

**FACTORS INFLUENCING PRODUCTIVITY OF POTATO  
FARMING PROJECTS IN KABONDO KASIPUL SUB COUNTY,  
HOMABAY COUNTY**

**BY:**

**HELLEN AWUOR OWINO**

**A RESEARCH PROJECT REPORT SUBMITTED IN PARTIAL FULFILLMENT OF  
THE REQUIREMENTS FOR THE AWARD OF A DEGREE OF MASTER OF ARTS IN  
PROJECT PLANNING AND MANAGEMENT, UNIVERSITY OF NAIROBI**

**2014**

## DECLARATION

This research project report is my original work and has never been presented for a degree or any award in any other University.

Signature \_\_\_\_\_

Date \_\_\_\_\_

Hellen Awuor Owino

L50/ 70183 /2013

This research proposal has been submitted for examination with my approval as the University Supervisor.

Signature \_\_\_\_\_

Date \_\_\_\_\_

Mr. Onuonga G.Odhiambo

Lecturer, University of Nairobi

## **DEDICATION**

I dedicate this research project report to my husband, Richard Otieno Opiyo for his financial support and moral encouragement in the entire research process. I also dedicate this study to my children, Betty Atieno , Joy Achieng, Lencer Akinyi, Linda Adongo, rose Akelo, Zawadi Masika and Ketty Soniah, for offering me their moral support.

## **ACKNOWLEDGEMENT**

It is crucial to identify, in a special way, key persons whose contributions in different measures count a great deal in the development of this research project report. To begin with, I salute the tireless effort of my research supervisor; Mr. Onuonga G Odhiambo. He was always available at my request and often put his other engagements at stake to see me through my research undertakings by offering professional advice, guidance and healthy criticisms. I also appreciate the role played by my various course lecturers in this challenging field of academia. In this category, I salute Mr. Awino Joseph Oluoch, Dr. Mwanda Samwel, Mr. Otundo Enock, Mr. George Ogari and Mr. Peter Onsembe, for they held my hands tenderly and let me through the turbulent waters of academic endeavors to achieve a standing ovation.

Besides, I also find it prudent not to ignore my colleagues at the University of Nairobi, Master of Arts in Project Planning and Management Class of 2014, for always being available whenever I encountered challenges during the course of my studies. They offered a range of support from exchange of reading materials, reviewing my research work, as well as offering accompaniment for facing threatening academic challenges, anyone else is bound to encounter in academic modeling. Those colleagues include, Onserio Vincent, Jackson Limaris and Michael Amuge. Worth acknowledging, just like others already mentioned is Joyce Chelangat, for typesetting this work with utmost dedication, my research assistants; Daniel Ochieng and Joshua Awino, for administering the research instruments to the respondents diligently and professionally. All the respondents are also recognized, for without their cooperation in giving information honestly and objectively, this work would fail academic credibility.

<b>TITLE</b>	<b>TABLE OF CONTENT</b>	<b>PAGE</b>
DECLARATION.....		i
DEDICATION.....		ii
ACKNOWLEDGEMENT.....		iii
TABLE OF CONTENTS.....		.iv
LIST OF FIGURES .....		vii
LIST OF TABLES.....		viii
LIST OF ABBREVIATIONS & ACRONYMS.....		ix
ABSTRACT.....		xi

**CHAPTER ONE**  
**INTRODUCTION**

1.1 Background of the study.....	1
1.2 Statement of the problem.....	4
1.3 Purpose of the study.....	5
1.4 Objectives of the study.....	5
1.5 Research Questions.....	6
1.6 Significance of the study.....	6
1.7 Limitations of the study.....	7
1.8 Basics assumptions of the study.....	7
1.9 Delimitations of the study.....	8
1.9.1 Definition of significant terms as used in the study.....	8
1.10 Organization of the study.....	9

**CHAPTER TWO**  
**LITERATURE REVIEW**

2.1 Introduction.....	11
2.2 Concept of productivity of potato business.....	11
2.3 Influence of training on value addition on productivity of potato farming projects.....	14
2.4 Influence of resource mobilization on productivity of potato farming projects.....	20
2.5 Influence of marketing strategies on productivity of potato farming projects.....	22
2.6 Influence of preservation and storage on productivity of potato farming projects.....	25
2.7 Theoretical framework of the study.....	26
2.8 Conceptual framework of the study.....	27
2.9 Summary of literature review.....	30

**CHAPTER THREE**  
**RESEARCH METHODOLOGY**

3.1 Introduction.....	31
3.2 Research design.....	31
3.3 Target population.....	32
3.4 Sample size and sample selection.....	32
3.5 Data collection instruments.....	33
3.5.1 Instruments pretesting.....	33
3.5.2 Instruments validity.....	34
3.5.3 Instrument reliability.....	35
3.6 Data collection procedures.....	36
3.7 Methods of Data collection .....	36

3.8 Methods of data analysis.....	36
3.9 Operationalization of the variables.....	38

## **CHAPTER FOUR**

### **DATA ANALYSIS, PRESENTATION AND INTERPRETATION**

4.1 Introduction.....	42
4.2 Questionnaire Return Rate.....	42
4.3 Demographic characteristics of the respondents.....	43
4.4 Professional training and potato productivity .....	47
4.5 Diversity of resources and potato productivity.....	50
4.6 Marketing strategies on productivity of potato farming projects.....	52
4.7. Influence of preservation and storage on productivity of potato farming projects....	56

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, CONCLUSSION AND RECOMMENDATIONS**

5.1 Introduction .....	60
5.2 Summary of the study findings. ....	60
5.3 Conclusion .....	64
5.4. Recommendations.....	65
5.4.1 Recommendations for policy formulation.....	65
References.....	67

## LIST OF FIGURES

2.1 Conceptual Framework.....	28
-------------------------------	----

## **LIST OF TABLES**

3.1 Total and Sample Sizes of the Study Population.....	33
---	----

## **LIST OF ABBREVIATIONS AND ACRONYMS**

<b>UNDP</b>	: United Nations Development Programme
<b>IMF</b>	: International Monetary Funds
<b>WEDF</b>	: Women Enterprise Development Fund
<b>YEF</b>	: Youth Enterprise Fund
<b>SPSS</b>	: Statistical Package for Social Scientists
<b>DFRD</b>	: District Focus for Rural Development
<b>MS</b>	: Marketing Strategies
<b>SD</b>	: Suitable Development
<b>WB</b>	: World Bank

## **ABSTRACT**

Unemployment is steadily increasing in many countries across the world, yet so acute in developing countries with relatively explosive population parameters, that job creation becomes the focus of all nations. In an attempt to address issues of job creation for sustainable development, more effort is being put on exploitation of locally available resources to provide livelihood. This study focused on factors influencing productivity of potato farming projects in Kabondo Kasipul Sub County, Homa Bay County. The study was grounded on the influence of such factors as, training on value addition, resource mobilization, marketing and preservation and storage and how these would influence productivity of potato farming projects. The study would be significant to the potato project initiators in the potato industry by informing them of the best industry management practices to embrace in order to boost the productivity of the potato industry. It also promised to provide insight to the government to formulate policies that would be favorable to the growth of potato industry, in extension to the general investment initiatives in the county. Various investors also stood to benefit from the study findings, given that this is still an unexploited dimension of the economy in Kabondo Kasipul Sub County and the entire Homa Bay County that offers to provide ingredients to the "Homa Bay County We Want". The study was anchored on the theory of social action by Slocum (1962) and Rothman (1968). Descriptive survey research design was used in the study targeting a population of 1200 potato project stakeholders and the study sample was 10% of the target population; (120) respondents. Sample for the study was obtained by employing cluster sampling procedure. Data was collected using questionnaire, which was pretested to establish its effectiveness. Validity was ascertained through adequate coverage of research objectives, expert judgment and peer review, while reliability was measured using split-half method. Data was analyzed using descriptive statistics, such as percentages and frequencies and presented using frequency distribution tables. The study revealed that training on value addition, resource mobilization, marketing strategies and preservation and storage had great significance on productivity of potato farming projects in Kabondo Kasipul Sub County. It was recommended that strong policies be instituted by the government in order to boost productivity of potato farming projects and further research be done to establish other measures of productivity of agricultural projects

## CHAPTER ONE

### INTRODUCTION

#### **1.1 Background of the study.**

Considering some countries as more wealthy than others may just be a product of one's imagination, given that no human race completely lacks resources for which to present in the world market, rather failure to recognize value in such materials may be perceived as poverty. Local initiatives that focus on existing resources can offer to provide alternative sources of obtaining livelihood in an attempt to address glaring unemployment challenges threatening survival of mankind today, Woods (2014).

Formal employment opportunities have become scarce and the culture of waiting for the government to provide must be discouraged and a lot of prominence put on the exploitation of local interventions that do not necessarily require sophisticated skills, Wally (2013). Locally available resources in their raw forms, though commonly used in this state, rarely offer meaningful value, yet any effort to add value by processing them into some forms of finished products promise much gains, Morris (2012).

In his study done in Southern Ireland on value chain addition to local resources, James (2013) indicated that potatoes that were being grown by local residents provided job opportunities through establishment of sugar processing industries that relied on sweet potatoes. The cost of production of sugar from potato related products were found to be relatively low in stark contrast to sugar that is produced from sugarcane, Allion (2012).

According to Adams (2013), reporting from a study done in Brazil on the popularity of sweet potatoes in production of low cost sugar, observed that sugar extracted from sweet potatoes provided cheap sugar manufacturing as opposed to sugarcane. Such low cost sugar

manufacturing associated with sweet potatoes implies that local residents who engage in growing potatoes are encouraged to produce more of such crops since even their production do not heavily rely on application of fertilizer and other forms of insecticides, Donn (2014). In his study conducted in Zambia, on factors influencing the viability of agricultural products such as groundnuts, sweet potatoes, guavas and mangoes, Sakala (2011), indicated that such crops could provide over 75% of employment opportunities in the informal sector if they were processed than if they were used in their raw forms.

Processing those agricultural products become more gainful if farmers are equipped with knowledge and skills in the processing procedures, mobilize more resources to boost production of the crops to keep pace with the processing demands, and identify suitable marketing strategies that would promise appropriate returns from their investments, Jenny (2013). She further observes that provision of modern preservation and storage facilities is equally crucial in ensuring that the products remain fresh for relatively long duration.

In West Africa, Obafemi (2010), looked at the productivity of yams in Nigeria and observed that this was the oldest crop that was being consumed in the country in the same raw form with very scanty effort to add value. He suggested that farmers who engaged in the production of this crop ought to be assisted to process them into some high value crisps that could be sold in supermarkets. He noted that this processing required additional resources in the acquisition of processing machine, installation of preservation and storage facilities, knowledge and skills to use such machines and the identification of suitable marketing strategies to sell the finished products.

According to Adaku (2009), it is not advisable to focus on what other countries take to the world market, since every nation is endowed with some kind of natural resource that remains to be

exploited for the good of that nation. He suggested that everyone should take stock of what they own, extract, and add value to compete in the world market. In Egypt for example, fruits such as guavas, mangoes, apples, grapes, pineapples among others, are being grown using irrigation from the waters of Lake Victoria and these fruits are being processed into juice and sold to the East African countries that own the same lake, Hosni (2013).

Uganda in East African boasts of being the largest banana growing county in the region, yet there is little indication that this precious commodity competes for space in the world market in an enriched form, Taban (2014). He emphatically recommends that with extensive exploitation of the banana industry using modern technology in processing banana products, Uganda may not need to rely on foreign aid to fund its development initiatives. In Tanzania, sunflower projects have over years been embraced using the same old methods of agriculture with no effort at all to improve their productivity, yet this is a crop that offers cooking fat, cattle feeds as well as other aspects of cosmetics when value addition is adopted, Ali (2013). He advises that the initiators of the project should be trained on modern value addition strategies in order to enhance the market value of such commodities. Moreover, the need to put in place effective modern preservation facilities to keep these products fresh over time before sale should also be considered so as to allow the farmers get competitive prices.

Kenya is a country endowed with several agricultural products, a country whose economic mainstay is anchored on the platform of several agricultural products; among which it seeks to achieve its vision 2030, but which finished agricultural products does it display in the world market? Most of its products are exported in semi-finished forms in the world market and imported back to the country in processed form, and are beyond the affordability of ordinary citizens, such as Nescafe, Oyuga (2011).

