

**FACTORS INFLUENCING MARKETABILITY OF MAIZE
PRODUCE AMONG SMALLHOLDER FARMERS' IN SOY SUB-
COUNTY UASIN GISHU- KENYA**

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DECLARATION

This research project is my original work and has not been presented for examination in this institution or any other institution.

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This research project has been submitted with my approval as the University Supervisor

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.....

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DEDICATION

To my Mother Sarah Rutto, my brother Tom Rutto and my sisters Regina and Daisy

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ABBREVIATIONS AND ACRONYMS

ASFG : African Smallholder Farmers Group

CBO : Community Based Organisation

FAO : Food and Agriculture Organizations

GDP : Gross Domestic Product

KI : Key Informants

SHFS : Small Holding Farmers

SPSS : Statistical Package for Social Science

ABSTRACT

According to the study conducted by the Food and Agriculture Organizations (FAO) entitled, “Smallholder integration in changing food markets” pointed out that smallholder producer face widely different sets of issues and constraints to market participation. Therefore, in this regards, the purpose of this study was to investigate the factors affecting the marketability of the maize commodity produced by the Smallholder farmers (SHFSs) in Soy Sub County of Uasin Gishu, Kenya. The general objective of this study was to assess the factors affecting the marketability of maize products among Smallholder farmer in Uasin Gishu. The specific objectives sought to find out the perception of smallholder farmers towards the market for their maize products, identify the opportunities for smallholder farmers in Uasin Gishu County to reach different buyers, determine the challenges faced by SHFSs in marketing their maize in Uasin Gishu County and establish ways to curb these challenges faced by SHFSs while marketing their products. The research design which was used is a descriptive as well as inferential survey, where data was collected from identified respondents and a few purposely identified as key informants with vital information that helped put things into perspective. The researcher preferred this design because the information to be sought was descriptive in nature whereby the researcher had no control of what had happened, rather can describe the situation the way it is. Because of the vast geographical area of the county, SHFSs in Soy sub-county were targeted. Specifically, the researcher targeted members in community based organizations called Sirikwa. Sirikwa multipurpose farmer organization members were approached. According to their database, they have 4000 registered members. The descriptive statistics was used to summarize quantitative data. The researcher used tables, frequency distribution and percentages. The study therefore recommends that there is a need for developing a comprehensive policy to serve SHFS, reduce the input costs, stabilize the maize prices especially from the farm level, find a mechanism of eliminating the middlemen by linking farmers to manufactures like millers and provide support services to farms to increase productivity. Similarly, SHFS also need to learn to use of improved maize varieties, use of proper fertilizer, use of credit – provides resources for acquisition of inputs, cultivate maize in a high potential areas (high rainfall areas) in order to improve the quality of their products and increase their level of education (management ability).

INTRODUCTION

1.0 Background of the study

Maize is the most widely grown grain crop throughout the world with production in 2102 being 873 million MT higher than other grains like rice and wheat which follow closely. Maize is believed to have spread to the rest of the world because of its ability to grow in diverse climates. It first started in Mexico and after European contact with the Americas in the late 15th and early 16th centuries; explorers and traders carried maize back to Europe and introduced it to other countries. America is leading grower in the world, with 332 million metric tons grown annually (FAO, 2009). According to the New York Times (2011), approximately 40% of maize is used for corn ethanol. Ideally, maize is grown in large quantities in many developed countries mainly for commercial with its usefulness scope bigger as opposed to the case in the developing countries where most maize produce is consumed domestically as human feed.

In Africa for instance the maize production in 2012 was 70 Million MT with leaders being South Africa (11.8 Million MT), followed by countries like Nigeria, Egypt, and Ethiopia who all doing above 6 Million MT per annum (FAO stat, 2012)

Maize is Kenya's staple Food and an important source of nutrition for a large proportion on the population in both rural and urban areas. Maize consumption is estimated at 98 kilograms per person per year, which translates to a total or roughly 30 to 34 million bags (2.7to 3.1 million metric tons) (Africog, 2009). White Maize is predominantly cultivated in Kenya; production in 2012 was estimated to be 3.6 Million MT (FAO statistics, 2012).. Agriculture is key to Kenya's economy, contributing 26 per cent of the Gross Domestic

Product (GDP) and another 27 per cent of GDP indirectly through linkages with other sectors. The sector employs more than 40 per cent of the total population and more than 70 per cent of Kenya's rural people. The smallholder farming sub-sector, primarily comprises of mixed crop and livestock farms, accounts for 75 per cent of the total agricultural output and 70 per cent of marketed agricultural produce (FAO Country Programming Framework for Kenya 2013-2017)

Soy Sub-County occupies the Northern part Uasin Gishu County and has 5 wards (Kuinet-Kapsuswa, Kiplombe, Kisomba, Soy and Ziwa). This region is in a rural setting with maize farming as the key economic activity. 98% of the farmers from the region who are members of Sirikwa CBO are maize farmers (TechnoServe, 2015). Though they can be described as SHFS, these farmers derive a livelihood by selling their surpluses to the markets around them at harvest time.

The concepts of what constitutes a market in most developing countries have been described in different forms which include the local market, the rural market, the urban market, and the commodity market (Wood, 2007; Chamberlin and Jayne, 2012). Unfortunately, the definitions and concepts of what constitutes a market cloud the real issues. In any rural environment, what constitutes a market will depend on the crop and the type of farmer growing it. Consequently, there can be multiple markets for some products (Vakis, Sadoulet and de Janvry, 2003; Wood, 2007). For a smallholder farmer growing a cereal crop such as maize largely for home consumption, a market for the sale of surplus production can be the farmgate, a neighbour, the roadside (usually during the

market days), the nearest local shopping centre or, ultimately, the nearest urban market. For more market-oriented smallholder farmers in Kenya, a market for the sale of cereal grains can – in addition to these markets – also include local schools, national grain reserve agencies, grain millers, small local traders and large, distant traders.

All these descriptions symbolize lack of proper structures of marketing of maize products in low and middle income economies. Studies attribute the perceived poor participation in grain markets to the high transaction costs of doing business in rural markets (Shiferaw et al., 2011). Such costs include the costs of searching for and screening trading partners, negotiating terms of exchange, transportation, monitoring and enforcing agreements (formal or informal) and adjusting the terms of exchange when necessary (Okello, Narrod and Roy, 2011).

This might be the reason why most of the farmers have abandoned farming for other crops which takes short time and fetches more money compared to maize. Kosgey (2013) observed that the trend for the grain farmers has been declining in the County significantly. In 2004 to 2012 accessibility to agricultural credit dropped from 57.17 percent to 18.74 percent indicating that there is a problem since the number of applicants has been increasing over the same period whereas unsuccessful applicants have been increasing

1.2 Statement of the Problem

According to the study conducted by the Food and Agriculture Organizations (FAO) entitled, “*Smallholder integration in changing food markets*” pointed out that smallholder producer face widely different sets of issues and constraints to market participation (FAO, 2013). It is inevitable that some smallholders, especially those who lack commercial skills and assets, may not be able to participate effectively in market development processes, even with appropriate support. Omiti, Otieno, Nyanamba and McCullough (2009) pointed out some important lessons that can be drawn from experiences in Latin America and the Asian countries are that: emerging urban consumer preferences offer a huge potential for agricultural trade; an increase in per capita purchases by rural households of most food items due to strong growth in the rural economy promotes the commercialization of the rural food economy; and increasingly, more low-income rural households adopt affordable and divisible technology packages and experience faster increases in their cash share of food expenditures than other population categories. The question is, are there structures in place which enable farmers to tap this opportunities without being exploited in Soy Sub-County?

