as farmers and extension agents.

The study thus sought to establish the type of training that the farmers were given and their responses were summarized and presented as in table 4.10 below

| Type/Method of training | No. of Respondents | Percent |
|---------------------------------|--------------------|---------|
| Informal | 92 | 45 |
| Workshop & seminars | 16 | 8 |
| Induction by extension officers | 49 | 24 |
| Field Demonstrations | 47 | 23 |
| TOTAL | 204 | 100.00 |

 Table 4.10 Type of training given to beneficiaryfarmers

Table 4.9 indicates that 92 (45%) received informal training informally through friends, (16) 8% received formal training in workshops and seminars, 49 (24%) through induction by the extension officers and 47 (23%) through field demonstrations. This implies that majority of farmers received informal training on the use of subsidies, and did not have requisite practical knowledge on how to use inputs and manage their farms.

This is in line with studies done by (Guo & Zhao, 2010) and (Bari, 1987) which established that most subsidy programmes that embraced an inappropriate training approach failed. An effective training method should demonstrate exactly how the task or skill is to be done by the farmers through involving the farmers by asking questions and getting feedback. It proceeds to give the farmer an opportunity to perform or do the task thus building the confidence in the learner. The trainer should ensure that the farmer does each step correctly to avoid getting wrong concepts. Finally the trainer should review the training process by providing honest feed back to the leaner in terms of encouragement, constructive criticism.

4.5.2 Frequency of training of farmers

Participation of rural people is essential for effective rural development thus people cannot participate unless they have been motivated or made aware about changes they need for their welfare. As such regular and frequent training and education play a vital role to make the rural people aware and acts as subjects in the development process.

| Frequency of training | No. of respondents | Percent |
|-----------------------|--------------------|---------|
| More regularly | 10 | 4.90 |
| Regularly | 25 | 12.25 |
| Less regularly | 169 | 82.85 |
| TOTAL | 204 | 100.00 |

Table 4.11 Frequency of training offered to beneficiary farmers

Table 4.11 shows that 169 (82.85%) of farmers are trained less regularly while 25 (12.25%) were regularly trained and only 10 (4.9%) underwentmore regular trainings. This meant that majority of the farmerswere trained irregularly on indigenous knowledge relevant to the farming activities they carriedout. This determined the sustainability of the development initiatives in the long run. It is the knowledge that the farmers gain from the extension officers that enable them to be sustainable and successful in the future. Therefore dissemination of information between the government and the small holder farmers on a regular basis is very significant in the achievement of the programme's success as established in a study by (Ali, Kathuri, & Wesonga, 2011).

4.6 Provision of farm inputs

Application of sufficient quantity of farm inputs especially seeds and fertilizer improves food quality since fertilizers are substances that supply plant nutrient or adjust soil fertility. Proper adequate fertilizer application will not only improve plant health and growth but it will save money and time thus ensuring food security. Table 4.12 analyzes the responses from farmers on the type, quality and quantity and regularity of farm inputs they received.

| Type of farm input | No. of respondents | Percent |
|--------------------|--------------------|---------|
| Fertilizer | 57 | 27.94 |
| Seeds | 137 | 67.16 |
| Equipment | 0 | 0 |
| Voucher | 10 | 4.90 |
| Insecticides | 0 | 0 |
| TOTAL | 204 | 100.00 |

Table 4.12 Type of farm input received as a subsidy from the Government

Table 4.12 shows that majority 137 (67%) of the farmers at received seeds while those who received fertilizer were 57 (28%). A paltry (10)5% received vouchers while none of the farmers received either insecticides or farm equipment. This means that the inputs mostly provided by government were seeds and fertilizers.

This is in line with study findings of (Gale, Lohman, & Tuan, 2005) in China where subsidies for high quality seeds were paid to seed supply companies, which were expected to pass on the subsidies to farmers. In another review by (Guo & Zhao, 2010) China later launched an altered subsidy program for agricultural production materials in which subsidies for each

farmer were a function of the fluctuating market prices of agricultural equipment and gain, as well as cultivated land area thus providing an incentive for farmers to grow grain.