Taking a voyage across Kenya, one notices the existence of a lot of agricultural products that could offer more hope to mankind on the basis of providing sustainable development, only with mounted campaign to add value, Adise (2010). Given that sweet potato production is associated with Kabondo Kasipul Sub County, and that there has been a lot of complaints about exploitation of the local farmers by the middlemen rendering these projects less productive, this study sought to investigate factors influencing productivity of potato farming projects in Kabondo Kasipul Sub County.

## **1.2 Statement of the problem.**

Kenya, like other countries in the world, is endowed with several natural resources, especially agriculture related: a country whose economic mainstay is anchored on the platform of agriculture, among which it exists to achieve its vision 2030, yet hardly displays finished agriculture products in the world market, Odago(2013). Most of its products are exported in both raw and semi-finished forms that later become available in the Kenyan market in the processed forms and are beyond the affordability of ordinary citizens, such as Nescafe, Oyuga (2011).

Reporting from a survey based on evaluating business gains derived from local agricultural projects in Homa Bay County We Want, Owuor (2014) revealed that potato products alone had the capacity of turning around the economy of the county through creation of employment opportunities in the juice industry, yet middle men had a field day exploiting farmers rendering this sector unproductive.

The Department of Agriculture in Rachuonyo South District commissioned a survey on the performance of agriculture - based projects in the district (2014) and reported that there was a lot of economic potential in the potato projects in Kabondo Kasipul Sub County, were better strategies identified and initiated for purposes of improving the productivity of the sector. The

report further revealed that with the present state of affairs as it were, farmers remained disillusioned with others threatening to pull out of the potato farming if the government failed to intervene. This study therefore sought to investigate factors influencing productivity of potato farming projects in Kabondo Kasipul Sub County.

### **1.3 Purpose of the study.**

The purpose of the study was to investigate factors influencing the productivity of potato farming projects in Kabondo Kasipul Sub County.

### **1.4 Objectives of the study**

The study was meant to realize the following objectives:-

1. To investigate the influence of training on value addition on the productivity of potato farming projects in Kobondo Kasipul Sub County.
2. To examine the extent to which resource mobilization influences productivity of potato farming projects in Kobondo Kasipul Sub County.
3. To assess the contribution of marketing strategies on productivity of potato farming projects in Kobondo Kasipul Sub County.
4. To explore the extent to which preservation and storage influence productivity of potato farming projects in Kobondo Kasipul Sub County.

## **1.5 Research Questions**

The study sought to provide answers to the following research questions:

1. What influence would training on value addition have on productivity of potato farming projects in Kobondo Kasipul Sub-County?
2. To what extent would resource mobilization influence productivity of potato farming projects in Kobondo Kasipul Sub-County?
3. What contributions would marketing strategies have on the productivity of potato farming projects in Kobondo Kasipul Sub-County?
4. How do preservation and storage influence productivity of potato farming projects in Kobondo Kasipul Sub-County?

## **1.6 Significance of the Study.**

The study would be significant to several parties that stand to benefit, either directly or indirectly in the whole potato farming projects in Kobondo Kasipul Sub-County. Primarily, the potato farmers would be informed of the need to add value to their crops so that these crops are sold out in processed forms rather than in raw forms. In this attempt, the farmers would be informed to mobilize more resources even from financial institutions to establish potato processing plants that would help them in potato processing which guarantee higher returns.

Besides the potato farmers would also be made aware of the need to identify better marketing strategies that would protect them against the exploitative tendencies of the middlemen through formation of cooperative unions to sell the products on behalf of the farmers. This would give the potato farmers a bargaining power over the buyers, thereby registering attractive prices.

The study would be significant to the government in policy formation, particularly in the department of agriculture, trade and industries and cooperative development. Such policies that

would enhance effective exploitation of locally available resources into productive project interventions that promise to offer alternative employment opportunities to the citizens. Moreover, the banking sector would also gain from the study findings by viewing local initiatives as an investment and roll out loaning and saving services to encourage the growth of the informal industry.

furthermore, the NGOs and other development agents in the entire country, especially those dealing with income generating activities to improve community well being, would also benefit from the study in the sense that they would recognize local resources for sustainable development.

### **1.7 Basic Assumption of the Study.**

The study was grounded on the basic assumptions that potato farming projects had been established in Kabondo Kasipul Sub-County as an alternative to other formal employment opportunities and hence embraced by a wide cross section of the population in the region. Moreover, the sample drawn would be representative in its major characteristics to the target population, the data collection instruments would be valid, reliable and practical in measuring what they ought to measure and that the respondents would be able to give information honestly and objectively.

### **1.8 Limitations of the study**

Having been done in Kabondo Kasipul Sub-County, coinciding with the period of heavy rains, the study was limited by weather conditions in different ways. Most places were difficult to access as the existing roads remained muddy. The duration for visiting the respondents was also considerably reduced due to the ever threatening weather conditions that before long, rain would start. The study was also limited by insufficient resources for developing research instruments as

well as in financing other research-related expenses. On the one hand, some respondents were unwilling to give information due to suspicion of some nature, whereas other respondents chose to give false information deliberately.

Attempts were put in place to overcome these limitations to make the study successful. The weather phenomena were addressed by visiting some places on motor – bikes and others on foot. The visiting was also timed at round noon, just when the roads were becoming accessible and before the beginning of afternoon downpour. Inadequate finances was handled by making trade-off of the sample size in such a manner that it was not too large to have a constraint on the allocated resources, while at the same time remaining representative to the target population. Finally, the respondents were also informed that the study was purely academic and that the information given would be treated confidentially.

### **1.9 Delimitations of the Study.**

The study was based on factors influencing productivity of potato farming projects in Kabondo Kasipul Sub-County and focusing on potato farmers and other persons who engaged in potato farming projects in different capacities. Such key stakeholders in the potato farming comprised of potato hawkers and business persons, agents and middlemen as well as farmers. This population was geographically spread in such places as Nyapalo, Mapera, Centre, Kadongo, Misambi Kodada and Chabera. This population was composed of those whose daily activities and economic foundation were based on potato farming projects in Kabondo Kasipul.

### **1.10 Definition of Significant Terms as used in the Study.**

**Value addition:** enriched form of a product through blending with different products to realize more value and obtain higher business returns.

**Productivity:** a measure of growth and gainful returns associated with a venture through adoption of competitive business strategies.

**Potato farming projects:** a wide spectrum of potato preparation initiatives, ranging from growing all through to delivery of the final processed potato products to meet consumer needs.

**Resource mobilization:** practices which are meant to acquire various resources that are put to use in a project intervention.

**Marketing strategies:** ways adopted in presenting different products of a business process to consumers and other secondary users.

**Preservation and storage:** keeping a product in the form in which it can remain fresh for a relatively long duration.

### **1.11 Organization of the Study**

The study is organized in five chapters, with chapter one presenting the study background statement of the problem, purpose of the study and objectives of the study. Included in chapter one are also research questions, significance of the study, study's basic assumptions, limitations of the study, delimitations of the study and definition of significant terms as used in the context of the study.

Chapter two reviewed several aspects of literature with close relationship to this area of the study. This section did review literature against the prism of the study variables, that is, value addition, resource mobilization, preservation and storage and marketing strategies on productivity of potato farming projects. Moreover, this chapter also captures the study's theoretical frame work, conceptual frame work and the summary of literature review.

Chapter three features the research methodology, highlighting the research design, target population, sample size and sample selection. Besides, it also presents data collection

instruments, instrument's validity, instrument's reliability, piloting and data collection procedures. Furthermore, data analysis procedures, operationalization of the study variables as well as ethical considerations are featured. Chapter four contains data analysis, interpretation and presentation, while chapter five contains summary of findings, conclusion and recommendations.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter captures in great details the previous works of the scholars who have constantly shaped this area of study. Literature reviewed in this section focus on the study variables mapped against the backdrop of the findings of such previous scholarly works. The study variable under review include; value addition; resource mobilization, marketing strategies and preservation and storage on productivity of potato farming projects. Featured also in this chapter, are the study theoretical framework, conceptual framework and summary of literature review.

#### **2.2 The concept of productivity of potato farming projects.**

Productivity is viewed as the output-input ration, Homme, (2012). In this context, productivity of a venture is determined by comparing a business out-put with its inputs, that is, the higher the ration; the higher the productivity and the lower the ratio, the lower the productivity. Productivity of an enterprise can be increased by reducing the input while holding the input constant, Peterson, (2014). Productivity of a project venture can be ascertained through the measures of efficiency and effectiveness with which activities are executed. Efficiency relates to the resource utilization in such a manner that wastage is greatly minimized and effectiveness is a measure of the degree of accomplishing planned objectives, Daniel (2011).

In any project enterprise, goals are always pre – stated and all key activities and tasks must be directed towards achieving such desired goals. Jose (2012), states that, usually people tend to perform tasks with little regard to establishing if milestones are reached as scheduled, only to be baffled in the end that targets remain too far to be achieved, yet resources have been fully utilized.

According to Cameron Woods (2012), productivity poses a great challenge to project outfits. This is because productivity involves a delicate trade-off between inputs and outputs, an exercise that requires superior technical skills to manipulate, lest an entrepreneur overwhelmed but suddenly noticing too late that operations are completely out of hand.

Monomy (2010), communicating about poor productivity commonly associated with public sector institutions in Brazil, stated that more and more resources were always demanded from the state coffers, yet there was little effort in controlling their utilization. This led to registration of low productivity that was a threat to economic development. She warned that the “sit-wait-and-see” attitude that was adopted by public servants would oversee the gradual pilferage of state resources with no results to see, creating frustration among the tax payers culminating into disastrous consequences.

Ali (2013) advises that the initiators of the local agricultural community projects should be trained on modern value addition strategies in order to enhance the market value of such commodities. Moreover, the need to put in place effective modern preservation facilities to keep these products fresh over time before sale should also be considered so as to allow the farmers get competitive prices.

Utilization of resources must be controlled in a production process to ensure the resources and human effort invested in a venture are accounted for in the end; efficiency. Engaging in activities that add no value to the goals of an enterprise ought to be discouraged so that loopholes are sealed on time and resources used with no wastage whatsoever, Omar (2010). Omar recommends that self-reinforcing control mechanisms be formulated to eliminate cases of blame game when magnified deviations are recognized, giving a terrible blow to productivity.

Nyamita (2010), observed in his inspection report focusing on the level of productivity in most construction sites in Homa Bay County, where non- educated workers were assigned tasks to perform, that mortar would be found scattered after work, metal pieces not used would be seen everywhere; timber would be wasted and thrown here and there and the overall cost of production pushed up leading to several stalled buildings. In this report, he suggested that efficiency should never be sacrificed in the hope of achieving the goals at whatever cost, but contractors should put eyes on the goals while regulating the means to reach the desired goal.

In large maize farms in Kitale farmers prefer investing resources on tractors and other superior machines for purposes of enhancing maize productivity, that would have been difficult to achieve if manual labour were used, Serut (2008). He urges that reducing manual labour to its minimum positively pushes productivity index of an enterprise, for this is an attempt of ensuring that processes are efficient.

Explaining why the James Finley Tea Firm in Kericho opted to import into the county tea picking machines, Hagg (2009), indicated that the firm was getting concerned about the escalating cost of production. Human labour was found as slow and expensive that pushed the cost of production to abnormally high and disadvantaged the firm in the tea industry. He warns that apathy in going technological in the manufacturing industry would push several firms out of business, for competition by firms to give quality products at affordable prices are bound to intensify.

Productivity has remained a primary concern to all persons who engage in all aspects of business activities. It is often viewed as a business parameter that determines the domain at which firms interact with their operating environment. Suppliers want to enter into a trade agreement with a promising firm, customers select places to buy from based on the availability of the required

stock, financial institutions give loans against a pool of productive collaterals with one indicator in mind; productivity, Anwan (2008).

According to Mutisya (2010), maize production improved with an unforeseen level in Kambaland. However, given that the farmers rarely anticipated such an eventuality, they got stranded with their produce since the market was beaming with such products. The consequence of this production process was occasioned by lack of storage facilities that led to wastage through aflatoxin.

A venture in which efficiency is held dear, guarantees its stakeholders sustainable benefits, as every participant operates on a clear roadmap to accomplish the goals of the organization. It is with this focus on efficiency that a business outfit minimizes wastage to give quality products that will meet the ever changing customer expectations, Amoth (2002).

In a study that focused on factors influencing the productivity of yams in Nigeria, wole (2008), observed that agriculture is business like any other and requires sufficient resources to be invested for increased productivity. He noted that, as all business persons needed training in skills and knowledge for effective performance of tasks, so do agriculturalists.