1.3 Purpose of the study

The purpose of this study was to investigate and document the factors influencing the marketability of the maize commodity produced by the SHFSs in Soy Sub County of Uasin Gishu County. Year in year out at the end of every harvesting season the maize farmers both large and small have face a lot of challenges in disposing their produce. Safe for the large scale there are a number of factors that favour them; FAO 2012 report indicates SHFSs as the most vulnerable in the farming industry.

Therefore being the majority and their contribution to the food basket and the economy of the county and country at large; this study endeavors to answer some questions as well as propose some remedial solutions that can spur this group in the maize industry to being more productive and develop the market systems.

1.4 Specific objectives

The specific objectives aimed at:

1. Finding out whether the levels of maize quality and production per unit area at the farm-gate affects its marketability
2. Identifying the extent to which infrastructural facilities in this industry affects the marketing process.
3. Determine the effects of maize pricing in marketing the commodity
4. Asses the market size as well as the market structures in place and how they affect marketability of maize

1.5 Research questions

The researcher seeks to answer the following research questions:

- i. How does the maize quality and production per unit area affect the marketing of maize?
- ii. Do the infrastructural facilities in place in this industry affect the handling and flow of the commodity along the market channels?
- iii. How does the pricing of the product affect marketing of maize among the SHFSs in Soy Sub-County?

- iv. How does the market size affect the disposal of the maize commodity by the farmers to the market?

1.5 Significance of the study

It is hoped that this study's assessment of factors affecting SHFS in Soy Sub-County will contribute and add to the body of existing knowledge in the field of marketing and will extend the current knowledge available on marketing practices on farm produce in Kenya. This study will provide a greater depth of knowledge on the how SHFS undertake their activities in marketing and selling of their maize produce in Soy Sub-County and will enable comparisons to be made with other studies on related to this study carried out here in other parts of Kenya, Africa and other parts of the world.

The results would be of value to stakeholders especially in Kenya and particularly in Soy Sub-County as it helped identify areas of intervention.

1.6 Limitations of the study

This study was limited to a specific geographical area because of the vast distribution of SHFS in the County which we could not practically contact all for the purpose of this study in consideration to the limited time and resources.

1.7 De-limitations of the study

In order to obtain a well representative sample, the researcher developed a methodology which enabled the acquisition of relevant information from a small number of SHFSs and which can be considered to be representative information which can be generalized to be a true of the population distributed in a vast geographical area of Soy Sub-County. Thus only farmers in this region of the county were sampled for this exercise.

1.8 Assumptions of the study

The researcher believes that the information which was collected during the data collection exercise will be a true representation of facts of all other SHFs in Soy Sub-County who did not participate in this process and can be extrapolated to the rest of the country as well.

1.9 Definition of significant terms used in the study

1.9.1 Smallholder farmer

Although there are many ways to define **Smallholder farmer (SHFS)**, the FAO's criterion of plot size is widely used, with 'smallholder farmers' being farmers who farm plots of 2 hectares or less. Additionally according to African Smallholder Farmers Group (ASFG) Farmers within this group have significant variation, with smallholders falling into three broad groups:

- Farmers who own other assets in addition to their land, such as livestock or machinery; and who have sufficient access to inputs, services and knowledge to enable them to be active in markets to a greater or lesser extent.
- Farmers with only a little land to farm (one hectare or less) and few other assets; who lack access to high-quality inputs, credit, services and equipment.
- Finally, those subsistence farmers who are unable to survive on farm income alone, but who rely substantially, or even entirely, on off-farm work, remittances and/or social subsidies.

1.9.2Market structure

Market structure identifies how a market is made up in terms of:

- i. The number of firms in the industry
- ii. The nature of the product produced
- iii. The degree of power each firm has
- iv. The degree to which the firm can influence price
- v. Profit levels
- vi. Firms' behaviour – pricing strategies, non-price competition, output levels
- vii. The extent of barriers to entry
- viii. The impact on efficiency

1.10 Organisation of the study

This study is organized into five main chapters. Chapter one contains an introductory information of the study, chapter two provides the literature review whereby the research is discussed while citing the work of other researchers, chapter three presents the research methodology which is used to collect the data, chapter four presents the data collected from the field with information interpreted accordingly, and chapter five provides the summary, conclusion and recommendations of the study.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

This chapter reviews the study on the related field, acknowledging the contribution made by various scholars through publication, business journals, text and periodicals. It identifies the gap and provides the way forward. A critical review was done to identify gaps; thereafter a summary was made on the study. Theories of various scholars will be cited in order to put more weight on the emphasized point to be relayed.

2.1 Concept of marketing of agricultural products

Marketing of agricultural products involves the transition from subsistence farming to increased market-oriented production. It is commonly measured as the ratio of percentage value of marketed output to total farm production (Haddad & Bouis, 1990). Market-oriented production entails modernization of systems, which depends heavily on the intensification of production processes, adoption of new technology and farm mechanization. As the marketed share of agricultural output increases, input utilization decisions and output combinations are progressively guided by profit maximization objectives. This process leads to the systematic substitution of non-traded inputs with purchased inputs, the gradual decline of integrated farming systems, and the emergence of specialized high-value farm enterprises (Omiti et al., 2006).

Commercial orientation of smallholder agriculture leads to a gradual decline in real food prices due to increased competition and lower costs in food marketing and processing (Jayne et al., 1995). These changes improve the welfare of smallholder farmers in two ways: for consumers, low food prices increase the purchasing power for food, while for producers a decline in food prices enables the reallocation of limited household incomes

to high-value non-food agribusiness sectors and more profitable non-farm enterprises. Promoting investments in agricultural commercialization could reduce poverty but requires great shifts in priority setting in the rural and peri-urban areas of Kenya (Geda et al., 2001). The potential benefits of higher product prices and lower input prices due to commercialization are effectively transmitted to poor households when market access is guaranteed (IFAD, 2001).

The main forces that generally drive commercialization include an increased market demand for food arising largely from population growth and demographic change; urbanization; the development of infrastructure and market institutions; the development of the nonfarm sector and broader economy; rising labor opportunity costs; and macroeconomic, trade and sectorial policies affecting these forces (Pingali & Rosegrant, 1995).

At the farm level, commercialization is mainly affected by agro-climatic conditions and risks; access to markets and infrastructure; community and household resource and asset endowments; the development of local commodity, input, and factor markets; laws and institutions; and cultural and social factors affecting consumption preferences, production, and market opportunities and constraints (Pender et al., 2006). These factors affect commercialization by altering the conditions of commodity supply and demand, output and input prices, and transaction costs and risks faced by farmers, traders and others in the agricultural production and marketing system (Pender & Alemu, 2007).