Studies by (Banful, 2010b) and (Dorward, 2009) have also shown that in many African countries including Kenya, Tanzania, Malawi, Zambia and Ghana, the major inputs in their subsidy programmes are fertilizers and certified seeds. The Malawian government pioneered the return to large- scale subsidies in 1998 when it began distributing free fertilizer to farmers (Banful, 2010b) while Zambia, at the start of the 2002/3 agricultural season, sought to break from earlier programmes that focused less on direct subsidies and more on controlling input prices and making sure that inputs were available to smallholders through state-managed production and distribution (Dorward, 2009).

In Kenya, the Ministry of Agriculture in 2007, released a policy statement on promoting sustainable and competitive agriculture through formulation of agricultural policies aimed at promoting agricultural technology, provision of extension and regulatory services for agricultural development in order to attain food security for all Kenyans (Ministry of Agriculture, 2008). In line with this, countrywide agricultural subsidies to increase farmer's productivity and incomes to enhance food safety were introduced by the government in the form of free seeds and fertilizer.

4.6.1 Receipt of inputs by farmers

The study also sought to establish how often beneficiary farmers received the inputs. Table 4.13 below illustrates the findings of the study with regard to regularity.

| Regularity of input | No. of respondents | Percent |
|---------------------|--------------------|---------|
| More often | 20 | 9.80 |
| Often | 71 | 34.80 |
| Less often | 112 | 55.40 |
| TOTAL | 204 | 100.00 |
| | | |

 Table 4.13 Regularity of receipt of inputs by farmers

Table 4.13 depicts that 20 (9.8%) of farmers felt that the subsidies were received more often, 71 (34.8%) felt the subsidies came often and 112 (55.4%) opined that they received the seeds and fertilizer less often. The study, in table 4.13 above, thus revealed that the inputs are most of the times received less often at 55% compared to 45% for more often and often. This infrequent supply of inputs to the beneficiary farmers makes ithard to achieve food security.

4. 6.2 Quality and Quantity of inputs to beneficiary farmers

The study sought to assess how the provision of quality inputs in their right quantities influenced food security in East Karachuonyo. The findings are highlighted in table 4.14 as shown below.

| Required quality & quantity | No. of respondents | Percent |
|-----------------------------|--------------------|---------|
| Yes | 3 | 1.47 |
| No | 201 | 98.53 |
| TOTAL | 204 | 100.00 |

Table 4.14Required Quantity and Quality of inputs

From the table 4.14, 201 (99%) of the beneficiary farmers overwhelmingly opined that they received inadequate quantities and poor quality of inputs while 3(1%)thought the quality and quantity of inputs they received were right given the sizes of their farms and soil types in East Karachuonyo. The quantities issued were way below the needs of any individual farmer as the government sought to spread the subsidies programme wide and thin to cater for as many needy farmers as possible. Most farmers got meagre quantities of the seeds and just a handful of fertilizer against massive land acreages. Some farmers with more than an acre of land only received two dishes of maize or bean seed and about only 2 kilograms of just one type of fertilizer. This meantthat the yields would definitely be low thus food security not achievable.

This is in accordance to a study by (Iken & Amusa, 2004) which affirmed that application of inputs like fertilizer should not be seen as a goal in isolation. The broader goal is application of sufficient quantity of fertilizer since fertilizers are substances that supply plant nutrient or adjust soil fertility and food quality is definitely improved by adequate use of fertilizers. Another consideration for quantity of fertilizer and seeds to be used on a farm is the size of farm so as to ensure that sufficient quantity of seeds and fertilizer are applied as per the required measures.

4.7 Time of distribution of subsidies

The main aim of the Kenyan government's first subsidy programme in more than ten years was to help farmers offset their costs of purchasing maize seeds and fertilizer, but the programme has been mired with problems ever since. Complicated bureaucratic requirements and delayed import of government-subsidized fertilizer have caused Kenyan farmers to postpone time of planting of crops, potentially putting the food security of the country at risk. Late distribution of the subsidies is among the barriers that are hampering food production as most farmers plantas late as April because they were relying on the cheap seeds and fertilizer.

4.7.1 Timely distribution of farm subsidies

Timely planting using fertilizer allows the germinating seeds to benefit from the nitrogen flux effect which occurs with the first rains. The germinating seeds will also benefit from the warm soil temperature and good aeration thereby escaping pests and diseases which minimize agricultural yield. When subsidies are distributed early, farmers will plant early and harvest promptly thus allowing land preparation for the next cropping season. Prompt harvesting also allows the farmers to store their produce on time thus reducing post-harvest losses.