Osodo (2010), leaning on economics, alluded to the concept of choice in a production process guided by the three pillars; what to produce; how to produce and for whom to produce and recommended that a production process should conjure up all appropriate marketing strategies to ensure that what is produced attracts high returns.

### **2.3 Influence of training on value addition on productivity of potato farming projects**

Local agricultural products hardly attract high returns if value addition is not considered as critical component of the production process. Value addition to an existing raw form of a product is a function of training that leads to the acquisition of the requisite knowledge and skills

necessary for the effective manipulation of the concept of value, Olmart (2012). Value addition is a critical element of productivity of any initiative, for customer to a given product will always demand for more and more value as a mark of product quality. According to Adwar (2012) in his study done in Rongo District focusing on the productivity of sugar cane farming, competition in the sugar sector threaten to render farming in this region less profitable as few finished sugar products were being realized. He advises that in order to remain competitive in the sugar industry in the face of the influx of cheap manufactured sugar products in the local market, sugar milling firms should enrich their products and develop variety of products to widen its consumer base.

Acquisition of skills relevant to a given trade may not necessarily require state of the art learning facilities, but any new way of action that challenges old habits will be crucial and in potato farming projects, even preparing potato crisps is value addition enough, Nyamasi (2010). Training is a process by which individuals gain knowledge, skills and attitudes that are helpful in shaping man's destiny in life. Through the acquired knowledge, abstract theoretical constructs are tested with real life challenges, hence the educated always take control of events with courage, Lanin (2011). Education and training are viewed as aspects of life that mould behavior of individuals into desired state; impart skills and knowledge for solving emerging problems and offer opportunities for innovation and creativity necessary in addressing future challenges, Zawadi (2014).

Owing to the realization that little returns are obtained when an agricultural product is sold in its raw form, any attempt to add value to potato crops promise to offer higher profits to the farmers.

In project initiatives, just like any business venture, whereas entrepreneurs may be influenced by some form of hereditary factors, serious and successful entrepreneurs are shaped to be equal to their tasks through education, Oshwal (2012.). He insists that modern business world can only be

understood by learned entrepreneurs who possess the skills and knowledge required to keep pace with changes of globalization. This may explain why some countries send volumes of raw and semi finished commodities to the world markets with little business returns. Jack (2009) observes that since the business environment has become too complex to predict, it is no longer business as usual and businessmen must strive to remain awake in a pro-active manner to be able to deal with any force that may threaten their operations.

Aggrey (2011) wonders why it has always been believed that anybody can do business successfully. He says that several businesses are engaged in with the same attitude, but rarely exist beyond their first anniversaries, simply because “people are in business”. He warns that resources should not be committed into business ventures if the management is lacking, even in the basic business skills, for such enterprises were bound to fail. It is a common experience that value addition to an existing product may not demand a lot of additional resources, but more often demand slightly more innovation to attract consumers

In the study based on influence of training on the growth of small scale and medium enterprises in Nyeri district, Wamuhu (2010), indicated that training in skills and knowledge of basic business management should be emphasized in order to steer businesses effectively. She recommends that the government of Kenya should strengthen business curriculum at all levels in education ladder to equip school leavers with business knowledge that would help them obtain livelihood without having to rely on formal employment.

According to Zainabu (2008), businesses in Kwale district were discovered to be doing poorly, reason; lack of training. She believes that a trained business person will be able to evaluate the course of a venture in view of both internal and external forces and fix any deviation if identified. One who lacks training may imagine that business is bad with everyone and may

remain helpless waiting for a period of good business only to find themselves doing other things committing similar mistakes.

It is through training that business persons can adopt variety in their enterprises as a strategy for appealing continuously to customers. At times, some customers get fed up with certain products because of their same old looks and may prefer substitutes, but with a perceived value addition, customer interests in the products will be renewed, Birmingham (2014). He recommends that business persons who help in raw agriculture products should device ways of adding value through processing into some finished forms.

Knowledge that is required in business in the modern times for purposes of remaining competitive is never ordinary, but more superior to that exhibited by rivals. Modern business is done on a crowded field with the no participant to be underrated, yet this field is also ever changing, making it more sophisticated to be faced with simple skills Amary (2006).

According to Sign (2012) manual operations which depend on bare strength are steadily being faced out in production processes, and instead, technology is replacing human labour geared towards obtaining maximum gains, while reducing the cost of production. This is an indication that soon, only skilled personnel will be required rendering large population of untrained workers jobless.

Strategies that are superior in nature are developed for use in business through manipulation of internalized skills and knowledge learned through training and refined by experience, Lavender (2012). She notes that bringing variety into the market from time to time makes customers to build trust and loyalty in given business enterprise. She observes that variety does not just reside in the number of products released into the market; rather it should focus on value addition even if it means having one product whose value changes continuously.

Education provides an individual with a stock of knowledge that is applied to deal with business issues as they arise. Even if circumstances remain difficult to predict, education has the capacity to offer a continuum of suitable remedies that prove equal to the tasks, Tremory (2004). He advises that a business entrepreneur should engage in challenging training experiences which offer knowledge and skills in full richness.

Denny (2006), warns business persons dealing in primary products to guard against selling such commodities in their basic raw forms. She argues that raw materials fetch “raw pay” and the one who processes them reaps the benefits including that which should have gone to the original producer. In the light of this reality, training in knowledge and skills for value addition must be emphasized

According to Jarya (2007), training and education offer the greatest asset to an enterprise. Investing in human capital with the request skills and knowledge prove a worthy undertaking because workers with a wealth of knowledge make resources more productive. Whereas some organizations may choose to invest heavily in non-human resources, in business, one must realize that success begins with resource deployment, and therefore resources must be allocated based on thoroughly thought plans, which can effectively be done by trained personnel, Karaga et al (2005).

In the best interest of an enterprise, training is emphasized, but this should not be overdone at the expense of other factors of production. Firms may engage in training and spend much more than to be gained from such trainings, Muktar (2005). He proposes that professionals in different areas should be invited to the organization occasionally to induct workers on the job. He also suggested that computer software programmes done by qualified professionals can also be acquired to help workers gain knowledge at their own pace.

Kifoto (2006) says that even in simple business operations that are done in small scale, interpersonal skills that may have been acquired just through introduction with others in the society is significant in growing an enterprise. With the acquisition of higher knowledge and skills organization resources will be made much more productive.

From his study carried out in Javalpur India, Presona M. (2004) established that most businesses that were started in the recent times had registered enormous growth because training in business management was almost mandatory in India. Through the knowledge and skills acquired entrepreneurs are prepared to take up the challenges encountered in the business environment.

Looking at the influence of training on productivity of brick-making projects in China, Syang Wan (2010) observed that brick-making was one of the most profitable undertakings in the rural areas of China, yet remained the greatest contributor to environmental degradation. Continuous production of bricks in total disregard of their effects on the environment must be discouraged by adopting modern brick making technology which is environmentally friendly. To be able to adopt such newer technologies in brick making, prior training is necessary in handling such machines.

In India, bricks are also being made and this industry provides employment to several rural folks, though regarded as a great pollutant of the environment when undertaken in its traditional form. With the introduction of brick-making machines, this sector has been improved. Several brick-making persons have been trained in using the technology making these projects productive, Cole (2009).

In Kenya Irish potatoes have become very popular with people in both rural and urban areas. Those who engage in this business have learned how to add value to the raw materials and eaten in several forms. Some people prepare and sell chips which are even taken with soda and other

meals, Mogore (2010). He recommends that value addition should be thought of keenly to ensure that sweet potatoes also hit the market in various forms so that the business is made more profitable.

#### **2.4 Influence of resource mobilization on productivity of potato farming projects.**

Mobilization of resources is a crucial component for improving performance of any economic venture, for no initiative can thrive in the absence of resources. In the interest of realizing product viability, identification of the necessary resources for use forms a strong foundation to achieve success in the venture, Ondari (2010). Potato farming projects are local community interventions that are geared towards addressing various economic needs of the initiators, and require resources in different forms, as these projects are a form of investment.

Running a business enterprise heavily depends on availability of varied nature resources to facilitate execution of tasks to accomplish organizational goals, Jean (2012). A project intervention is established on the platform of availability of resources invested with the sole purpose of gaining interest; hence resource mobilization is a fundamental requirement for project success, Prusona (2013).

According to Ogari (2011), no business venture can operationalize any superior competitive business idea at a resource disadvantage, for ideas may just remain so, if there are no resources to set them in motion, that does not mean that business success is not determined by other factors of production, but with sound resource based an organization to go.

Investigating the influence of financial resources on the growth of business venture in the cottage industry in India, Jamal (2014), indicated that Indian's cottage projects started with the production of simple household items, but have improved over time surpassing the traditional industrial nations of the world with popular industrial products. He observed that, this great

milestone achieved in the growth of cottage industry in India was facilitated by the government's interest in allocating funds to the industry as it was creating job opportunities to the citizens. He further noted that it was because of the growth of the cottage industry in India that saw the growth of financial institutions which drew over 50 percent revenue from this informal industry. Young (2013), while reporting from his study conducted in the informal sector in China, on the contribution of resources on the expansion of small and median enterprises (SMEs), noted that China's economy has been growing steadily because the government invests heavily in this sector. With the government effort, the informal sector in China currently beaming with huge production has made enormous contributions to the GDP of the county.

Examining the relationship between resource mobilization and productivity of local community projects in Trinidad and Tobago in the West Indies Islands, Mijean (2012), noted that productivity of an enterprise was a direct consequence of availability resources. He further enumerated the resource types that influence projects success as, fixed assets, operating cash and skilled personnel. He cautions that business persons with sound financial base should not take holiday that one's funds are accessed; business will automatically grow, but must be concerned about the effective utilization of such resources by engaging competent personnel, in key business tasks.

Shamala (2013) pointed out, in her study on factors influencing viability of brick making projects in Busia County that bricks remained the most popular building material in Kenya, yet lack of resources to transport those products to competitive markets exposed them to exploitation by the brokers whose prices were poor.

Investigating the influence of resource mobilization on productivity of hawked agricultural products in Bomet County, Chepkorir (2010), established that due to lack of resources to put up

green shades for selling agricultural products such as green maize, fruits, vegetables and Irish potatoes, sellers resorted to lining directly along the road with their products targeting potential consumers on transit, exposing them to adverse weather conditions. Occasionally, travelers on vehicles take off before paying. Besides, these products are also exposed to adverse weather conditions lowering their values.

Taking the stock of the local project interventions with much value to the initiating stakeholders in Nyamira County, Mugambi (2012) observed that Irish potato projects had proved more economically promising local initiative as most people preferred investing a lot of resources into its production. These potatoes are commonly used in making chips which find ready market among both local and urban consumers and it was a favorite meal that complements several meals. Besides, Kirui (2011) in the survey based on the productivity of potato based products in Bomet Central Sub-County reported that due to heavy investment of resources in this sector, it was being viewed as a sector to behold in providing opportunities for economic growth of the entire County.

Focusing on the influence of resource mobilization on the productivity of clay moulded household items in Vihiga District, Wanjala (2010) noted that due to insufficient availability of diverse resources to be invested in this sector, those involved in these projects often complained of obtaining meager returns. He recommends that it was prudent for these project initiators to perceive their ventures as a form of business that required resources for investment purposes, if productivity was a major goal to be achieved.

## **2.5 Influence of marketing strategies on productivity of potato farming projects**

Any purchasing process involves mutual interaction between the parties in order to reach an agreement that each will appreciate. In the light of this reality, selling and buying require that an individual develops high bargaining power in order to obtain the best outcome in the transaction process and this calls for knowledge of business strategy, Outa (2012). Simply defined, Guyan (2010), views marketing strategies as the skilled attempts of ensuring that products of an organization do not just gain popularity with consumers in a wide market cross-section, but these products also promise attractive returns.

Marketing strategies are well thought out, intelligently designed and neatly packaged procedures of getting command of the widest marked niche-moves which give the highest value for investments, Dawood (2012). It is not worth producing commodities with no idea, whatsoever, of the intended user's characteristics, for any products that can stand in the market is that which focuses on specific customer needs. With no suitable strategies put in place to have the consumer informed that what is offered fits their expectations, none will be ready to identify with such products, Amanda (2011).

According to Michael James (2013), while highlighting the influence of marketing strategies on productivity of local business initiatives in Argentina, products must be popularized to connect with consumers, and to achieve this end, marketing strategies must be formulated. He gave such common strategies as advertising, engaging in regular business promotions, taking part in corporate social responsibilities, forming cooperative societies to take charge in marketing products, identifying suitable displaying stalls among others.