Different levels of progress associated with the improvement of marketing agricultural products have been recorded in various developing and transition economies in Latin America, Southeast Asia and sub-Saharan Africa. For instance, advances in biotechnology have transformed the Brazilian agriculture into a more commercially oriented sector, with improved contributions to the country's economy. Demand-driven agriculture supported by institutional incentives and technological improvements, especially the adoption of new high-yielding varieties of food grains (the 'green revolution'), are often cited as significant contributors to economic transition in many Asian countries. Some important lessons that can be drawn from experiences in Latin America and the Asian countries are that: Emerging urban consumer preferences offer a huge potential for agricultural trade; An increase in per capita purchases by rural households of most food items due to strong growth in the rural economy promotes the commercialization of the rural food economy; and Increasingly, more low-income rural households adopt affordable and divisible technology packages and experience faster increases in their cash share of food expenditures than other population categories.

In comparable African countries such as Malawi, the process of agricultural commercialization has generally led to an increase in per capita household incomes, although the greatest benefits have been felt by the better-off households (Peters, 1999). Poor households often sell early in the season when the prices are at their lowest, and buy in the deficit season from the markets when prices are highest. Smallholder farmers in Kenya also experience similar price fluctuations.

Weak institutional frameworks discourage effective involvement in commercial agriculture. Participation in well-functioning commodity markets causes real food prices to drop, which increases smallholder farmers' purchasing power for food (as consumers) while enabling them to reallocate their scarce household incomes (as producers) to high-value non-food agribusiness sectors and non-farm enterprises. For example, involving the private sector in agricultural investments in Ethiopia is resulting in considerable advances in modernization of cereal grain marketing and the flower export sector (Kherallah et al., 2000).

Improving market infrastructure by providing more and better markets and making it easier for farmers to access them is also deemed necessary for increasing the level of commercialization, especially in developing countries (Shilpi & Umali-Deininger, 2008).

2.2 Challenges of marketing farm products

Traditional rural areas are distinguished by a subsistence economy. In such villages the production unit is the family, which produces the food for its own consumption, and the surplus is offered for sale only after a particularly plentiful cultivation season. The family unit considered as a production unit, is quite small and such units operate separately. This situation makes it difficult to concentrate the produce for efficient marketing. In certain areas the vast majority of the population is not at all used to thinking in terms of commerce and barter trading.

Another characteristic of these areas lies in the fact that many of the traditional peasants would be prepared to switch over to the cultivation of market crops, provided a price system is set up which gives them an incentive (Beine, Docquier, & Rapoport, 2008).

The traditional peasant in developing countries sells his produce at the time and for the price, which are the least advantageous for him. He sells in order to pay his debts, but the cycle is repeated, and he becomes involved in new debts. In developing countries, the peasants sell a "forced" surplus. The peasant is forced to sell a sizeable part of his produce, sometimes much more than he would have sold if he had had the choice. In fact, the surplus marketed in the developing countries is determined as follows: If we work out the total produce of the peasant, deduct from this the family's own consumption, plus payments he makes by handing over produce, as well as the payment of various debts, usually to money-lenders, we finally obtain the amount left to the peasant for marketing (FAO, 2010).

Maynard and Beckman in their study (1999) list the main functions of agricultural marketing. These include purchasing, sales, transportation, storage, sorting and grading, financing, added risk, and marketing information. Purchase and sale involve change of ownership. A thing sold is also bought, and anything bought is also sold.

Transportation involves the transfer from a place of surplus to a place of shortage this is the geographical dimension, while storage involves the transfer from a period of surplus to a period of shortage - the time dimension.

Galor in his study of (1990) further extends the stages involved in agricultural marketing. He argues that marketing starts at the peasant's field and includes the following: collecting produce surplus from individual peasants, transportation to a nearby depot,

sorting and grading, stocking up, processing, storage, packing, transportation to consumer centers, contact between producer and consumer, and sale to the consumer.

Most of the operations of the potential marketing require capital, and are carried out at a high risk. The agricultural produce is usually transported in bulk. Storage and transportation are very costly. The produce is seasonal, whereas the demand for it continues all year round. The traditional peasant is a small marketing unit. Hence produce collection is complicated and expensive. Agricultural marketing involves losses, damage, and quality impairment during storage and transportation. It is difficult for the traditional Peasant to undertake the marketing operations, and therefore most of these operations are carried out by middlemen. The obstacles in traditional marketing are the following:

- a) The marketing circle is long and archaic.
- b) The marketing circle: stages through which the products pass. Starting with the producer, and on until they reach the consumer.

Within the framework of a traditional market, the stages which the products go through are extremely long and weighed down by a plethora of middlemen.

The infrastructure of transportation is archaic, the roads are bad or do not exist at all, producers are a long way from the market, and consequently transportation costs are very high. The fact that there is no planning in the production and the irregularity in supplying the market, causes either a surplus or a seasonal scarcity of products on the market. Imported products compete with the local production. Lack of sorting, processing and of warehouses and lack of organization of producers and consumers.

Galor goes on to classify the traditional markets. In the first place, we have the primary market. This market is at the village level. The market does not function every day, but at fixed intervals of a few days. The market usually serves an area of about 1 km radius. Next we have the secondary market. This already operates day by day, and the action is wholesale. The market is regional, located in the central area of the region, close to arterial roads, and it embraces a wider radius of activities. The final market is the one in which the produce passes directly to the consumer, or goes on to be processed, or to be prepared for transportation to markets abroad. An example is a market located close to a harbor.

One must distinguish between the traditional market and the market which functions regularly every day and also includes warehouses and wholesale services, of private or state ownership.

The local traditional market is usually maintained in areas where transportation is almost impossible for the rural population with its limited means. And the goods and services are intended for local consumption. The local market is usually located in a market place. This is a site in which the goods offered change from season to season. Such local markets form a network, in which one market is linked to another through the passage of goods, services and people.

The local market is a meeting place of occasional sellers, who set up at random in sales shacks, and come together at fixed time intervals at that fixed site. This is where goods and services are distributed between the villagers, who act both as buyers and sellers (Forman and Riegelhaupt , 1990).

Who are the market operators? - In the first place, we have the itinerant village trader. He is the main operator in the primary market. Sometimes he himself is the producer. In other cases, he is the one who transports goods to and from the secondary markets. He attends to the storage and sees first-hand reaction to of the agricultural produce. In some cases, he hands out advances on account of the produce, and thus finances the peasants. The second type of trader forms the link between the village level and the secondary market level.

He sells produce on a commission basis, which he collects both from the seller as well as from the buyer. He often finances the village level, and thus forces the peasants to sell through him.

The third type of traders are those who represent more serious purchasing outfits. They operate on a commission basis. They take care of cleaning up the produce, as well as processing it weighing, packing and dispatch to centers of transportation.' these people have a large amount of capital at their disposal and finance their business independently (Ottenson et al, 2001).

One further factor worthy of mention is the price of marketing, which includes all the subsidiary expenses of the marketing process. These expenses usually give rise to the difference between the consumer price and what the producer gets paid. The reasons for this are many. Farms are widely dispersed and production units are too small. There is no uniformity in the quality of the produce. Transportation is difficult, and marketing information is faulty. There is insufficient capital for the processing and storage, and

financing costs are high. Other factors which raise the cost of agricultural marketing are e many and "ed levies, the failure to sort the produce which detracts from the return to the grower, inefficient sales procedures, neglecting to weigh the produce, and delayed payment to the grower. There are too many middlemen, and no regulation of the distribution among markets (Macbailey, 1993).