In order to determine how the time of distribution of the farm inputs influenced food security in East Karachuonyo Division, the study sought to find out whether the subsidies were distributed on time or not. It further solicited responses to ascertain the exact time of distribution; whether they were distributed before planting, at the on-set of planting or after the stipulated planting time. The study findings are illustrated in table 4.15.

| On time distribution | No. of respondents | Percent |
|----------------------|--------------------|---------|
| Yes | 8 | 3.92 |
| Before planting | 2 | 0.98 |
| Onset of planting | 6 | 2.94 |
| No | 196 | 96.08 |
| After planting | 196 | 96.08 |
| TOTAL | 204 | 100.00 |

 Table 4.15 On-time distribution of inputs

From table 4.15, the study showed that merely 8 (4%) of beneficiary farmers received the inputs on time while 196(96%) received them late. It is thus evident from the study that majority of the farmers did not receive the inputs, mainly fertilizers and seeds, on time. This delay has serious repercussions the amount and quality of yield the farmers achieve at harvesting since the seeds miss the most crucial rains needed for germination.

Of the 4% who said that they receive the inputs on time, 2 (1%) affirmed that they received the inputs before planting while 6 (3%) received the inputs at the onset of planting. A majority 196 (96%) of those who did not receive the inputs on time said that they received them after planting. This meant that the crops lagged behind in growth missing out on stages when they needed rain the most thus meagre harvest which led to food insecurity. When subsidies are distributed early, farmers will plant early and harvest promptly thus allowing land preparation for the next cropping season (Kiiya, Ndung'u, Onyango , Lunzalu, & Mulati, 2005).

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter provides a summary of the main findings of the study and presents significant conclusions to the study. It also captures the contribution the study has made to the body of knowledge and gives recommendations on the influence of the provision of farm subsidies by the government on food security. The chapter closes by giving suggestions for further research.

5.2 Summary of study findings

The summary of the findings of the study conducted in East Karachuonyo Division, Rachuonyo North Sub – County, Homa-Bay County are as below:

The findings of the study revealed that gender had a significant influence on the distribution of subsidies. Majority of small holder farmers were females at 69%. Their male counterparts were less enthusiastic aboutsmall holder farming at only 31%. This was attributed to the fact that most men migrate fromrural to urban areas in search of employment and did not embrace such rural developmental initiatives as females who had low purchasing powerdid.

The studyestablished that majority of the farmers were aged 41 to 50 years at 50%. This is because at this age most of them have stable families and have resorted to farming as a means of providing for their families due to unemployment. However, there were very few farmers of age 30 and below. This is because these are the youth who are still either in school or searching for jobs. Most of them are yet to settle down and perceived farming as a dirty occupation thus did not identify with it as a means of livelihood.

The study asserted that small holder agriculture attracted less educated people without requisite knowledge and skills for the highly competitive job market. Most degree holders were in gainful employment and embraced subsidized farming the least at 3% as most of them could either afford farm inputs or into white collared ventures. The study also found out that most beneficiaries of government's subsidized farming were widows 67% made vulnerable by the loss of their family bread winners.

Access to information is one of the variables that influence the use of governments' agricultural subsidies on food security. Most farmers at 75% accessed information about the programme from the national coordinating and interior security team. The former provincial administration structures proved to be the most effective medium of disseminating information in rural set ups. In addition to this, information about the programme was not very accessible to the farmers since only 19% of farmers interviewed agreed that the information was accessible to them. Feedback of the programme was infrequent at 89%. This connoted there was no proper feedback apparatus put in place.

One of the outstanding findings of the study is that farmers need regular and consistent tailormade trainings on the use of subsidies. Most farmers lacked requisite knowledge and skills on how to use subsidized inputs provided by the governmentwith only 30% getting training. Most farmers received informal training through friends at 45% with majority83% trained less regularly. This led to low production and productivity thus food insecurity.

The study also found out that the major type of subsidized input received by most farmers from the governmentis certified seeds at 67% followed by fertilizers at only 28%. Also they received insufficient quantities and poor quality inputs given the sizes of their farms and soil types. Hence most farmers planteduncertified seeds without fertilizers which affect the output.

This study notably revealed that the government did not distribute the subsidies at the right time during the planting season i.e. at the onset of rains, making the farmers to plant without fertilizers or use non certified seeds which in the end led to low yields.