Ensuring that products of an enterprise do not just gain into the market, but also fetch attractive returns to the organization, marketing should not be done by isolated individuals, Demn (2010).

Middlemen and brokers always take the advantages of low bargaining power of individual sellers thus exploits them. Formation of cooperatives or selling in groups enhances the bargaining power of the sellers hence receive handsome pay in return, Emilly (2014).

Examining the influence of marketing strategies on business competitiveness in Australia, Andrew (2013) observed that small scale farmers who engaged in production and marketing of raw products faced enormous challenge that ought to be addressed in order to make initiatives productive. He outlined a range of marketing challenges including, lack of designated places to sell their products, lack of strong cooperatives to bargain for better pay and desperation to dispose products at low process for bare survival.

As a professional economist at the Harvard school of business in America, Gore (2010) giving business productivity an economic dimension, introduced the concept of scarcity that necessitates choice on the basis of what to produce, how to produce and whom to produce. He advised that before starting a venture, the three pillars of scarcity are critical and should inform the decision to go to business, without which, the entrepreneur is likely to be shocked by business realities. Shamala (2006) pointed out, in her study on factors influencing viability of brick making project in Busia County, that bricks remained the most popular building materials in Kenya, yet poor marketing strategies had consigned the brick makers to object poverty. This was because the brick sellers were being exploited by brokers who were paying low prices and later making a hill using the producer's efforts she recommended that strong co-operatives should be informed to enhance the bargaining power of the brick makers as well as identifying markets in an attempt to make such business productive.

According to Brenda (2006) better marketing strategies are those that create genuine trust in produce. Genuine branding containing true and reliable information about a given commodity is considered a sound marketing strategy. Packaging that consumers perceive as conveniencing when being handled, environmentally friendly and secure safety of the user is equally a good

marketing strategy. Adoption of superior marketing strategies information enhances a firm's competitiveness Dally (2005).

## **2.6 Influence of preservation and storage on productivity of potato farming projects**

Different levels of commercialization have been recorded by farmers across developing and transition economies in Latin America, Asia and Africa, often arising from various drivers and leading to location-specific implications, Otega (2011). Food security is not the absence of production, but improper preservation and storage of the surplus produce and agricultural extension department should come in handy to address this need, Ombeta (2014). For instance, advances in biotechnology have transformed the Brazilian agriculture into a more commercially oriented sector, with improved contributions to the country's economy, while the influence of globalization has been noted as the key driver of agri-food systems changes in China, India, and other Asian countries through adoption of modern preservation and storage facilities that ensure a produce remain in usable conditions over a long period of time.

Basing his study on factors influencing business returns in the Miraa industry in ,Meru District, Mwiria (2010) indicated that preservation and storage facilities were critical in keeping these products fresh for a relatively long duration, hence farmers who could afford these facilities were more successful than those who could not.

Most of the Asian countries (both the highly populated ones such as Bangladesh, China, India and Indonesia, as well as the smaller ones such as Cambodia, Sri Lanka and Vietnam) benefited from adoption of new high-yielding varieties of food grains—Green Revolution (World Bank, 2005). The strategies of ensuring that such food stuffs remain to cater for the populations even in durations of poor harvest is through effective and efficient preservation and storage. With the adoption of preservatives, agricultural products can sell over time, predisposing the farmers to

obtain better prices, since the tendency to sell at throw-away to the exploitative middle men would not arise.

As is common among the flower sector in Rift Valley and Central Regions of Kenya, these commodities require delicate handling in order to keep them in usable conditions when finally in the market. This gap is filled through provision of the most modern preservation facilities such as deep freezers and ordinary fridges, Agwanda (2010). In the Lake region which is characterized by fish farming, farmers often complain of lack of preservation facilities which predispose them to meager prices from traders, since should the fish fail to get buyers immediately, they are likely to go bad.

Widespread inefficiencies at the NCPB, together with liberalization of maize market in 1988, increased producers' options on maize marketing channels—cooperatives, private millers, and roadside markets. Over this period, the horticulture sub-sector experienced rapid growth arising mainly from changing dietary preferences, increased participation of women in the labour market, and emergence of various market outlets for fresh fruits and vegetables, Migika(2013). According to Tumeiyo (2012), the milk processing sector has undergone a lot of liberalization in Kenya through preservation and efficient storage facilities giving opportunity to private individuals to venture into the sector reaping maximum business benefits.

## **2.7 Theoretical Framework**

Theoretical framework refers to collection of ideas that are related based on theories and principals that offer to explain the existence of phenomena as captured by the theories, Kombo and Tromp (2006). In many fields, theories and proposition about relationships have been formulated. In such fields, the researcher may be intended in ascertaining or testing a particular theory, Mugenda and Mugenda (2003).

This study was grounded on the theory of social action, also referred to as social action model of community development. This theory is anchored on several models, each of which can be used to sustain the development of community initiatives. This theory shows that social and economic change could be brought about in the community through adoption of innovations by members of a social group or community. The choice of the model is justified in the view of the fact that effective development is attained through collective efforts of diverse stakeholders, and that individual contribution is also significant.

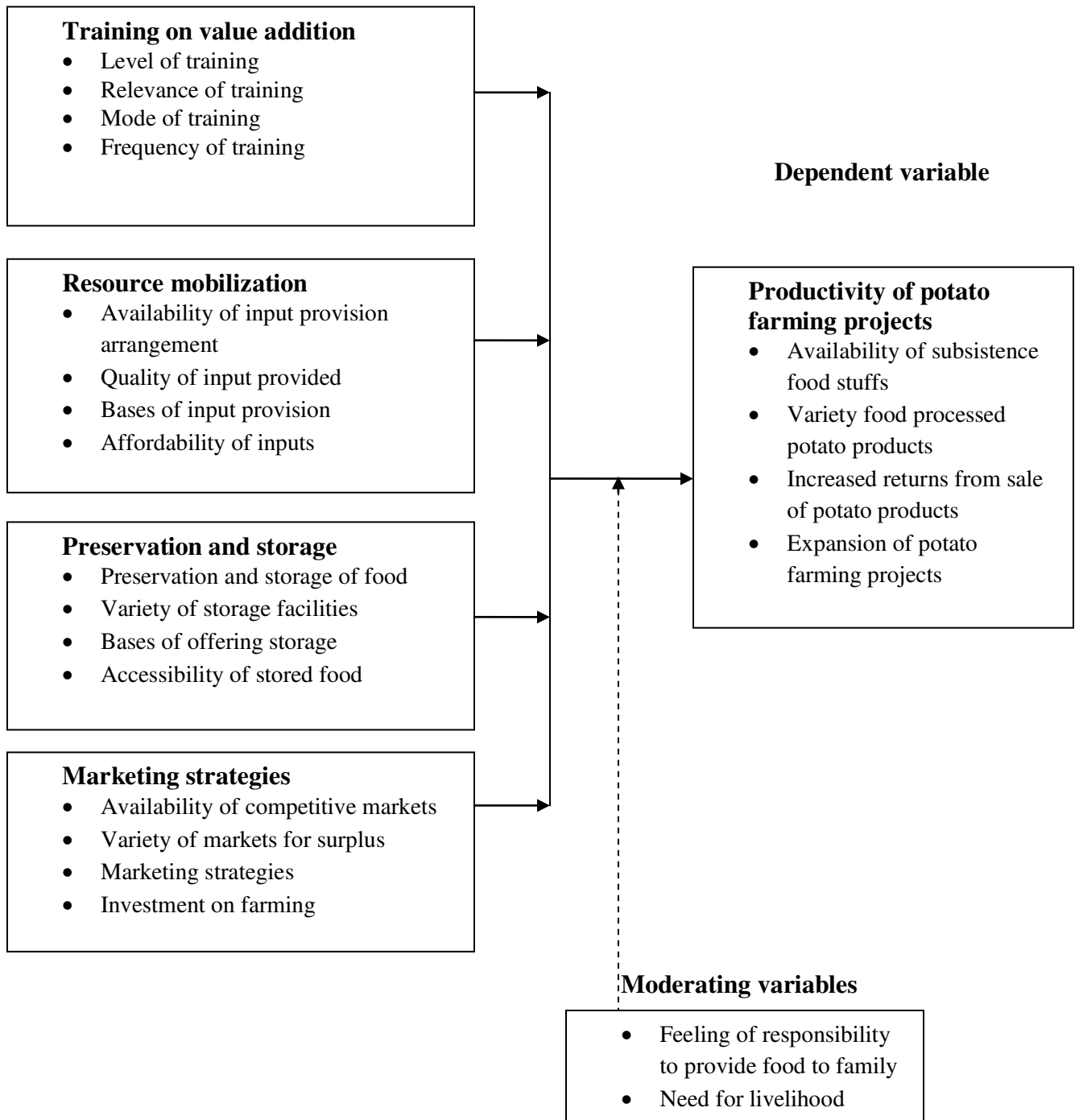
According to Schonher and Mbugua (1973) innovation could be introduced to a few members of a social unit and from these few members, innovations could diffuse, trickle down or be communicated to other members of the social unit this theory is therefore significant to the study since potato industry in Kabondo Kasipul Sub County has remained unproductive due to lack of innovative ideas to turnaround the industry. The research of the study may act as a catalyst to awaken the potato project initiators to devise strategies of adding value to the potato products rather than sell them in their raw form. This innovation may also trickle down to other agriculture products in the entire Homa Bay County transforming it into an economic hub in Kenya. Effective exploitation of the available local resources, through innovative strategies that add value could offer to make devolution a reality in Kenya, which in turn could spur economic development in various regions of the county in a sustainable manner.

## **2.8. Conceptual Framework.**

According to Mugenda (2003), a conceptual frame work refers to work when a researcher conceptualizes the relationship between variables in the study and shows the relationship graphically or diagrammatically. The purpose of the conceptual framework is to help the reader to quickly see the proposed relationship.

**Figure 2.1 Conceptual framework of the study**

## Independent variables



## 2.9. Summary of Literature Review

Literature review in this study revealed that productivity of an industry could only be enhanced through adopting best industry management practices. Potato farming project being a virgin industry in kabondo Kasipul Sub County ought to be opened up through innovative means of value addition to ensure that this industry becomes productive. Other aspects that are key to the participants in this industry is the acquisition of knowledge and skills in value addition and business management, for without knowledge, local resources would always remain non exploited, yet such offered employment opportunities just like other economic engagements. It was also observed that potato farming projects in kabondo Kasipul and elsewhere were unproductive because of exploitation by middle men who took advantage of lack of the bargaining power of the project initiators by offering less attractive prices. The theoretical framework used in the study identified an existing gap in this industry: innovation that it adopted would spur up growth in this sector

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter presents the research methodology that was adopted in the study. Chosen for use was a quantitative research approach employing a descriptive survey research design. Featured as components of the research methodology are, research design, target population, sample size and sampling procedures. Moreover, data collection instruments, instruments validity and instruments reliability are also presented. Besides, piloting of the instruments, data collection procedures, methods of data analysis and operationalization of the study variables, as well as ethical considerations are also featured..

#### **3.2 Research design**

According to Kothari (2005), research design is the conceptual structure in which research is conducted and constitutes the blue print for the collection, measurement and analysis of data. Mumah (2010) defines a research design as the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure.

A descriptive survey research design was used in this study. In the views of Mugenda and Mugenda (2003), a survey is an attempt to collect data from members of a population with respect to one or more variables. It is probably the best method available to social scientists and other educators who are interested in collecting original data for purposes of describing a population which is too large to observe directly. This research design was therefore found to be suitable to the study since the study sought to describe features of the target population as they existed and such a target population was also large.

### **3.3 Target population**

In Mugenda and Mugenda (2003), target population is defined as that population to which a researcher wants to generalize the results of a study. The study targeted the population of farmers and business persons who engage in potato business in Kabondo Kasipul Sub County. This target population was found stretched in a wide geographical area of Mapera, Center, Kadongo, Nyapalo, Misambi and Chabera. Arriving at the target population, Kabondo Divisional Department of Agriculture Record (2014) provided a guide to this end as an estimated 1200 people were found to be engaged in the potato farming projects.

### **3.4 Sample size and sample selection**

Kathari (2005) defines sampling selection as the selection of some part of an aggregate or totality on the basis of which a judgment or inference about the aggregate is made. According to Mugenda and Mugenda (2003), a sample is a subset of a particular population and in the view of Kathari (2009), a sample size refers to the number of items to be selected from the universe to constitute a sample. An optimum sample is one which fulfils the requirement of efficiency, representativeness, reliability and flexibility.