The mechanism of market prices: This is composed of the following: The price of a product is determined by the supply and demand in the market. The supply represents the quantity of products offered the same day on a certain regional market. The demand represents the willingness to buy the same products by the consumers, the same day on the market. The price of the product on the market is not the price that the producer receives. The following factors have to be put into consideration:

a) Transportation costs - distance, the means of transportation, kind of product transferred and its processing are factors which determine the cost of transportation.

As the distance in transportation becomes shorter and the quantity for transfer increases, so the cost of transportation, which comprises part of the cost price of the product, diminishes considerably.

b) Processing costs: presentation of the product must be enticing, in unit packing, thus allowing direct consumption by the consumer.

- c) Mode of payment: Cash sales are convenient to the producer. Credit sales are also convenient as they increase the range of customers; however, the risk of unpaid debts and the interest involved in credit terms, may lead to these sales being written off as Bad Debts.
- d) Storage of the surpluses during times when supply is higher than demand. The cost of storage is influenced by the following factors:
- Construction costs
 - Maintenance and depreciation (labor & financing expenses)
 - Volume of products produced, due consideration being taken of the storage capacity.
 - Special conditions for storage for maize products.
 - Other factors.
- e) We can also add factors that have an impact on demand. The more plentiful the products offered to the market, the harder it will be for the consumer to take a decision, viz. in regard to:
- Quality
 - Advertising
 - Presentation of the product
 - Trademark.

To sum up; the selling price of a product is determined by the law of supply and demand. The price the producer receives is lower than the selling price. The price of the product sold implies the evidence of all the above mentioned factors, as well as the profit of the middlemen, wholesalers and retailers.

2.3 Constraints of Agricultural Marketing

Most small farmers do not possess suitable marketing means, and this is the main handicap to increased production. Many of the farmers feel -that they run -too high a risk of no-t being able to sell their produce at a fair price. The traditional farmer's need above all is to have faith in the marketing system. It is possible to conclude, and we shall return to this point further on, that one of the main ways of improving the farmer's productivity, does not consist merely in improving the inputs and the production methods. It is important to secure a reliable market, a suitable price, and a system by way of which the farmer can market his produce, and at the same time receive the highest possible share of the price paid by the consumer for that produce (International Federation of Agriculture Producers, 1996)

When the farmer sets about marketing his produce, he faces many constraints. Overcoming them will help us in restoring his self-confidence, and will help him to develop. The first group of constraints is those due to physical conditions. The primary condition is the general infrastructure, which includes insufficient means of transportation, bad roads, and undeveloped markets. A further factor is the absence of agreed standards. There are no agreed standard rates and measures, and in most places the scales used are biased to the detriment of the farmer. The next factor is the means of storage. Insufficient storage space and faulty facilities give rise to losses.

The lack of storage facilities prevents the farmer from keeping over his produce until the season when its price rises, resulting in loss of income. Handling does not exist, or is in very bad repair. Transport methods are outdated, and packing and containers unsuitable. The points of unloading, loading and supply are unsuitable.

The supply inputs are unsatisfactory to the farmer. These are not provided in the quantities requested, neither when they are needed, nor again are they of the kinds and qualities required. The constraints of agricultural marketing, which hamper the traditional farmer, also include components, which are more specifically related to marketing.

Commercial efficiency is hardly accorded any attention, particularly by government and semi-government institutions, and sometimes also in cooperative societies set up by the government. The farmer has a very slim bargaining edge, and this fact is exploited by the private traders. The traditional farmer has no financial means. Further constraints he faces are related to the marketing price and the pricing policy. In many cases, the price paid to the farmer leaves him no profit at all.

The input prices are too high in relation to the marketing prices. The price fluctuations are excessive, and this in addition to high and unjustified marketing levies as well as import taxes and exports taxes.

The system of payment and the manner of payment to the farmer is also significant - usually the farmer receives payment too late, at too low a rate, not in cash, and occasionally only part of the sum due.

This factor is bound up with the next factor, which is credit. Credit to farmers is virtually non-existent. When it does exist, it is insufficient. When it is granted, the price for it is too high. Marketing information is an important factor, which in most cases is not at the farmer's disposal. Information concerning prices, markets and other data, is faulty and deficient.

Information concerning supply and demand in markets at various places is almost non-existent, which prevents the farmer from rationally regulating the supply of his produce.

The government agrarian policy affects the farmer in a major way. Many governments have a general policy of food imports, or received food products through foreign aid, which reach that country at prices far below the prices required by the farmer in return for his produce. Unrealistic exchange rate policy results in unprofitable exports, and gives rise to cheap imports, which compete with the local producer. Many governments do not carry out a real agrarian reform policy, which could help out the farmers. The small farmer finds himself in a vicious circle. Companies and marketing organizations have no economic interest in providing marketing services to a far ranging and non-uniform farmer population, scattered in remote and hard to reach places.

Without such services, the small farmers will not take on the risk of stepping up production beyond their proper consumption.

2.4 Theory of market transition

The theoretical underpinnings of why farm households decide to participate in agricultural markets can be found in the trade theory as postulated by David Ricardo in his classical theory of Comparative Advantage of 1817. According to the theory farmers are essentially driven to enter into trade or markets so that they can enjoy a diverse consumption bundle. They can exploit welfare gains from trading by concentrating in the production of goods they have comparative advantage, and exchange for those they have no comparative advantage.

This trade theory though it explains the primary motive for farmers to participate in markets, it does not comprehensively identify factors affecting market participation. One sound theory explaining the small holder farmer's market participation behaviour is Nee's (1989) theory of market transition: from redistribution to markets economy in state socialism.

The theory tries to show the economic reforms from state redistribution economy to market like economy. It is understood to be the fundamental thinking of market participation of small holder farmers emphasizing on providing necessary market services at market place so as to empower small holder farmers.

According to market transition theory, the shift to markets opens up alternative sources of rewards not controlled by the redistributive state, and this shift thereby reduces dependence on the state (Nee 1989b, 1991b). The idea that market reforms also open up alternative mobility channels for small holder farmers to participate direct in the market basing on the market facilities and incentives has formally modeled by Breimyer in his work of economics of agricultural marketing. He expressed the dual role idea of marketing as he called attention to the "two major tasks of market and marketing system- the performance of various physical market operations (market facilities) and functioning of price among consumers" The study concluded that market reforms through creating infrastructures can attract farmer to enter in the market and hence improve they incomes as well as their welfare.

Nee (1989) used three theses to explain the effect of the transition to transitive markets on the distribution of rewards in state socialism which tends to empower farmer to have

direct decision in marketing process. These include market power thesis, incentive thesis and market opportunity thesis.