5.3 Conclusions

The study concluded that more female farmers of age 41 - 50 years benefitted from the free government distributed farm subsidies. It was evident that the higher the education level the of the farmer, the lesser the likelihood that the farmer, if at all, benefitted from these subsidies as small holder farming attracted less educated people. It was also notable that majority of beneficiary farmers were widowed having lost their breadwinners.

On access to information, the study concluded that information about government's farm subsidies was still largely inaccessible by most rural folks who depended mostly on the provincial administration (formerly) structures as an effective medium of accessing information. The study also concluded that the programme has an infrequent feedback mechanism pointing to poor management and implementation of the entire programme which has led to low community involvement and poor stakeholder participation.

The study also concluded that there is no effective and consistent training on the use of subsidized farm inputs as most farmers relied on friends and other informal methods for training. The few farmers who got some training got it less regularly impacting negatively on their productivity. Farmers majorly receivedcertified seeds and fertilizers but in meagre quantities without regard to the farm sizes and competing farmer interests. These inputs were never distributed to the farmers on time to cash in on the rains at the onset of the planting season.

Over all, the study concluded that, whereas this subsidy programme has been the largest food security project undertaken by the Kenyan Ministry of Agriculture, there is need for an integrated approach to promote effective management and control of sustainable and competitive agriculture in terms of agriculture technology, provision of support training through extension and regulatory services for agricultural development in order to attain food security for all Kenyans. Given anappropriatesituation and adequate support, farmers in East Karachuonyo Division can create, adopt and adapt information on production and distribution of goods and services, making it the focal point and engine for rapid agricultural growth thus realizing food security and enhancing their livelihoods.

5.4 Recommendations

In line with the findings and conclusions of the study, the following were the recommendations as per the objectives.

5.4.1 Recommendations for policy action

The table below summarizes the recommendations that may guide policy action for the improvement of the programme and achievement of maximum impact.

| Research Objective | Study Finding | Recommendation for policy action |
|---|--|--|
| To examine how access to information of the subsidy programme influence food security in East Karachuonyo Division | Information not accessible to farmers on a regular basis and there is also an infrequent ineffective feedback mechanism on the control of the programme | Upscale accessibility of information on the programme by: Instituting afrequent working feedback mechanism that gives insights for improvement and community participation in the entire programme. |
| | | Production of IEC materials and radio and television programmes in local language to for content delivery to nest more farmers in the catchment area |
| To establish the extent to which training of farmers on the use of subsidies influence food security in East Karachuonyo Division | There is no formal consistent training on subsidies us | Institute an appropriate and relevant training scheduled more regularly to enable farmers gain skills on correct use of inputs |
| To assess the extent to which provision of farm inputs influence food security in East Karachuonyo Division | Insufficient quality and quantities of subsidized inputs given to farmers; planting uncertified seeds with no fertilizer | Right quantity and quality of inputs that suit farmers' agro- climatic parameters and interests. Also provide equipment and pesticides for maximum impact |

Table 5.1 Recommendations for policy action

| To determine extent to which | Subsidized inputs not | On- time distribution of |
|-------------------------------|------------------------------|-----------------------------------|
| time of distribution of the | distributed during the | subsidies to enable seeds to |
| farm subsidies influence food | planting season at the onset | germinate on time and escape |
| security in East Karachuonyo | of rains | pests thus high yield |
| Division | | |
| | | Government should establish |
| | | depots at the county level so |
| | | farmers can collect consignments |
| | | of seed and fertilizer faster and |
| | | speed up the delivery. |
| | | |

The above recommendations should be amalgamated into one comprehensive and integrated approach that ensures all the studied factors are addressed to ensure sustainable and competitive agriculture leading to food security.

5.4.2 Recommendations for further research

The following were the recommendations for further research

- i. To what extent do other subsidized schemes by other development partners contribute to, and impact on food security in East Karachuonyo Division?
- ii. How do the changing rainfall patterns, effects of global warming and climate change influence food security in East Karachuonyo Division? What about other regions in Kenya and the country as a whole?
- iii. To what extent do the subsidy related factorsfactors influencing food security in East Karachuonyo Division applicable to other regions in Kenya?