Gay in Mugenda and Mugenda (2003) suggests that, for correlation research, 30 cases or more are required; for descriptive studies, 10 percent of the accessible population is enough and for experimental design, at least 30 cases are required.

The study being descriptive in nature, the researcher used a sample size of 120 respondents. This was calculated according to Gay in Mugenda and Mugenda (2003) who suggested that for descriptive studies, 10 percent of the accessible population is enough hence 10 % of 1200 (target population) gave a sample size of 120 respondents. On the basis of the sampling procedure, the study adopted a probability sampling design which accorded each item in the target population

equal chances of being included in the final sample. Owing to the fact that the respondents were distributed geographically in areas such as, Mapera, Centre, Kadongo, Misambi, Nyapalo, Kodada and Chabera, cluster sampling procedure was used and 10% of the target population from each area was selected into the final sample as illustrated in table 3.1.

**Table 3.1 Total and sample sizes of the study population**

<b>Cluster</b>	<b>Population</b>	<b>Sample %</b>	<b>Sample size</b>
Centre	150	10	15
Mapera	200	10	20
Kadongo	200	10	20
Misambi	200	10	20
Nyapalo	140	10	14
Kodada	100	10	10
Chabera	210	10	21
<b>Total</b>	<b>1200</b>	<b>10</b>	<b>120</b>

### **3.5 Data collection instruments.**

Given that the study was descriptive in nature, coupled with the fact that the sample size was relatively large, copies of questionnaire were prepared such that some items were closed-ended and other open-ended. This question category mix was chosen since even if the study was descriptive, it was crucial also to collect qualitative data upon which inferences would be made on certain characteristics of the target population.

### **3.5.1 Piloting**

Piloting is a preliminary study, normally done on a small scale to establish the effectiveness of the research instruments. Copies of questionnaire were prepared to collect data from those who engage in potato farming projects in Kabondo Kasipul Sub County. The questionnaire was pre-tested to a selected sample which was similar to, but not the actual sample used in the study.

Mugenda and Muganda (2003), propose that a pre-test sample should be between 1 percent and 10 percent depending on the sample size, and in this study, the researcher chose to use a pre-test sample size of 10%. The pretest sample was vital for it gave the researcher the opportunity to refine the items in the questionnaire that did not solicit the intended outcomes. A few copies were also selected and subjected to data analysis in order to ascertain the appropriateness of the methods of data analysis, Mugenda and Muganda (2003).

### **3.5.2 Validity of the instrument**

In the view of Mugenda and Muganda (2003), validity is a measure of the degree to which differences found with a measuring instrument depict true differences among the items being measured. In the perspective of Kothari (2005), an instrument is validated by proving that its items are representative of the skills and characteristics that it is purported to measure.

To establish the instruments validity in this study, adequate coverage of the research objectives was given prominence and this was ascertained through the pilot study in which questionnaire content was found to be representative. Validity was also ascertained through randomization that helped to check the influence of the extraneous variables. This was done by randomly selecting items into the final sample from the target population. Randomization was considered suitable for it is the best technique of ensuring that the sample drawn is representative to the target population.

Validity was also established through exposing the content of the study instrument to experts and peers for judgment that helped to shape those questionnaire items in conformity to the objectives of the study.

### **3.5.3 Reliability of the instrument**

In Kothari's view (2005), reliability of a test instrument is a measure of the constituency with which a test instrument produces the same results when administered to the same group over time intervals. Mugenda and Muganda (2003), posit that reliability is a measure of the degree to which a measuring instrument yields consistent results or data after repeated trials.

In this study, the researcher adopted the split-half method to measure the reliability of the research instrument. The questionnaire was designed into two parts by grouping the items into odd and even appearances and the person's product moment coefficient of correlation ( $r$ ) between the true halves calculated. Using this method, reliability of the questionnaire was established by obtaining an Alpha value of 0.78, which proved the accuracy of the inferences made in the study, Fraenkel and Wallen (200). The split-half reliability was preserved to tests-reset reliability method for it required only one testing session that helped check influences of maturation hence significantly reducing chances of error.

### **3.6 Data collection procedures.**

According to Kothari (2005), data collection procedure outlines the steps, their sequencing and actions necessary for conducting research effectively. Having developed and presented the research proposal before the panel of assessors of the University of Nairobi, the research permit was applied for from The National Council of Science and Technology giving authority to begin data collection.

The researcher did present the permit to relevant stakeholder in order to collect research information from them and with this authority; the researcher hit the ground for the collection of data through the help of research assistants and subsequent preparation of the research project.

### **3.7 Methods of Data Analysis**

This section puts to focus data analysis techniques used in the study. Inferences were deduced from the opinion and views of the respondents, especially those sought using open-ended items in the questionnaire. Given that the study was packaged in quantitative design, descriptive statistics was used in data analysis. Data was also analyzed using the statistical packages of social scientists (SPSS) with the help of computer. Data analysis therefore took the form of frequencies and percentages. Data was finally presented using frequency distribution on tables.

### **3.8 Operationalization of the variables**

The operationalization of the variables is explained on the basis of the conceptual framework of the study as illustrated in the table 2:1. The table indicates that the independent variables of the study; training on value addition, resource mobilization, identification of suitable marketing strategies and preservation and storage were found to have strong influence on productivity of potato farming projects in Kabondo Kasipul Sub-County.

Each of those independent variables, to some substantial extent, had the capacity to enhance productivity of potato farming projects, though the combined interplay has the greatest influence. However, the moderating variables, feeling of responsibility and personal need, had a minor influence on productivity of potato farming projects. The other extraneous variables of the study such as socio-culture factors in the form of negative attitudes of the people towards local initiatives as a possible alternative to formal employment also had some mild influence on productivity of the potato farming projects. Such negative influences of the extraneous variables were addressed by strengthening the independent variables that would enhance productivity of potato farming projects, thereby offering strong ground for the provision of employment opportunities in the industry.

Productivity of the potato farming projects was measured on the basis of the economic return that potato business persons received from selling their products. Besides, productivity of potato business was also measured from the number of people who engage in potato farming projects in contrast to the other economic activities in Kabondo Kasipul Sub-County. Other measures of productivity of potato farming projects were indicated by the increased perception of the Kabondo residents that potato business is an equal employer and the general potato supported infrastructure established in the area showing that the people's life was changing.

Value addition was measured on the grounds of the presence of potato processing plants, presence of variety of potato-related products in finished form such, as potato crisps and chips as well as flour made out of potato blended with other enriching ingredients. Identification of suitable marketing strategies was measured by the existence of potato shades that offer conducive potato marketing environment as opposed to selling the products beside the road exposing the sellers to adverse weather conditions. Marketing strategies was measured by the

establishment of strong cooperative unions that provide strong bargaining power to the potato business persons through better prices. Preservation and storage was measured on the basis of presence of preservation and storage facilities, variety of preservation and storage facilities and length of time these products take when still fresh.

**Table 3.2 Operationalization Table**

<b>Objectives</b>	<b>Variables</b>	<b>Indicator</b>	<b>Measurements Scale</b>	<b>Data Collection Method</b>	<b>Data Analysis</b>
To examine the extent to which training influences household food security.	<b>Independent</b> Training on value addition	*professional training *form of training *frequency of training *relevance of training	Nominal Ordinal Interval	Questionnaire	Descriptive statistics
	<b>Dependant</b> Productivity of potato projects	Returns from sale of potato products	Nominal Ordinal		

To determine the influence of resource mobilization on	<b>Independent</b> Resource mobilization	*types of resources. Variety of resources. Means of obtaining resources	Nominal Ordinal	Questionnaire	Descriptive statistics
Productivity of potato farming projects	<b>Dependent</b> Productivity of potato farming projects	Returns from sale of potato products	Nominal	Questionnaire	Descriptive statistics
To investigate how preservation and storage influence	<b>Independent</b> preservation and storage	*storage arrangement *variety of facilities *duration products remain fresh	Nominal	Questionnaire	Descriptive statistics
Productivity of potato farming projects	<b>Dependent</b> Productivity of potato farming projects	Returns from sale of potato products	Nominal	Questionnaire	Descriptive statistics

To assess the influence of marketing strategies on Productivity of potato farming projects	<b>Independent</b> Marketing strategies	*presence of competitive markets *formation of cooperatives *potato shades	Nominal Ordinal	Questionnaire	Descriptive statistics
	<b>Dependent</b> Productivity of potato farming projects	Returns from sale of potato products	Nominal		

### 3.9. Ethical Considerations

According to Resnik (2011), there are several reasons for adhering to ethical norms in research. Norms promote the aims of research, such as knowledge, falsifying or misrepresenting research data, promote the truth and avoid error. Moreover, since research often involves a great deal of cooperation and coordination among many different people in different disciplines and institutions, ethical standards promote the value that are essential to collaborative work, such as trust, accountability, mutual respect and fairness.

For instance, many ethical norms in research, such as guidelines for relationship, copyright, and patency policies, data sharing policies, and confidentiality and peer reviews, are designed to

protect intellectual property interest while encouraging collaborations. Many of the ethical norms help to ensure that researchers can be held accountable to the public. Besides, norms in research also help to build public support for research. People are more likely to fund the research project if they can trust the quality and integrity of research. Finally, many of the norms of the research promote a variety of important moral and social values, such as social responsibility, human rights, compliance with law, health and safety. Ethical lapses in research can significantly harm human and animal subjects, students and the public.

William M.K (2006) lists some of the ethical issues and informed consent, confidentiality and anonymity. Given the importance of the ethical issues in several ways, the researcher did not take any ones work and where someone's work was included, such were acknowledged through quotation and citation. In this study copyright and aspects of patenting were respected and a plagiarism of any form was vehemently avoided. In the entire research period, respondent's identity and confidentiality were observed such that, any data obtained was not disclosed to any other person. The researcher ensured that human subjects were fully protected, no harm or cruelty and coercion was used in the research process and the results, as promised, would be shared with those who participated in the entire research process.

## CHAPTER FOUR

### DATA ANALYSIS, PRESENTATION AND INTERPRETATION

#### 4.1 Introduction

This chapter focuses on data analysis, interpretation and presentation of information in simplified form. Data analysis was based on the variables of the study, highlighting how such variables had influence on productivity of potato farming projects in Kabondo Kasipul Sub County.

#### 4.2 Questionnaire Return Rate

Copies of questionnaire administered to the respondents who formed the study sample of 120 potato farming projects in Kabondo Kasipul Sub County. These copies of the questionnaire were mostly self administered by the research assistants given a preliminary survey revealing that most of the business persons were illiterate. Some copies of the questionnaires were given to the respondents who read, filled and were collected later by the administrators. Table 4.1 illustrates the questionnaire return rate.

**Table 4.1 questionnaire return rate**

<b>Target population</b>	<b>Sample</b>	<b>Return rate</b>		<b>Total</b>
		<b>M</b>	<b>F</b>	
<b>1,200</b>	<b>120</b>	<b>30</b>	<b>70</b>	<b>100</b>

In table 4.1, 120 copies of questionnaire were administered to the respondents and out of this number, 100 copies were returned, giving a questionnaire response rate of 83%. According to Mugenda and Mugenda (2003), a response rate refers to the percentage subjects that respond to the research tool. A response rate of 50% is deemed adequate for analysis and reporting, a

response rate of 60% is good and a response rate of 70% and over is considered very good. The study is therefore seen to have returned a superior questionnaire response rate.

### 4.3 Demographic characteristics of the respondents

This part presents the features of the respondents that were thought of as crucial to the study; as such features generally determine the responses made by individuals in their engagement for purposes of meeting their daily needs. These features include sex, age, level of education and marital status among others.

#### 4.2.1 The Age characteristics of Respondents.

This parameter of the respondents demographics was considered as significance to the study, since ordinarily, age differences determine the nature of occupations people engage in, for instance young people generally prefer getting formal employment, whereas old persons prefer any other income generating activity provided that tangible gains are assured. The respondents were requested to complete the questionnaire on this issue and their responses are reflected in table 4.2

**Table 4.2 Age characteristics of assignment**

<b>Age in year</b>	<b>Frequency</b>	<b>Percentage</b>
Below 18 years		
18 – 20	02	2.00
21 – 30	16	16.00
31 – 40	51	51.00
Above 40	31	31.00
<b>Total</b>	<b>100</b>	<b>100</b>

Table. 4.1 indicates that, out of the 100 respondents whose completed copies of questionnaire were received, 51 (51% were between the age of 31 – 40 years old, 31(31%) fell in the age above 40 years, 16 (16%) were in the age between 21 – 30 years and 2 (2%) fell below 18 years old.