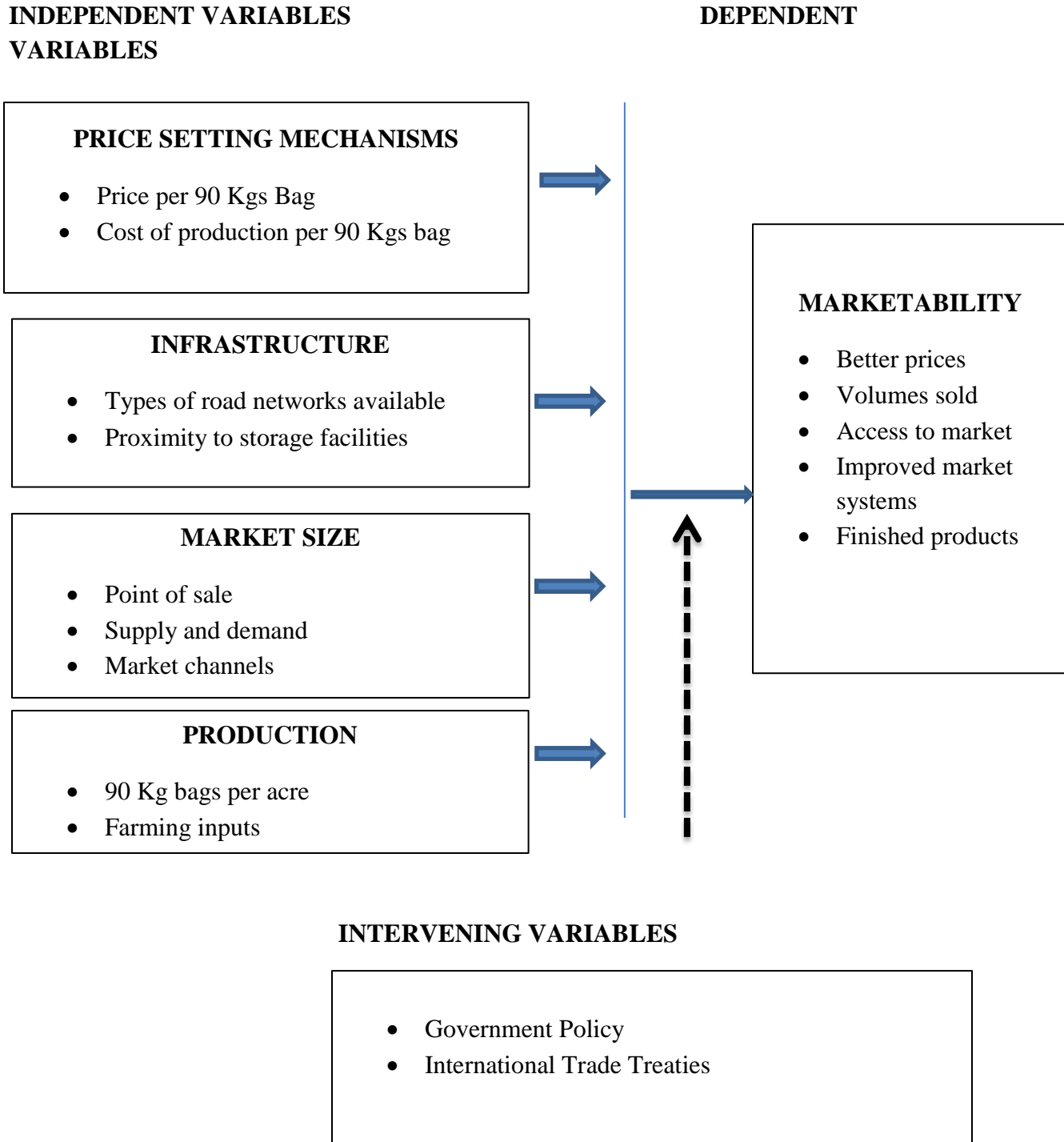
The market power thesis argues that as markets replace redistributive mechanisms in the allocation and distribution of goods, there is a shift in the sources of power from the redistributive sector to the marketplace. This means, improving market infrastructures and facilities can attract farmers.

The market incentive thesis argues that markets provide more incentives than do redistributive economies. First, markets provide powerful incentives to direct producers through both positive and negative sanctions; these include grading, packaging, transportation, weighing and market information.

2.5 Conceptual framework

A Conceptual framework is typically derived from theory. It identifies the concepts included in a complex phenomenon and shows their relationships. The relationships are often presented visually in a flow chart, web diagram, or other type of schematic (Glatthorn & Joyner, 2005). The conceptual framework for this proposed study originates from the review of related literature as presented in the next chapter.

Figure 1 Conceptual Framework



The researcher identified various factors which might affect the marketing of maize among SHFS. These are considered to be the independent variables because they affect the marketing of maize. On the other hand the dependent variables were considered to be the access of the market by SHFS. Finally, there are other cross-cutting issues like government policies and market structures. These are considered as the intervening variables.

CHAPTER THREE: RESEARCH METHODOLOGY

3.0 Introduction

This chapter presents the various ways of how data was collected and analysed. It shows the research designed and items dealt with including the techniques of data collection, sources of information, area of the study, study population.

3.1 Research design

The research design used is qualitative and quantitative approach, where data was collected from identified respondents. The researcher preferred this design because the information to be sought is descriptive in nature and as such the researcher does not have control of what had happened but can only describe the situation as is. The project is centered on both qualitative and quantitative methods to facilitate comprehensive investigation. However there was more emphasis on the latter. Qualitative approaches included: use of interviews, document review and observations. This approach was recommended by Amin (2005) where soliciting people's perception is required. Quantitative approaches involve use of descriptive statistics generated with frequency tables. These approaches are adopted to enable the research get and analyze relevant information concerning SHFS's opinions about the challenges in marketing farm produce. According to Meyer (2006), these approaches are used when the study aims at collecting first hand qualitative data from a big number of respondents drawn from different sections of the survey population.

When these approaches are used, then data is collected using mainly interview and questionnaires and are often analyzed using descriptive analysis.

3.2 Target Population

According to Grinnell and Williams (1990), population is defined as totality of persons, objects with which the study is concerned. In this research the selected population of study is the SHFS at the household level. Because of the vast geographical area of the county, SHFS in Soy sub-county were targeted. Specifically, the researcher targeted members in Community Based Organizations whose contacts and location were readily available in the Sirikwa CBO database of more than 4,000 registered farmers. In addition to this, 5 key players from the government, marketing and finance of maize products were identified to give an insight on maize marketing structures as they have a better understanding of the industry at large as well as the dynamics.

3.2.1 Sample size and selection of respondents

Solvin's formula (1971) was used to calculate the sample size.

$$n = N / (1 + N(e)^2)$$

Where N = Total Population

n = Sample size

e = the margin of error (10%)

N = sample population

e = 0.1

$$n = 4000 / (1 + 4000(0.1)^2)$$

$$n = 98 + 5 = 103$$

3.3 Sampling procedure

Grinnell & William (1990), define sampling as a process of selecting people or cases to take part in the research study.

In this study, the researcher employed two sampling techniques namely: Simple random sampling where by every member of the population had an equal opportunity of being selected for the sample, and purposive sampling because it is more convenient to identify a smaller numbers of key informants (KI) with significantly high and in-depth information.

3.3.1 Simple random sampling

In simple random sampling, every element of the population has the same chance of being selected in the sample. This technique has two methods which are: the lottery methods and the random table method (Grinnell & William, 1990).