5.5 Contribution to body of knowledge

The table below tabulates how this study contributes to the body of knowledge in research

| Research Objective | Contribution to body of knowledge |
|---|---|
| To examine how access to information of the subsidy programme influence food security in East Karachuonyo Division | Former Provincial Administration the most effective medium of information access to the rural folk Information on the subsidy programme majorly inaccessible Feedback is infrequent |
| To establish the extent to which training of farmers on the use of subsidies influence food security in East Karachuonyo Division | Majority of small holder farmers not trained The few who are trained are trained informally and less regularly |
| To assess the extent to which provision of farm inputs influence food security in East Karachuonyo Division | The main subsidized inputs provided are certified seeds and fertilizers These subsidies are received less often and not in the right quantities and quality |
| To determine extent to which time of distribution of the farm subsidies influence food security in East Karachuonyo Division | Most subsidies distributed after the planting time Most farmers plant uncertified seeds without use of fertilizers |

Table 5.2 Contribution to body of knowledge

REFERENCES

- Ali, A. O., Kathuri, N., & Wesonga, T. O. (2011). Efficiency extension methods for increased food production in Kakamega District. *Journal of Agricultural Extension and Rural Development* 3(5), 95-101.
- Arumugan, K. (2011). Strategies for sustainable crop intensification in Rwanda: Shifting focus from producing enough to producing surplus. Kigali, Rwanda.
- Banful, B. A. (2009). Operational Details of the 2008 Fertilizer Subsidy in Ghana Preliminary Report GFSP Background Paper 18. Washington D.C.: IFPRI.
- Banful, B. A. (2010b). Old Problems in the New Solutions? Politically Motivated Allocation of Program Benefits and the "New" Fertilizer Subsidies. Washington D. C.: International Food Policy Research Institute - Development Strategy and Governance Division.
- Bari, M. (1987). Training and Education in Rural Development. Dhaka: Bangladesh Institute of Development Studies.
- Bezabih, E., Hadera, G., & Nigatu, R. (2010). Impacts of improved seeds and agrochemicals on food security and environment in the Rift Valley of Ethiopia: Implications of application of an African Green Revolution. DCG Report No. 56. Netherlands: Drylands Coordination Group.
- Bigman, D. (2002). *Globalization and the developing countries: Emerging strategies for rural development and poverty alleviation*. Hague, Netherlands: CABI Publishing.
- Borg, W. R., & Gall, M. D. (1989). *Educational research: an introduction, 5th Edition*. White Plains, NY: Longman.
- Bosire, B. (2013). Delays mire Kenya's farm subsidy programme. Nairobi.
- Chambers, R. (1995). Poverty and Livelihoods:whose Reality Counts? IDS Discussion Paper 347. Brighton, UK: IDS.

- Chambers, R., & Conway, G. R. (1991). Sustainable Rural Livelihoods. Practical concepts for the 21st century. University of Sussex; Brighton: Institute of Development Studies DP 296.
- Cheng, Y. (2006). State and farmer: Public products supply role and function locating. *Journal of Huazhong Normal University (Human and Social Sciences) - 3*, 2-6.
- DFID. (1999). Sustainable Livelihoods Guidance Sheets. London: DFID.
- Dorward, A. (2008). *Towards smart subsidies in agriculture: Lessons from recent experience in Malawi*. London: Oversees Development Institute.
- Dorward, A. (2009). *Rethinking Agriculture Input Subsidy Programmes in a Changing World*. London: School of Oriental and African Studies.
- Dreze, J. (2007). *Food Security and the Right to Food. Towards a Food Secure India.* New Delhi: Institute of Human Development.
- Food Agricultural Organization . (2004). Agricultural Development and Food security in Kenya.
- Gale, F., Lohman, B., & Tuan, F. (2005). *China's new farm subsidies*. USDA: Economic Research Service.
- Gao, H. (2008). Main policies and measures of China to safeguard food security. Beijing.
- Gay, L. R. (1996). *Educational Research, Competencies for Analysis and Application*. New Jersey: Prentisce Hall Inc.
- Government of Kenya . (2010). *Agricultural Sector Development Strategy 2010-2020*. Nairobi: Government Printers.
- Guo, C., & Zhao, G. (2010). Evaluation of the efficiency of direct food subsidy policy in China based on institutional economics. *Chinese Agricultural Mechanization*, 91-93.
- Hoffler, H., & Owuor, B. (2009). *High Commodity Prices who gets the money*. Nairobi: Initiative Publishers.