The implications of the above figures is that respondents who was below 18 years were few in potato farming business, since this age group is expected to be in schools, especially primary school level. However, the respondents who fell in the age range of 21 – 30 years were also few, meaning that majority of that age bracket are either in secondary schools, colleges or looking for formal employment, as they despise engaging in local community initiatives. Majority of the respondents fell in the age bracket of 31 years and above. This is a group of experienced people who may have tried working away from home, but chosen to stabilize exploiting local resources as such respondents were already bearing the heavy burden of providing for the family.

#### **4.3.2 The gender characteristics of the respondents**

Gender issues are generally very significant in the choice of occupation given that male and females are socially orientated differently presupposing them to differ greatly on gender roles. This feature was therefore considered significant to the study on the basis of the above explanation. The respondents were asked to fill the questionnaire indicating their gender and their responses noted are as depicted in table 4.2

**Table 4.2: Gender characteristics of the respondents**

<b>Sex</b>	<b>Frequency</b>	<b>Percentage</b>
Male	18	18
Female	82	82
<b>Total</b>	<b>100</b>	<b>100</b>

Table 4.2 reveals that out of the 100 respondents whose completed copies of questionnaire were received, 82 (82%) were female and 18(18%) were male, implying that women normally engage in enterprises that are regarded as simple and done locally. Men on the other hand look down upon local initiatives, preferring looking for better jobs away from home. Potato farming project being agriculturally related, is normally embraced by women since it is women who mostly engage in subsistence agriculture in Kabondo Kasipul Sub County.

### 4.3.3 Marital status of the respondents

Marital status was assumed to be significant to the study given that potato farming project, being an income generating activity, is considered a preserve of the older community members bearing the responsibility of providing for members of the family. In this respect, the respondents were asked to fill the questionnaire stating their marital status and their responses were captured as illustrated in table 4.3.

**Table 4.3: Respondents' marital status**

<b>Marital status</b>	<b>Frequency</b>	<b>Percentage</b>
Married	36	36
Widowed	41	41
Single	10	10
Divorced	12	13
<b>Total</b>	<b>100</b>	<b>100</b>

Table 4.3 indicates that, one of the respondents who completed the questionnaire, 36(36%) were married, 41(41%) widowed, 13(13%) divorced and 10(10%) were single. The implication of the above statistics is that widowed respondents formed the majority of the potato business persons

in Kabondo Kasipul Sub County, since these have nobody to depend upon, yet were taking care of their children as single parents. Married respondents came second, given that the economic situation of the country at present demanded that both the spouses engage in some income generating activities to help cushion each other from the ravaging effects of scarcity of resources. The number of divorced respondents was slightly higher than the single respondents because, the divorced just like other marital orientations require that means of survival have to be sought to take care of the dependants, as well as fending for oneself, hence engagement in potato farming projects.

#### **4.3.4 Level of Engagement in potatoes business.**

This dimension of potato farming projects was considered to be of great significance to the study, for it would help expose some of challenges being encountered by project initiators working in different project areas. In the light of this , the respondents were asked to give information about the level of engagement in potato farming projects and their responses recorded as illustrated in table 4.4

**Table 4.4. Level of engagement in potato business**

<b>Level of engagement</b>	<b>Frequency</b>	<b>Percentage</b>
Farming	82	82
Marketing	10	10
Agency	6	6
Other	2	2
<b>Total</b>	<b>100</b>	<b>100</b>

Table 4.4 reveals that, out of 100 respondents whose copies of questionnaire were received, 82(82%) engaged in potato business at the level of farming, 10(10%) at the level of marketing, 6(6%) at the agency level and 2(2%) at other forms of engagements.

Implied by the information in table 4.4 is that majority of potato business persons in Kabondo Kasipul Sub County engaged in the projects at farming level. This could help to explain why they had not been able to fetch good returns, since there was no attempt to add value to their raw agricultural products.

Marketing and agency levels represent those potato business persons, though few, could be the ones who highly benefit from the efforts of the potato farmers, as they obtain them cheaply from the farms and relay to those who intend to process them into finished industrial products fetching a lot of money.

#### **4.4 Professional training and potato productivity**

The researcher believed that level of professional training that is revealed by the potato farming project initiators would be of great significance to the study, for such aspects of training would place potato business persons into better position to make such interventions productive. The respondents were asked to complete the questionnaire indicating their highest professional trainings and their respondents captured as illustrated in table 4.5

**Table 4.5 levels of professional training and productivity of potato business**

<b>Level of training</b>	<b>Frequency</b>	<b>Percentage</b>
Certificate	28	28
Diploma	04	4
Degree	00	0
Other	68	68
<b>Total</b>	<b>100</b>	<b>100</b>

Table 4.5 reveals that, of the 100 the respondents who completed the questionnaire, 28(28%) had professionals training at a certificate level, 4(4%) obtained training at diploma level and none acquired training at a degree level. however, majority of the potato business persons in Kabondo Kasipul Sub County had not attained substantial formal training to enable them to effectively carry out their projects roles, as represented by other at 68(68%). The category other was comprised mostly of people who did not go beyond form four levels.

Implied by the training orientations of those respondents was that those who had attained higher and competitive trainings looked down upon engaging in local interventions, as these initiatives had therefore attracted people with humble education who were disadvantaged in securing other forms of occupational engagement and hence found themselves doing potato business.

#### **4.5.1 Relevance of training on value addition on productivity of potato farming projects.**

This item was considered very critical to the study as it would help evaluate the effectiveness of the form of training received by the trained potato project members. The respondents were requested to fill the questionnaire stating the nature of training obtained and their responses were recorded as depicted in table 4.6

**Table 4.6 Relevance of training on value addition on productivity of potato projects.**

<b>Training form</b>	<b>Frequency</b>	<b>Percentage</b>
Potato farming	10	10%
Business management	2	2
Marketing strategies	0	0
Other	88	88
<b>Total</b>	<b>100</b>	<b>100</b>

Table 4.6 indicates that only 10(10%) of the reached potato project members had acquired training on potato farming, 2(2%) had training in business management, 88(88%) had the other category and none trained on marketing strategies. The implication was that even the few who may have trained hardly acquired training relevant to their respective engagements, hence did not display ability to add value to their interventions.

#### **4.5.3 Nature of training and potato productivity**

This item was believed to be of great significance to the study, as it would reveal the importance potato business persons attached to training for purposes of making their business productive. The respondents were therefore asked to complete the questionnaire stating the nature of training and their responses recorded as depicted in table 4.8

**Table 4.8 Nature training on productivity of potato farming projects**

<b>Nature of training</b>	<b>Frequency</b>	<b>Percentage</b>
Formal training	4	4
Workshops and seminars	8	8
Use of training software	0	0
Other	88	88
<b>Total</b>	<b>100</b>	<b>100</b>

Table 4.8 reveals that, out of the 100 respondents who filled the questionnaire, 4(4%) acquired formal training, 8(8%) obtained training offered through workshops and seminars and none obtained training using computer software. The table also indicates that majority of the potato project members learned the trade through experience by way of remote interactions, 88(88%).

The implication in this case is that it was not imagined by the potato project members that these projects also required knowledge and skills, hence potato farming projects remained less productive, despite availability of options even to establish modern potato processing industry.

#### **4.5 Diversity of resources and potato productivity**

The researcher felt that the extent to which diverse resources were put to use in the entire potato projects from farming to delivery of products was crucial in determining the level of productivity. Respondents were asked to complete the questionnaire stating the type of resources mobilized for use in their projects and table 4.9 illustrates their responses.

**Table 4.9 Diversity of resource and potato productivity.**

<b>Resource diversity</b>	<b>Frequency</b>	<b>Percentage</b>
Potato stocks	66	66
Financial resource	5	5
Human labour	18	18
Other	11	11
<b>Total</b>	<b>100</b>	<b>100</b>

Table 4.9 indicates that, of the 100 respondents who completed the questionnaire 66(66%) stated using potato stocks for planting, 18(18%) indicated human labour, 5(5%) mentioned financial resources and 11(11%) stated other category, including acquisition land for cultivating potatoes.

The above statistics imply that potato business was engaged in at a simple level where the greatest resources that were being used took the form of potato stocks for plating. Potato farmers did not see this as an undertaking that required serious mobilization of diverse resources including sourcing for funds from loaning institutions. In other words potato farming projects should have been perceived as a form of investment to ensure that such initiatives became productive.

#### **4.5.1 Means of obtaining resources on productivity of potato farming projects.**

The researcher believed that the means of obtaining resources used in the potato projects would be significant to the study. This was because productivity of potato farming projects would rely on establishment of a network of trade relationships, hence creating a formidable potato industry. The respondents were therefore asked to fill the questionnaire indicating the means of obtaining resources and their responses captured as illustrated in table 4.10

**Table 4.10 Means of obtaining resources on productivity of potato farming projects.**

<b>Source of resource</b>	<b>Frequency</b>	<b>Percentage</b>
Personal savings	31	31
Locally available resource	56	56
Bank loans	9	9
Donations	0	0
Others	4	4
<b>Total</b>	<b>100</b>	<b>100</b>

Table 4.10 indicates that, of the 100 respondents who completed the questionnaire, 56(56%) stated obtaining their resources from local environment, such as potato stocks, 31(31%) cited obtaining resources from their personal savings, 9% mentioned acquiring the resource used in potato getting funds from banks through loans, and none mentioned donations, with 4(4%) being clustered under other category.

Implied by the statistics above is that potato farming projects had not attracted use of diverse resources, since it still heavily depended on the locally available resources, such as potato stocks for planting. Potato farming projects in Kabondo Kasipul Sub County was therefore done on small scale that only relied mostly on personal savings, with little attempt to source for loans from banks to expend on such initiatives.

#### **4.6 Marketing strategies on productivity of potato farming projects**

This variable of the study was considered to be of great significance to the study. In most businesses, strategies of marketing are considered very important, for they are means of placing products to the customers at their convenience.

#### 4.6.1 Forms of marketing strategies on productivity of potato farming projects.

This aspect of marketing was of great importance to the study for it would give the potato project members opportunity to bargain for better prices of their products. This is because better prices can only be obtained when strategies of marketing are appealing. On this account, The respondents were asked to fill the questionnaire stating the marketing strategies used and their responses recorded as shown in table 4.12

**Table 4.11 Forms of marketing strategies on productivity of potato farming projects.**

<b>Marketing farms</b>	<b>Frequency</b>	<b>Percentage</b>
Individually	44	44
In groups	0	0
Through middlemen	56	56
Other	0	0
<b>Total</b>	<b>100</b>	<b>100</b>

Table 4.11 indicates that; of the 100 respondents who completed the questionnaire, 44(44%) stated that they were selling their potatoes individually, 56(56%) cited marketing their commodities through middle men, with none selling through cooperatives.

The implication of the above figures is that potato business persons did not receive attractive pay for their products, since they lacked bargaining power against the buyers. Individuals would sell their products generally in a throw – away, attempting to desperately get money to take care of their immediate needs. It was also established that a high percentage of the potato business persons sold their products to consumers through middle – men or agents who exploit them, taking advantage of the reduced bargaining powers of the potato business persons. Table 4.11

also portrays that one of the potato business persons sold their products in groups, awareness of the significance of formation of a cooperative as a superior marketing strategy that would enhance their bargaining powers and subsequently lead to productivity of such initiatives.

**4.6.2 Designated potato selling places on productivity of potato farming projects.**

It was assumed that presence of designated places in the form of potato shades would enhance the marketing options for the potato business persons leading to better gains. Such places would provide opportunity for individual business persons to sell in groups thereby enhancing their bargaining power and preserving of their products.

The respondents were requested to fill the questionnaire stating their selling areas and their responses presented as illustrated in table 4.12

**Table 4.12 Designated potato selling places on productivity of potato farming projects**

<b>Place</b>	<b>Frequency</b>	<b>Percentage</b>
Roadsides	48	48
In farms	40	40
Potato shade	12	12
Other	0	0
<b>Total</b>	<b>100</b>	<b>100</b>

Table 4.12 reveals that of the 100 respondents who responded to the questionnaire, 48(48%) indicated selling their products on the road sides, 40(40%) stated selling their potatoes in their farms to agents and 12(12%) cited selling their products in potato shades.

Implied by the statistics is that those who were selling on the road sides were individual sellers who were desperate to dispose their products just for, at least a pay, to sort out their immediate

family needs. Those who sold in the farms are the ones who were exploited by the agents for there were lack of standard ways of determining prices for certain quantities of potatoes. However, the small percentage of the potato business persons who demanded better pay constructed potato shades where buyers could meet them and also ensured that the quality of their products were ascertained. In other words, majority of potato business persons were engaged in poor marketing strategies that meant such initiatives would remain unproductive.