All 4,000 correspondents had an equal chance of being selected in the sample, the researcher used this method by picking the SHFS from the database provided by Sirikwa CBO. Therefore out of the 4,000 farmers in the CBO, 98 SHFS were picked randomly so as to enable the researcher get a non-biased result.

3.3.2 Purposive sampling

The technique used to select the KI was purposive. Williamson et al (1982) pointed out that, it is a judgmental sampling type “in which the researcher purposely selects certain groups or individuals for their relevancy to the issue being studied”.

A major advantage of purposive sampling is that it is a way to ensure that, the researcher gets at least some information from respondents who are hard to locate and crucial to the study.

This sampling method is often used in the studies of deviance and other social phenomena that are too rare to be dealt with effectively using a representative cross section of the population.

In this study it was imperative due to its nature to use purposive sampling so as to be able to get respondents who will be well equipped with the information regarding the study. Using the above technique the researcher selected key informants who he considered well placed as to provide first-hand information concerning the marketing of maize products in the county.

3.4 Method of Data Collection and Instruments to be used

Data are mainly primary and secondary, whereby primary data was collected through interviewing respondents and distribution of the questionnaire. According to Saunders et al, (2009) the data collection strategies do not exist in isolation and therefore they can be 'mixed or marched' and it is beneficial to use them so as to have good research results. The researcher therefore conducted quantitative and qualitative method and this was done as follows: Questionnaires were administered to all the farmers sampled and a one on one interview with the KIs who had been identified from the key players in the maize industry in the County.

3.4.1 Questionnaire

This is a method of collecting data in which a selected sample of participants are asked to complete a written set of structured questions to find out what they do, think or feel.

These questions are of two types, which are:

- i) Closed-questions that require respondents to select the answer from a number pre-determined alternatives.

- ii) Open questions where respondents can give personal responses or opinions in their own words.

Self-administered questions were written in English and administered to the sampled population both KIsand SHFS who gave their responses. This method was employed because of the respondents were expected to give information to the best of their knowledge in an orderly and analyzable manner. This is the main reason why the use of the questionnaire was preferred.

3.4.3 Documentary analysis

This is the data collection process that is based on reading books and other documents relevant to the study. According to Grinnell & William (1990), “documentation is a system which formally acknowledges the sources you consult for your research paper and to the full bibliographical entries at the end of the paper. It offers the reader to retrace the steps as a researcher and the writer of the research books”.

The research reviewed a variety of secondary data source magazines, text written, and detailed information on challenges facing SHFS. This data was found from other books and documents relevant to the study. In other words documentary analysis is a system which formally acknowledges other sources consulted for this paper. This also helped the researcher to compare and verify the validity of information that was obtained from interviews conducted.

3.5 Validity and reliability

3.5.1 Validity

The researcher tested the instruments before the real research started in a process called research tools pre-test. Consultations with the supervisor on whether the instruments are valid were made and various amends on the tool were made at this stage. Questions that proved vague or ambiguous were deleted from the questionnaire. It is important to stress that findings obtained in the pre-testing study were not used in the final report but were vital for purposes of testing the research instruments.

3.5.2 Reliability

Reliability can be defined as a consistency of one's measurement or the degree to which an instrument measures the same way each time; it is used under the same condition with the same subjects (Trochim, 2006). It is the repeatability of one's measurement. A measure is considered reliable if the person's score on the same test given twice is similar. The researcher tested re-test to ascertain the reliability of the questionnaire.

3.6 Methods of Data Analysis

The processing and analysis of data encompass 3 sets of activities, viz, editing, recoding and tabulation.

According to Grinnell and Williams (1990), data processing is concerned with classifying responses into meaningful categories called codes. Data collection is not enough in itself, unless the data being collected is processed, analyzed and interpreted into information which is meaningful and understandable to users.

Both quantitative and qualitative data analysis techniques was applied. The descriptive statistics was used to summarize quantitative data. The researcher uses tables, frequency distribution and percentages. Cross tabulations was used for variables which have close associations such as unstable prices, attitude of farmers, liberalization, awareness etc. Coding was done to group data of the same line together while qualitative data researcher obtained was detail information about the research problem and established the pattern trends and relationships from the information gathered.

3.7 Ethical Considerations

The participants were guaranteed that the identifying information will not be made available to anyone who is not part of the project and it will remain confidential for the purposes it is intended for. The researcher sought permission to carry out the research from the project supervisor, Nandi County. The prospective research participants were fully informed about the Procedures involved in the. The participants remained anonymous throughout the study and even to the Researcher himself to guarantee privacy.

3.8 Operationalization of Variables

Operational framework is the operationalization of conceptual framework. It shows how the dependent variable and independent variables can be measured both qualitatively and quantitatively through the use of parameters as specified by the researcher.

Table 1 Operationalization of variables

Objective	Type of variable	Indicator	Measure	Approach of analysis	Research instrument
Finding out whether the levels of maize quality and production per unit area at the farm-gate affects its marketability	Independent	Production per acre Quality of maize produced for marketing	Bags (90 Kgs) per acre produced Quality Standards	Percentage Frequency Inferential statistics	Questionnaire and interview
Identifying the extent to which infrastructural facilities in this industry affects the marketing process.	Independent	Roads and rail Handling and storage facilities Value addition and processing facilities	State of these facilities and the number within farmers proximity	Percentage Frequency Inferential statistics	Interview
Determine the effects of maize pricing in marketing the commodity	Independent	Price	Price per 90 Kg bag of maize	Percentage Frequency Inferential statistics	Questionnaire Interview
Asses the market size as well as the market structures in place and how they affect marketability of maize	Independent	Geographical coverage and consumers	Local and neighboring markets Population of consumers	Percentage Frequency Inferential statistics	Interviews and secondary data

CHAPTER FOUR: DATA PRESENTATION, ANALYSIS AND DISCUSSIONS

4.1 Introduction

This chapter the researcher presents the primary data information in tables and carts whereby frequencies, percentages and mean were used to analyze the data. The information in was narrated using simple English for easy understanding. The researcher had targeted 98 SHFS respondents who were issued with the questionnaires. Out of the 98 questionnaires issued out, only 82 of them were completed properly and were used for data interpretation. This indicates a response rate of 84% which indicates that the data collection exercise was a successful. However, the reliability of the questionnaire was also tested using SPSS and the results indicated that the questionnaire was 89.6 reliable as shown below:

Table 2Cronbach's Alpha reliability test

Case Processing Summary	N	Items tested	Cronbach's Alpha coefficient value
Valid	82		
Cases Excluded ^a	0	44 questions	0.896
Total	82		

It is a standard requirement that the Cronbach's Alpha coefficient value must be more than 0.7 (70%) for the questionnaire to be considered reliable.

This study has indicated that the data collection instrument used was indeed able to elicit a consistent response over a repeated number administered.

4.2 Demographic information

Demographic information provides insight understanding about the characteristics of the respondents who were sampled during the study. This was considered to be necessary because it assist the researcher to understand the targeted group in details. The statistics were generated using SPSS software version 20.