- Holland, J., & Blackburn, J. (1998). Whose Voice? Participatory Research and Policy Change. London: IT Publication.
- Hussein, K., & Nelson, J. (1998). Sustainable Livelihoods and Livelihood diversification IDS Working Paper 69. Brighton, UK: IDS.
- Iken, J. E., & Amusa , N. A. (2004). Maize research and production in Nigeria. African journal of biotechnology 3(6), 302-307.
- Jiggins, & Van den , B. H. (2007). Investing in farmers The impact of farmers field schools in relation to integrated pest managemnt. *World Development* (4), 35.
- Kaplan, R. M., & Saccuzzo, D. P. (2001). Psychological Testing: Principles, Applications and Issues (5th Edition). Belmont, CA: Wadsworth.
- Kasomo, D. (2007). *Research Methods in Humanities and Education. Revised Edition.* Zapt Chancery Research Consultations and Publishers.
- Kenya Agricultural Research Institute. (2012). *Policy Responses to Food Crisis in Kenya*. Washington D.C: IFPRI, Food Security Portal.
- Kiiya, W., Ndung'u, F., Onyango, R., Lunzalu, E., & Mulati, J. (2005). *Maize varieties, soil fertility improvement and appropriate agronomic practices for highland, midland amd lowland areas of the Roft Valley.* Kitale: KARI.
- Kothari, C. R. (2004). *Research Methodology: Methods and Techniques 2nd Edition*. New Delhi: New Age International Publishers Ltd.
- Koul, A. K. (1986). Mathematical statistics and Probability Theory, Volume A.
- Miles, M. B., & Huberman, A. M. (1994). *Quantitative Data Analysis 2nd Edition. Thousand Oaks.* CA: Sage Publications.
- Ministry of Agriculture. (2008). *ISO 9001:2008 Quality Based Management Systems*. Nairobi, Kenya: Government Printers.
Ministry of Agriculture. (2013). Rachuonyo North Annual Report. Nairobi: Government Press.

- Ministry of Planning, National Development and Vision 2030. (2007). *Kenya Vision 2030*. Nairobi, Kenya: Government Printers.
- Minter, W. (2005). Subsidies that work. Malawi: African Focus Bulletin.
- Mugenda, & Mugenda. (2003). *Research Methods: Quantitative and Qualitative Approaches*. Nairobi: Acts Press.
- Mugenda, & Mugenda, G. (1999). *Research Methods. Quantitative and Qualitative Approaches.* Nairobi: Acts Press.
- Munyaga, J. M. (2006). Agricultural extension in Kenya: Practice and policy lessons working paper 26/2006. Nairobi: Tegemeo Institute of Agricultural Policy and Development, Egerton University.
- Muok, B., Kimondo, J., & Atshushi. (2001). Farmer extension: Experience in dry lands in Kenya
 Assisting forest owner, farmer and stakeholder decision making. Lorne, Australia: International Union of Forestry Research Organization.
- Nompozolo, S. (2000). Analysis of the Characteristics and Constraints of Smallholder Commercial Farmers in Eastern Cape, South Africa. Eastern Cape, South Africa.
- Nyoro, J., & Muiruri, H. (2001). Policies for Agricultural Sustainability in Kenya: A case study report for the policies that work for suitable Agriculture and regenerating rural economies. Nairobi, Kenya: Tegemeo Research institute.
- Republic of Rwanda. (2009). *Rwanda Statistical Year Book*. Kigali: National Institute of Statistics of Rwanda.
- Summer, D. A. (2008). Agricultural subsidy programs. Summerain City-State: Liberty Funds Inc.