#### 4.6.3 Nature of potato products on productivity of potato farming projects

This parameter was considered significant to the study given that raw forms of certain products normally fetch less prices in contract to processed finished commodities. In the light of this, the respondents were asked to complete the questionnaire indicating the nature of the potato products and their responses captured as displayed in table 4.13

**Table 4.13 Nature of potato products on productivity of potato farming projects.**

<b>Nature</b>	<b>Frequency</b>	<b>Percentage</b>
Raw form	94	94
Processed form	4	4
Packaged form	2	2
Other	0	0
<b>Total</b>	<b>100</b>	<b>100</b>

Table 4.13 indicates that 94(94%) of the respondents who responded to the questionnaire stated selling their products in farms, 4(4%) cited selling their products in processed form, especially by preparing potato chips and 2(2 %) stated packing their products after processing.

Implied is that potato business in Kabondo Kasipul Sub County was engaged in raw forms, with little to add value through industrial processing into different potato products. Besides, a mild form of processing took the form of preparing potato chips that would not compete in a wide market for these also lacked quality standards. Such revelations would help to explain why potato farming projects in Kabondo Kasipul Sub County remained relatively unproductive, despite, indications that such local project initiatives could offer opportunity for economic development like other businesses.

#### **4.7. Influence of preservation and storage on productivity of potato farming projects**

In the study, the variable preservation and storage was measured on the basis of presence of preservation and storage facilities, variety of preservation and storage facilities and accessibility of preservation and storage facilities.

##### **4.7.1 Influence of presence of preservation and storage facilities on potato productivity**

In this study, the researcher operated on the assumption that the presence of preservation arrangements to the potato project initiators was crucial to productivity of potato farming projects on the basis that these products would remain fresh for relatively long duration awaiting consumers. In the light of this reality, the respondents were asked to complete the questionnaire indicating the extent to which they agreed or disagreed that they had preservation and storage arrangement for their potato products and their responses noted as displayed in table 4.15

**Table 4.14 Presence of preservation and storage facilities on potato productivity**

<b>Presence</b>	<b>Frequency</b>	<b>Percentage</b>
Strongly agree	00	00.00
Agree	04	04.00
Neutral	00	00.00
Disagree	94	94.00
Strongly disagree	02	02.00
<b>Total</b>	<b>100</b>	<b>100.00</b>

Table 4.14 indicates that, out of the 100 respondents who filled the questionnaire, 94(94%) stated that they disagreed that there was arrangement for preservation and storage, 4(4%) disagreed and 2(2%) strongly disagreed, yet none neither strongly disagreed nor neutral.

Implied is that potato farming project initiators in Kabondo Kasipul Sub County were unable to put in place effective preservation and storage measures for their products hence were unlikely to embrace productive strategies in their interventions. It appeared that just a small percentage was in possession of preservation and storage facilities, negating any attempt of undertaking a productive project venture.

#### **4.7.2 Influence of variety of preservation and storage facilities on potato productivity**

The presence of preservation and storage arrangement for the potato products may not be an effective measure of productivity, rather the variety of these facilities available for use to the project initiators do. On this account, the respondents were asked to fill the questionnaire stating the types of facilities used for preservation and storage and their responses captured as illustrated in table 4.15

**Table 4.16 Influence of variety of preservation and storage facilities on potato productivity**

<b>Preservation type</b>	<b>Frequency</b>	<b>Percentage</b>
Sacks and bags	90	90.00
Granary	00	040.00
Silos	00	00.00
Modern facilities	02	02.00
Other	08	08.00
<b>Total</b>	<b>100</b>	<b>100.00</b>

Table 4.16 indicates that 90(90%) of the respondents who responded to the questionnaire stated preserving their products in sacks and bags, 2(4%) indicated using modern preservation and storage facilities and none stated granaries and silos, with 8(08.00%)citing the other category.

Implied is that potato farming projects in Kabondo Kasipul Sub County could hardly be productive as most of these project initiators were using crude preservation and storage facilities that could not keep these products fresh for long. This is due to the popularity of sacks and storage bags with little attempt o embrace modern facilities.

#### **4.7.3 Influence of access to preservation and storage facilities on potato productivity**

Preservation and storage facilities could be available, but not to the extent to which they would be accessed by the potato project initiators. This would mean that only few individuals in possession of massive resources would engage in productive business with majority being stuck to ordinary containers. The respondents were therefore asked to complete the questionnaire indicating how accessible the preservation and storage facilities were and their responses noted as depicted in table 4.17

**Table 4.17 Influence of access to preservation and storage facilities on potato productivity**

<b>Preservation type</b>	<b>Frequency</b>	<b>Percentage</b>
Very accessible	00	00.00
Accessible	06	06.00
Neutral	00	00.00
Less accessible	44	44.00
Inaccessible	50	50.00
<b>Total</b>	<b>100</b>	<b>100.00</b>

Table 4.17 indicates that 06(06.00% of the respondents who responded to the questionnaire stated that preservation and storage facilities were accessible, 44(44%) stated less accessible, 50(50%) indicated that these facilities were inaccessible and none mentioned very accessible. especially by preparing potato chips and 2 % stated packing their products after processing. Implied is that potato farming projects in Kabondo Kasipul Sub County were hardly productive as even preservation and storage facilities were inaccessible, hence it was difficult to preserve them for better prices due to their ease of perisherbility.

## CHAPTER FIVE

### SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

#### 5.1 Introduction

This section presents summary of the study findings on the basis of the study variables and their influence on productivity of potato farming projects in Kabondo Kasipul Sub County. Featured also in this chapter are the conclusions drawn from the study and recommendations, both for policy formulation and further research.

#### 5.2 Summary of the study findings.

The study was undertaken in Kabondo Kasipul Sub County focusing on factors influencing productivity of potato farming projects. The study sample was drawn from the various trade centres in Kabondo Kasipul Sub County such as , Mapera, Kadongo, Kodada, Nyapalo and Chabera.

Copies of the questionnaire were administered to the respondents who formed the study sample of 120 potato farming projects members in Kabondo Kasipul Sub County. These copies of the questionnaire were mostly self-administered by the research assistants, given a preliminary survey revealing that most of the potato dealers were illiterate. Of the 120 copies of questionnaire administered to the respondents, 100 copies were returned completely filled, giving a questionnaire response rate of 83%.

On the demographic features of the respondents, ordinarily age differences determine the nature of occupations people engage in, for instance young people generally prefer getting formal employment, whereas old persons prefer seeking livelihood anywhere provided returns are guaranteed.

It was revealed in the study that respondents who were below 18 years were few in potato farming projects, since this age group is expected to be in school, especially primary school level. However, the respondents who fell in the age range of 21 – 30 years were also few, meaning that majority of that age bracket are either in secondary schools, colleges or looking for formal employment, as they despise engaging in local initiatives.

Majority of the respondents fell in the age bracket of 31 years and above. This is a group of experienced people who may have tried working away from home but chose to stabilize exploiting local resources; as such respondents were already bearing the heavy burden of providing for the family.

Gender issues are generally very significant in the choice of occupation given that males and female are socially oriented differently presupposing them to differ greatly on gender roles.

Potato farming projects, as with other agriculturally related activities, is normally embraced by women since it is women who mostly engage in subsistence agriculture in Kabondo Kasipul Sub County.

On the training orientations of the respondents, the study established that those who had attained higher and competitive trainings looked down upon engaging in potato farming projects. Moreover, the study also intimated that majority of the potato project members learned the trade through experience by way of remote interactions. It was not imagined by the potato project members that these projects also required knowledge and skills, hence even potato farming projects remained less productive despite availability of options even to establish modern potato processing industry.

The researcher felt that the extent to which diverse resources were put to use in the entire potato projects from farming to delivery of products was critical in determining productivity of the projects. Established from the study was that potato farming projects were engaged in at a simple level, where the greatest resources that were being used took the form of potato stocks for planting. Potato farmers did not see this as an undertaking that required serious mobilization of diverse resources including sourcing for funds from lending institutions. In other words potato farming projects should have been perceived as a form of investment to ensure that such initiatives became productive.

Potato farming projects had not attracted use of diverse resources, since it still heavily depended on the locally available resources, such as potato stocks for planting. Potato farming projects in Kabondo Kasipul Sub County was therefore done on small scale that only relied mostly on personal savings, with little attempt to source for loans from banks to expand such initiatives.

In most businesses, strategies of marketing are considered very important, for they are means of placing products to the customers at their convenience.

This aspect of marketing was of great importance to the study for it would give the potato project members opportunity to bargain for better prices of their products. These project members did not receive attractive pay for their products, since they lacked a bargaining power against the buyers. Individuals would sell their products generally in a throw – away in attempting to desperately get money to take care of their immediate needs. It was also established that a high percentage of the potato business persons sold their products to consumers through middle – men or agents who exploit them, taking advantage of the reduced bargaining powers of the potato business persons.

It was assumed that presence of designated places in the form of potato shades would enhance the marketing options for the potato business persons leading to better gains. Such places would provide opportunity for individual business persons to sell in groups thereby enhancing their bargaining power and preserving of their products. The study revealed that those selling on the road sides were individual sellers who were desperate to dispose their products just for at least a pay, to sort out their immediate family needs. Those who sold in the farms on the other hand were the ones who were exploited by the agents for there was lack of standard way of determining prices for certain quantities of potatoes. However, the small percentage of the potato business persons who demanded better pay constructed potato shades where buyers could meet them and also ensured that the quality of their products were ascertained.

In the study, the variable preservation and storage was measured on the basis of presence of preservation and storage facilities, variety of preservation and storage facilities and accessibility of preservation and storage facilities.

It was revealed that potato farming project initiators in Kabondo Kasipul Sub County were unable to put in place effective preservation and storage measures for their products hence were unlikely to embrace productive strategies in their interventions. It appeared that just a small percentage was in possession of preservation and storage facilities, negating any attempt of undertaking a productive project venture.

The presence of preservation and storage arrangement for the potato products may not be an effective measure of productivity, rather the variety of these facilities available for use to the project initiators do. The study noted that potato farming projects in Kabondo Kasipul Sub County could hardly be productive as most of these project initiators were using crude

preservation and storage facilities that could not keep these products fresh for long. This is due to the popularity of sacks and storage bags with little attempt to embrace modern facilities.

Preservation and storage facilities could be available, but not to the extent to which they would be accessed by the potato project initiators. This would mean that only few individuals in possession of massive resources would engage in productive business with majority being stuck to ordinary containers. In this respect, potato farming projects in Kabondo Kasipul Sub County were hardly productive as even preservation and storage facilities were inaccessible; hence it was difficult to preserve them for better prices due to their ease of perishability.

### **5.3 Conclusion**

In conclusion, the study established that potato farming projects in Kabondo Kasipul Sub County remained one of the most non-productive project ventures, despite the presence of opportunities in this industry. Potato farmers were being exploited by the middle-men who were purchasing the products from the farms with lack of standardized pricing. Even in circumstances where the potato business persons were selling their commodities to the customers, they were often doing this as individuals which greatly reduced their ability to bargain for better prices. Those potato products were also sold along the roads creating the impression of oversupply thereby lowering the demands significantly leading to poor prices.

Moreover, there was disregard to constructing potato shades which exposed the potato products to adverse weather conditions. It was also established that potato business persons did not possess relevant substantial training on value addition to enrich their products; hence such projects were done without any imagination of adding value to them to enhance productivity. Moreover, modern preservation and storage facilities had not been embraced in order to ensure freshness of the potato products, despite being perishable.

Finally, the study established that productivity of potato farming projects was greatly influenced by such factors by training of business persons to embrace best business management practices, mobilization of resources to make potato projects an investment, availability of modern preservation and storage facilities and adoption of superior marketing strategies such as, formation of cooperatives, construction of designated places for selling and value addition through processing into various potato products.

#### **5.4. Recommendations.**

From the study, recommendations were suggested into two perspectives, recommendations for policy formulation and further research.

##### **5.4.1 Recommendations for policy formulation**

Influence of training on value addition on productivity of potato farming projects; the study revealed that potato farming projects remained unproductive because the business persons did not have substantial training to equip them with required knowledge and skills to become innovative for purposes of enriching such initiatives.