Table 3Gender

Gender	Frequency	Percent
Male	43	52.4
Valid Female	39	47.6
Total	82	100.0

Table 3 indicates that 47.6% of SHFS sampled were female while 52.4% were male. Although male seems to dominating this activity, female are currently engaging in farming in numbers. This is because there have been an increase in farmers' sensitization and more Kenyans are nowadays people do not look at farming as activity or practiced by retired people after finishing their careers. The mindset is now shifting and people consider farming as a lucrative business especially after learning some of the modern ways of undertaking this socio economic activity.

Table 4 Marital status of the respondents

Marital Status	Frequency	Percent
Married	49	59.8
Valid Single	28	34.1
Widow(er)	4	4.9
Divorced/Separated	1	1.2
Total	82	100

Table 4 indicates that 59.8% of the SHFS are married, 34.1% are single, 4.9% are either widows or widowers and a small percentage of 1.2% are either divorces or separated from their spouse. It implies that in average, majority of SHFS in Uasin Gishu are married and perhaps might have children who depends on them for their livelihood. The agricultural activities in which they practice may be their main source of livelihood and therefore they depend on such products like maize to meet their needs. If the market is poor, it means that they end up facing quite a number of challenges in meeting their family obligations. When such situation occurs, you find that men are driven to migrate to the urban areas where they are able to find other income generating activities to support their families and therefore women are left to take care of the farm. However, many single people especially those who have just finished their secondary schools practice farming to raise income for their upkeep.

Table 5 Respondent's level of education

Level of Education	Frequency	Percent
Primary	14	17.07
Secondary	47	57.32
Tertiary colleges	13	15.85
University	5	6.1
Untrained	3	3.66
Total	82	100

Table 5 indicates that 57.2% of SHFS respondents have managed to study up to secondary school level, 17.1% studied up to primary level, 15.9% went to tertiary colleges, 6.1% were university graduates or perhaps still perusing their degrees at the university and 3.7% were untrained.

Again, it is clearly evident that majority of the youth engage in farming at least after finishing their secondary school education. In most cases some of them may decide give up the dream of continuing with their further education to engage in full time farming activity. However, others may continue with their education while doing farming although such number of individuals is very few as indicated in the above figure. Therefore, the study shows that there is a relatively average level of educating among SHFS in Uasin Gishu County.

Table 6 Age bracket of the respondents

Respondents Age	Frequency	Percent
19-25 Years	19	23.2
26-35 Years	47	57.3
Valid 36-45 Years	9	11
46 and above Years	7	8.5
Total	82	100

Table6 indicates that 57.3% of the SHFSs are between the age brackets of 26-35 years old, 23.2% are between the range of 19-25 years old, 11.0% are between the range of 36-45 years old and 8.5% are above the age of 46 years. This indicates that in average majority of our youth are nowadays shifting to farming activities. This might have been driven by three factors. First is the shrinking employment market, two is the growth of demand of farm products especially in towns and cities lastly is there is the sensitization to the youth that indeed farming can be done as a business.

Table 7 Response on time spent practicing small scale farming activity

Duration of farming	Frequency	Percent
0-5 Years	33	40.2
6-10 Years	38	46.3
Valid 11-15 Years	6	7.3
Over 15 Years	5	6.1
Total	82	100

Table 7 indicates that 46.3% of the SHFS stated that they have been practicing farming of maize for a period between 6-10 years, 40.2% stated that they have been farming maize for less than 5 years, 7.3% mentioned that they have been also doing so for about 11-15 years and 6.1% indicated that they have been in this business of planting maize on their small pieces of land for over 15 years. It implies that there is a dynamic shift of youth going to farming as compared to earlier when this business was considered to be for old and uncivilized people who only live at the villages. Today, more young people are attracted to farming, perhaps not only maize but also other horticultural farming but you find that in most farms, they don't miss to plant maize in most parts of Uasin Gishu because it does well in this region.

Table 8 Challenges faced by SHFS in marketing their maize in Uasin Gishu County

Challenges	Frequency	Percent
Individual marketing	8	10
Produce importation	12	15
Lack of storage facilities	22	27
Liberalized market	22	27
Valid Low output per acre	44	54
Poor roads	64	78
Glut at harvest	67	82
Unstable prices	82	100

Table 9 Respondents view whether they are members of Sirikwa multipurpose farm organization

CBO Membership	Frequency	Percent
Yes	78	95.12
Valid No	4	4.88
Total	82	100

Table 9 indicates that 95.1% of SHFS are members of Sirikwa multipurpose farm organization while only a small fraction of 4.9% are not. Due to the problem of marketing maize products, farmers in Uasin Gishu County and also in other counties have sought for a way of cushioning themselves against poor market exploitation and have been able to join farmers' owned organization to agitate for their rights in such conditions where they have been victims of exploitation from middlemen.

4.3 Maize produce prices in Soy Sub-County

Table 10 Maize glut in the market at harvest hence lowering the prices of maize

Response	Frequency	Percent
Totally agree	72	87.8
Agree	8	9.8
I don't know	2	2.4
Total	82	100.0

Table 10 indicates that 87.8% of the respondents totally agreed that the market is too saturated to an extent that the prices are low. However, 9.8% agreed mildly and 2.4% indicated that they did not know whether this was true or false. Uasin Gishu is one of the

grain baskets of Kenya in maize production. However, planting seasons and harvesting seasons for maize is almost done at the same time. Therefore, you find that during harvesting seasons, the prices of maize go down because of the high supply. Kenya cereals and produce board provide market for maize producers. SHFS usually may not have enough space to store their maize so that they wait for the time when the demand is high. This poses a serious challenge to SHFS in Uasin Gishu County.

Table 11 There are no standardized maize prices

Farmer Response	Frequency	Percent
Totally agree	66	80.5
Agree	14	17.1
I don't know	1	1.2
Disagree	1	1.2
Total	82	100.0

Table 11 indicates that 80.5% of the respondents totally agreed that there are no standardized maize prices which are aimed at cushioning them from exploitation. Additionally, 17.1% agreed, 1.2% undecided while another 1.2% disagreed with their counterparts regarding the same statement.

The main player in the market who dictates the prices in is the National Cereals and Produce Board (NCPB). According to the interview with the senior managers at the cereals one of them said that *'They offered prices to farmers and millers that did not rise through the marketing season (pan-seasonal prices), or set a narrow margin between its buying and selling prices that could be underwritten by the treasury all of which happened during much of the 2000s'*.

Due to such adjustments, the prices change and fluctuation of maize supply produced from the key producing counties are also a challenge.

4.4 Maize market

Table 12 SHFS views and perception about the market for the past 5 years (N=82)

Farmer response	Mean	Std. Deviation
Cost of production has gone high	1.48	.789
Prices of maize has gone down	1.49	.707
There is no policy in place to protect SHFS against exploitation	1.38	.559
We lack capacity to add value to our products	1.40	.606
Climate change has reduced production	1.45	.723
Urbanization has opened another market but we do not have means to market in those places	1.41	.666
There is no improvement with what we have been earning from our maize as compared to 10 years ago	1.43	.721
Living standard has gone high	1.34	.477
If I get another option, I can abandon planting maize	1.39	.515
I am disappointed with the how the maize market is being handled in Kenya	1.44	.630
Valid N (listwise)		

Table 12 indicates that SHFS believe that cost of production of maize has increased over the last 5 years with the statistic results of (mean= 1.48 and a heterogeneous standard deviation of .789) which implies that in average majority of the respondents totally agreed with this variable. Ideally, the cost of production has increased over the past years due to consistent increase of the prices of fertilizers, seeds and labour.