- T.S., J., Valerie, K. A., & Crawford, E. W. (2006). Alternative Approaches for Promoting Fertilizer Use in Africa; Agriculture & Rural Development Discussion 22. Washington D.C.: The World Bank.
- Tambwe, A. (2012). Tracking food security in Tanzania. Tanzania.
- Thurow, R. (2010). Agricultural policilies in organization for economic cooperation and development of countries at a glance. Paris: OECD.
- Tripp, R., & Longely, C. (2006). Self-Sufficient Agriculture, Labour and Knowledge in small scale farming. London: Earthscan.
- UNDP. (2002). WSSD; World Summit on Sustainable Development. Johannesburg: UNDP.
- World Bank. (2007). World Bank Report No. 39881-RW: Promoting pro-poor agricultural growth in Rwanda: Challenges and Opportunities. Washington D.C.: World Bank.
- World Bank. (2010). Zambia Impact Assessment of the Fertilizer Support Program: Analysis of the Effectiveness and Efficiency. Africa Region: World Bank, Report No. 54864.
- World Food Summit. (1996). Rome Declaration on Food Security. Rome.
- Wright, B. (1995). Goals and realities for farm policy: Agriculture policy reforms in the United States. Washington D.C.: AEI Press.
- Yawson, D. O., Fredric, A. A., Ernest, K. A., & Samwuel, K. D. (2010). Ghana's Fertilizer Subsidy Policy: Early Field Lessons from farmers in the Central Region. *Journal of Sustainable Development In Africa 12(3)*, 191-203.

APPENDICES

Appendix I: Letter of Transmittal

OnyangoDeurenceAdhiambo, P.O. Box 136, KOSELE. 11th March, 2013. E-mail:deurence.adhiambo@gmail.com Mobile No: +254 723 204 969

Dear Sir/Madam,

RE: USE OF GOVERNMENT'S AGRICULTURAL SUBSIDIES ON FOOD SECURITY IN EAST KARACHUONYO DIVISION; HOMA-BAY COUNTY.

I am a post graduate student at the University of Nairobi – Kisumu Extra Mural Centre; carrying out a research project for the Master of Arts in Project Planning and Management on the above stated topic.

I humbly request you to assist me by filling in the designed questionnaire as accurately as possible. The information you will provide will be used strictly for academic purposes and treated with utmost confidentiality. You are therefore requested to avoid disclosing your identity in this document

Thanks in advance for your cooperation in this crucial exercise.

Yours Faithfully,

OnyangoDeurenceAdhiambo

Appendix II: Questionnaire for Farmers Introduction

Hello, my name is ______. I am here to collect data on the influence of government farm subsidies on food security in East Karachuonyo Division. For the purpose of this study, you will be asked questions in six sections. All the information volunteered will be treated with utmost confidentiality. You may refuse to answer any question that you are not comfortable with and you will not be penalized. Nevertheless, open and sincere responses to the questions will be very much appreciated. Do I have you permission to continue?

Instructions

This questionnaire is divided into six sections A to F. Please fill the blank spaces provided or put a tick ($\sqrt{}$) where necessary.

Section A. Demographic characteristics of the respondent

- 1. What is your gender?
 - □ Male
 - ☐ Female
- 2. Indicate your age
 - \Box Below 20
 - 21 30
 - □ 31 40
 - □ 41 50
 - \Box Above 50
- 3. What is your educational level?
 - □ Below &KCPE
 - \Box KCSE
 - □ Certificate
 - □ Diploma
 - □ Degree& Above
- 4. Give your marital status
 - □ Single
 - □ Married
 - □ Widowed
 - □ Others, Specify_____

Section B: Access to information of the subsidy programme

1. How do you access information about government's agricultural subsidy programme in

your area?

- Through National coordination and Interior Security (provincial administration)
- \Box Mass media (radio, TV)
- \Box Social interaction
- □ IEC Materials (posters, brochures)
- 2. How accessible is the information about government's agricultural subsidy program in

your area?

- \Box Very accessible
- □ Accessible
- \Box Less accessible
- \Box Not accessible
- 3. Do you have a provision of giving feedback to the government agency in charge of the

programme?

□ Yes

□ No

- 4. If yes, give the frequency of giving a feedback.
 - □ Very frequent
 - □ Frequent
 - □ Less frequent
 - □ Not frequent
- 5. Explain how accessibility to information about government's agricultural subsidy programme influence food security in your area

Section C: Training of farmers on the use of subsidies

- 1. Are you trained on use of subsidies?
 - □ Yes
 - □ No
- 2. If yes, indicate the type of training
 - □ Informal
 - □ Workshop & seminars
 - \Box Induction by extension officers
 - □ Field demonstrations
- 3. How often is training done? Tick appropriately
 - \Box More regularly
 - □ Regularly
 - □ Less regularly
- 4. Does training influence the use of government's agricultural subsidies in addressing food security in your area?

 - □ Yes
 - □ No
- 5. If yes, explain how training on the use of subsidies contributes to food security in your area.