The researcher therefore recommends that the ministry of Agriculture should formulate and strengthen implementation of practices that are geared towards equipping farmers with knowledge of engaging in productive farming activities. Concerning contribution of mobilization of resources on productivity of potato farming projects; the study revealed that resource mobilization was poorly done in such manner that most potato farmers relied mostly on potato stocks with less attention paid to sourcing for funds from financial institutions to invest in their projects. The researcher recommends that financial institutions should formulate policies that are favorable to small scale business persons to enhance their efforts in making meaningful contribution to the economy.

The study revealed that the potato farming project initiators adopted poor marketing strategies. This led to exploitation by middlemen who bought at throw-away prices and finally selling at higher prices to the end users. The researcher recommends that the department of trade should formulate policies that encourage business persons to form cooperatives to help boost their bargaining power to attract prices. Finally, modern preservation and storage facilities be offered to local farmers in order to ascertain and maintain high quality of the potato products.

On the basis of the study gaps that still exists in this area, the researcher recommends that the following areas to be considered for further research:

1. Do factors influencing productivity of farming projects in Kabondo Kasipul Sub County apply to viability of brick making projects in most places in Kenya?
2. What measures should be put in place to enhance productivity of sand harvesting in the greater Rachuonyo district?
3. What other factors influence productivity of potato farming projects in Kasipul Kabondo Sub County?
4. What suitable measures should be put in place to enhance viability of local agricultural initiatives in Kabondo Kasipul Sub County?

## REFERENCES

- Adams Dawood (2006), *Popularity of subject potatoes in the sugar industry in Brazil: A case of sugar production*, Alley press
- Aduku Nani. (2009), *Innovation for value to boost productivity of low-cost agricultural products: value addition and superior marketing strategies*, Rayance press, Nigeria.
- Aggrey Chelule (2001), *The Training Needs for an Industry*, Pakala Press.
- Allion Drecker (2002), *Factors influencing productivity of an industrial process; low cost production of sugar in Brazil*, Alley press
- Amanda, M.K (2011), *Marketing Strategies and Business Development: A Case of Local Agriculture industry*, Kwale, Kenya.
- Amoth David. J(2002), *Productivity and Efficiency: Parameter of Industrial Productions. A Workshop Presentation*, Transmara, Kenya.
- Anwan Jamal (2008), *Facing the Productivity challenges in Local Agriculture Manufacturing Sector. A World Vision Report on Poverty Eradication in Kwale, Kenya.*
- Barmighan,J.S (2004), *Factors influencing Productivity of Industrial Production: Focus on the Industrial Training Needs*, University of California., U.S.A.
- Cameron Woods (2002), *Influence of technological advancement on the growth of local industries: productivity and its associated challenges*, ndan publishing.
- Daniel Wolf (2001), *Influence of marketing strategies on the growth of a senture,debemore publishing*, hellyance, Cuba.

Derine Anne (2004), *Influence of local resources on economic development. Research paper, journal of development associates Argentina*

Hagg Nor (2009), *Factors Influencing the Production Process in Industries: A Case of the Production of Pyrethrum Products in Rift Valley, UNDP Report, and Nairobi, Kenya.*

Home. M.S. (2002), *Measure of productivity in an economic venture, palmose publishing, Singapore.*

Hosni Edally. (2009), *Productivity and the cost of innovation: value addition initiatives, julana, Egypt.*

Jack Seme (2009), *Factors influencing Productivity of Locally Exploited Natural Resource, Association of Industry Professionals.*

Jamal Young (2004), *Marketing Superiority for Superior Business Gains: SME's Industry in India Publishers.*

Jenny Penn (2006), *Influence of marketing strategies on productivity of local agriculture products Hemington Publishing.*

Kitoto Job (2006), *Using Human Capital for Industry's Capital Gains; Best Management Practices for Productivity. A Workshop Paper, Nakuru Kenya.*

Lanin Saida (2001), *Influence of Training on Productivity of an Industrial Undertakings, Pennilsm Publishing, Daban*

Lavender,J.J (2002), *Focusing on Productivity of Economic Ventures in Local Set Ups for Jobs Creation. A UNDP Report, Papua New Guinea.*

- Michael James (2008), *Factors influencing Productivity of Agriculture Based Produce: Barriers to Exploitation through Superior Marketing Strategies, University of Nairobi.*
- Mogore Nganya (2010), *Influence of Value Addition on Productivity of sweat Potato Business in Juja Town and it does environ. Kenyatta University*
- Monomy, G.Y (2010), *Factors influencing productivity in public sector in Brazil: a case study of public supported local industries. 41424 – 0492sn, Brazil*
- Mutisya J.O (2010), *Factors influencing Sustainability of Maize Production in Kamba Land, Machakos, Kenya.*
- Obasemi Obadeye (2008) *Productivity of yams in Nigeria: a case of yams productivity in*
- Onshwal,J.L (2002), *Training influence on Sustained Industries Productivity, SME's Associates, Punjab, India.*
- Oyuga Henry. (2011), *Influence of natural resource on sustainable development: effective e*
- Peterson Jeremy(2004), *Factors influencing productivity of local initiative in the rural division of jong, 246332- 04km, sangwan, china xploitation for n*
- Influence of Marketing Strategies on Growth of an Industry: taking*
- Prusma Helly (2003), *Care against Middle men, Lari Division, Kenya ations gains, Nairobi, Kenya.*
- Secret John (2008), *Training and education for productivity in industrial sectors: a case of the ep 2, thika, Kenya*
- Shamala,S (2006), *Value Additives for Growth of Local Agricultural Initiatives for : Agriculture for Business, Ottawa, U.S.A.*

- Sign jaol (2002), *Training in Skills and Knowledge for Industry Growth. A Case of College Industry in India.*
- Sodo Jeremiah (2010), *Factors Influencing Viability of Local Initiatives: Local Parameters for National Growth, EPZ Industry. Kenya*
- Taban K. N. (2004), *Enriching local commodities for space in the worlds market. A workshop paper, dollian publishers kampala.*
- Tremony, S.L (2004), *Factors for fast Industry Growth. A Case of Industry Innovation for Value Addition; Associates of Local Agriculture Initiatives, Argentina.*
- Wahuhu Caroline (2010), *Factors influencing Productivity of Potatoe Farming in Lari Division. Research Paper, Moi University*
- Walker Devies (2008) *Factors influencing viability of local initiative in boosting life experiences, a workshop paper AK 24241 Venezuela*
- Wole M.S (2008), *Factors influencing Productivity of Agricultural Sectors for Economic Development, Ogoni, Lagos.*
- Zainabu Nekesa (2008), *Influence of Training on the Growth of Business in Kwale District. A Research Paper, University Of Nairobi.*
- Zawadi Yaya (2004), *The influence aspects of Training on Best Management Practices on Industry Growth: A Case of the Colleges in India.*

**APPENDIX A: LETTER OF TRANSMITTAL.**

HELLEN OWINO,

P.OBOX 48,

OYUGIS

17/08/2014.

Dear Sir/Madam,

I am a student of Master of Arts in project planning and management at the University of Nairobi. I am conducting a research study to investigate factors influencing productivity of potato farming projects in Kabondo Kasipul Sub-County. The study is undertaken purely on academic purpose and not any other reason. Your opinion and views are important for successful accomplishment of this study. Your co- operation will be highly appreciated and any information provided shall be treated with privacy and confidentiality deserved.

Thanks

Yours Sincerely,

Hellen Owino

**APPENDIX B: RESEARCH QUESTIONNAIRE**

**SECTION A: DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS**

1. Indicate your age in years

- a) Less than 20. [ ]
- b) 20-30 [ ]
- c) 30-40 [ ]
- d) 40-50 [ ]
- e) Above 50 [ ]

2. State your gender

- a) Male [ ]
- b) Female [ ]

3 .indicate your marital orientation

- a) Single [ ]
- b) Married [ ]
- c) Widowed [ ]
- d) Divorced [ ]
- e) Others (specify)

.....

4. State your level of education

- a) Primary and below [ ]
- b) Secondary [ ]
- c) Tertiary [ ]
- d) Degree [ ]

e) Other (specify) .....

5. In which category of potato farming project are you involved?

a) Farming [ ]

b) Marketing [ ]

c) Agency [ ]

d) Extension [ ]

e) Other (specify).....

6. For how long have you been in the potato farming industry?

a) Below one year [ ]

b) 1-5 [ ]

c) 6-10 [ ]

d) 11-15 [ ]

e) 15-20 [ ]

f) Above 20 [ ]

**SECTION B: STUDY VARIABLES**

7. Indicate your highest professional training related to value addition of your potato products.

a) Certificate and below [ ]

b) Diploma [ ]

c) Degree [ ]

d) University [ ]

e) Other (specify)..... [ ]

8. Indicate the type of training you have obtained for value addition of you potato products.

- a) Agricultural extension [ ]
- b) Business management [ ]
- c) Industrial processing [ ]
- d) Agricultural Engineer [ ]
- e) Other (specify)..... [ ]

9. State the form of training you normally embrace?

- a) Formal training [ ]
- b) Informal training [ ]
- c) Workshops and seminars [ ]
- d) Other (specify)..... [ ]

10. How frequently do you engage in training on value addition of your potato products?

- a) Very frequently [ ]
- b) Frequently [ ]
- c) Less frequently [ ]
- d) Occasionally [ ]
- e) Other (specify)..... [ ]

11. Which variety of potato products do you prefer training on?

- a) Raw potato products [ ]
- b) Chips [ ]
- c) Crisps [ ]
- d) Enriched flour [ ]
- e) Other (specify).....

12. To what extent do you agree or disagree that training on value addition influences productivity of potato farming projects in Kabondo Kasipul Sub-County?

- a) Strongly agree [ ]
- b) Agree [ ]
- c) Neutral [ ]
- d) Disagree [ ]
- e) Strongly disagree [ ]

13. State the type of resources you often use in your potato farming projects.

- a) Potato stocks [ ]
- b) Financial resource [ ]
- c) Human labour [ ]
- d) Extension services [ ]
- e) Other (specify).....

14. How often do you obtain the resources used in your potato farming projects?

- a) Local materials [ ]
- b) Financial institutions [ ]
- c) Government subsidy [ ]

- d) Personal saving [ ]
- e) Other (specify).....

15. To what extent do you agree or disagree that you often mobilize for diverse resources for use in you projects?

- a) Strongly agree [ ]
- b) Agree [ ]
- c) Neutral [ ]
- d) Disagree [ ]
- e) Strongly disagree.....[ ]

16. In your own opinion, explain the influence of resource mobilization on productivity of potato farming projects in Kabondo Kasipul Sub-County.....  
.....

18. To what extent do you agree or disagree that there are preservation and storage facilities for potato products in Kabondo Kasipul Sub County?

- a) Strongly agree [ ]
- b) Agree [ ]
- c) Neutral [ ]
- d) Disagree [ ]
- e) Strongly disagree [ ]

19. Indicate the type of preservation and storage facilities used to maintain quality of your potato products.

- a) Sacks and Gunny Bags [ ]
- b) Home Made Granary [ ]

- c) Modern Stage facilities [ ]
- d) Other (specify).....

20. Indicate the basis of offering preservation and storage facilities to farmers

- a) Size of the farms [ ]
- b) Farming experience [ ]
- c) Resource availability [ ]
- e) Professional training [ ]
- f) Others (specify).....

21. How accessible are the preservation and storage facilities to potato project initiators?

- a) Very accessible [ ]
- b) Accessible [ ]
- c) Less affordable [ ]
- d) Hardly accessible [ ]

22. Explain, in your own opinion how preservation and storage influence productivity of potato farming projects in Kabondo Kasipul Sub-County.

.....

.....

23. To what extent do you agree or disagree that there are competitive markets for your potato farming projects in Kabondo Kabondo Sub County?

- a) Strongly agree [ ]
- b) Agree [ ]
- c) Neutral [ ]
- d) Disagree [ ]

e) Strongly disagree [ ]

24. Which variety of markets do you access for selling your potato products?

a) Village markets [ ]

b) Urban Centers [ ]

c) Regional Markets [ ]

d) Export Markets [ ]

25. Indicate the type of marketing strategies you often use for disposing your surplus farm produce

a) Agency marketing [ ]

b) Individual marketing [ ]

c) Cooperative marketing [ ]

d) Brokerage [ ]

26. Indicate the type of potato selling designated places available in Kabondo Kasipul Sub-County.

a) Road side [ ]

b) Potato shades [ ]

c) In farms [ ]

d) Others (specify) [ ]

27. In your own opinion, explain the influence of marketing on productivity of potato farming projects on food security in Kabondo Kasipul Sub-County.

.....

.....

.....