Section D: Provision of farm inputs

- 1. Which type of input you have received as an agricultural subsidy from the government?
 - □ Fertilizer
 - □ Seeds
 - □ Farm equipment
 - □ Voucher
 - □ Insecticides
 - □ Others, (specify)_____
- 2. How often do you receive such inputs?
 - \Box More often
 - □ Often
 - \Box Less often
- 3. Are the inputs always in right quantity and quality?
 - □ Yes
 - □ No
- 4. Explain the contribution of farm inputs to food security in you area

Section E: Time of distribution of subsidies.

- 1. Are the subsidies distributed on time during the planting season?
 - □ Yes
 - □ No
- 2. Indicate the time of planting season when the subsidies distributed in your locality
 - □ Before planting
 - \Box Onset of planting
 - □ After planting
- 3. Does the time of distribution of subsidies influence food security in your area?
 - □ Yes
 - □ No
- 4. If yes, briefly explain the extent to which this is true

Section F. Challenges and suggested solution

 What are the challenges faced in the use of government subsidies in ensuring food security?

2. What solution would you suggest to enhance efficiency and success of the above programme?

Thank you for your cooperation.

Appendix III: Interview Schedule

Introduction

Hello, my name is ______. I am a research assistant, here to collect data on behalf of Onyango Deurence Adhiambo who is undertaking her Master of Art degree in Project Planning and Management at the University of Nairobi and currently conducting her research work on the influence of government farm subsidies on food security in East Karachuonyo Division. Importantly, for the purpose of this study, I will ask specifically about the performance of government's agriculture subsidies, suggestions on how this programme can be improved and the challenges you face under the programme.

This discussion will take about one hour. Your participation in this interview is completely voluntary and anonymous, and you will not be compensated for your time. You may refuse to answer any question that you are not comfortable with and you will not be penalized. Nevertheless, open and sincere responses to the questions will be very much appreciated. If you wish, you may stop this interview at any point.

Do you have any questions at this time? If you have any questions after our discussion, please do not hesitate to contact Onyango Deurence Adhiambo, phone number – 0723 204 969, email - deurence.adhiambo@gmail.com

Do I have your permission to continue?

1. What is your current position/designation in the Agriculture Department within the District?

- 2. What policies and/or regulation guide the implementation of the government's farm subsidy program?
- 3. How is planning and implementation of the program done in the District? National viz-aviz grassroots planning and/or implementation?
- 4. How do you view the performance of the government subsidy programme in curbing food crisis in your extension area?
- 5. What should be done to improve the performance of the programme to achieve its goal of enhancing food security?
- 6. How does the Agriculture sector within the District react to this program?
- 7. What are the challenges that you face as a government agent in the programme?
- 8. Suggestions on ways of improving the success of the programme in the division?

Thank you for your cooperation.

Appendix IV: Krejcie and Morgan Table for Determining Sample Size from a Given Population

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

Note:-

N is population size. *S* is sample size.

Appendix V: Approval Letter



UNIVERSITY OF NAIROBI COLLEGE OF EDUCATION AND EXTERNAL STUDIES SCHOOL OF CONTINUING AND DISTANCE EDUCATION

Our Ref.: UON/CEES/KSM/1/16

University of Nairobi Plaza, Oginga Odinga Street P.O. BOX 825, KISUMU.

Telephone: Kisumu 057-2021534

26th June 2014

TO WHOM IT MAY CONCERN

RE: ONYANGO DEURENCE ADHIAMBO- REG NO: L50/84292/2012

This is to confirm to you that the above named **Onyango Deurence Adhiambo** is a student of The University of Nairobi pursuing masters in project planning and management at Kisumu Campus.

Deurence has completed her course work and examination successfully and is now undertaking her research work which is a pre-requisite for the course. The research is entitled *"Influence of government's farm subsidies on food security in east karachuonyo division, homabay county, kenya."*. The purpose of this letter therefore is to request you to allow the student to access the data or information she may need for purpose of this study. The data is required for her academic purposes only and not for any other reasons.

We would appreciate any assistance that may be given to enable her carry out the study.

Yours faithfully. DR. RAPHAEL ONDEKO NYONJE RESIDENT LECTURER KISUMU CAMPUS

> ISO 9001: 2008 CERTIFIED The Fountain of Knowledge Providing Leadership in Academic Excellence

Appendix VI: Research Clearance Permit