On the issue of pricing, the respondents stated that the “*prices of maize has gone down*” rated with a (mean= 1.49 and a heterogeneous standard deviation of .707) which implies that majority of the respondents totally agreed as well with this variable. This situation is evident in this study from our subsequent tables above.

On the response for the variable stating that “*there is no policy in place to protect SHFS against*”, the statistics were (mean= 1.38 and a heterogeneous standard deviation of .559) which indicates that in average, majority of the respondents totally agreed with the same. The Government of Kenya pursues maize marketing policy objectives through the National Cereals and Produce Board (NCPB), which procures and sells maize at administratively determined prices, and stores maize as a contingency against future shortages.

As indicated earlier, SHFS indicates that NCPB policies do not suit them because over the past decade, the price-raising activities of the NCPB have transferred income from relatively small number of small-scale farmers who are sellers of maize to benefit some few urban consumers and majority net retail buyers.

On the response for the variable stating that “*We lack capacity to add value to our products*”, the statistics were (mean= 1.40 and a heterogeneous standard deviation of .606) which indicates that in average, majority of the respondents totally agreed with the same. In most cases farmers sell their maize after harvesting them from the farm. No other additional processing is done. They are either sold when they are green or dry. This affects the farmers from reaping full potential of their maize production.

On the response for the variable stating that “*Climate change has reduced production*”, the statistics were (mean= 1.45 and a heterogeneous standard deviation of .723) which indicates that in average, majority of the respondents totally agreed with the same. Many parts of Africa have witnessed change in climate. Maize farmers have been also affected with these changes since they are the most exposed farmers depending on rain fed agriculture.

The climate variability has witnessed colossal economic impacts because it often lacks adaptive capacity.

On the response for the variable stating that “*urbanization has opened another market but we do not have means to market in those places*”, the statistics were (mean= 1.41 and a heterogeneous standard deviation of .666) which indicates that in average, majority of the respondents totally agreed with the same. Majority of the middlemen have developed strong connection with both retailers and wholesalers to an extent that it is difficult for a farmer to break in.

On the response for the variable stating that “*there is no improvement with what we have been earning from our maize as compared to 10 years ago*”, the statistics were (mean=

1.43 and a heterogeneous standard deviation of 0.721) which indicates that in average, majority of the respondents totally agreed with the same. This is because there is no measure to regulate the exploitation of middlemen, stabilize prices, lower the cost of production and therefore farmers continue to mark-time on same position each passing year.

On the response for the variable stating that *“If I get another option, I can abandon planting maize”*, the statistics were (mean= 1.39 and a heterogeneous standard deviation of 0.515) which indicates that in average, majority of the respondents totally agreed with the same.

On the response for the variable stating that *“I am disappointed with the how the maize market is being handled in Kenya”*, the statistics were (mean= 1.44 and a heterogeneous standard deviation of 0.630) which indicates that in average, majority of the respondents totally agreed with the same.

Table 13 We have no alternative places to sell our maize other than NCPB

Farmer Response	Frequency	Percent
Totally agree	68	82.9
Agree	11	13.4
I don't know	1	1.2
Disagree	2	2.4
Total	82	100.0

Table 13 indicates that 82.9% of the respondents stated that they have no alternative place to sell their maize other than NCPB who are the ones who control prices of maize

in the market. However, even though they sometimes sell to middlemen, the same people will eventually go and sell to the same board with better prices. Nevertheless, 13.4% agreed with their counterparts, 2.1% were undecided and 2.4 disagreed. Sometimes, there are some SHFS who may have established a link to the millers or other retail vendors in the county but the main dealers are NCPB.

Table 14 We prefer selling to cooperatives other than retail vendors

Farmer Response	Frequency	Percent
Totally agree	57	69.5
Agree	21	25.6
I don't know	1	1.2
Disagree	2	2.4
Totally disagree	1	1.2
Total	82	100.0

Table 14 indicates that 69.5% totally agreed, 25.6% agreed, 1.2% were undecided, 2.4% disagreed and 1.2% totally disagreed that they prefer selling their maize through cooperatives other than retail vendors. This is because most retail vendors take advantage of farmers' individual bargaining power and dictate the prices intended to purchase the product. On the other hand, the use cooperatives offer a collective bargaining power for farmers and therefore they prefer this mode of marketing.

Table 15 We are sometimes left with no choice than to sell through middlemen who come to our doorsteps to cut costs

Farmer response	Frequency	Percent
Totally agree	60	73.2
Agree	22	26.8
Total	82	100.0

Table 15 indicates that 73.2% of the SHFS indicates that totally agreed and 26.8% agreed that they are sometimes left with no choice than to sell to maize to the middlemen who travel from house to house because they need money to meet their day to day expense. They sell in small portion and it is a tempting situation which SHFS fall into because of the proximity that they can get small amount of money only at the doorstep.

Table 16 Selling to the middlemen facilitates us quick cash which we can use at our households

Farmer response	Frequency	Percent
Totally agree	68	82.9
Agree	14	17.1
Total	82	100.0

Table 16 indicates that 82.9% of the respondents totally agreed, and 17.1% agreed that this kind of arrangement with the middlemen for selling to small amount of maize facilitates them to get quick cash which they can use to offset some financial constrains at the households level.

The researcher wanted to assess the SHFS views and perception about the market for the past 5 years and different issues were raised related with the market behaviour so that they could be able to rate using a Likert scale of 1-5. In the scale, the 1 represented those who totally agreed with the variable and 5 represent those who strongly disagreed with the same statements. The following results show the descriptive mean response of SHFS perception of the market over the last 5 years.

Table 17 Respondent’s perception on the level which the government has been able to support in marketing their maize products

Government support in marketing	Frequency	Percent
Very high	5	6.1
High	6	7.3
Little	22	26.8
Very little	35	42.7
I don’t know	14	17.1
Total	82	100.0

Table 17 indicates that 42.7% of the respondents stated that the government has given them very little support in marketing their maize products particularly in opening market, 26.8% stated that it has done little, 17.1% said they don’t know the measures in place to open the market, 7.3% stated that the government has offered a high support while 6.1% stated that it has offered a very high support. In average it is observed that majority on SHFS do not appreciate the efforts made by the government to open the market for the farmers.

Table 18 Regulating market

Government market regulation	Frequency	Percent
Very high	2	2.4
High	5	6.1
Little	51	62.2
Very little	24	29.3
Total	82	100.0

Table 18 indicates that 62.2% of the respondents stated that the government has done little in regulating market, 29.3% said it has done very little, 6.1% said that it has done a high rated job while a small percentage believe that it has put high effort to regulate the market where maize farmers are not facing challenges in marketing their farm products.

Table 19 Assisting SFH to access market

Government role in marketing produce	Frequency	Percent
Very high	6	7.3
High	4	4.9
Little	25	30.5
Valid Very little	40	48.8
I don't know	7	8.5
Total	82	100.0

Table 19 indicates that 48.8% of the respondents rated that the government has done very little in assisting SHFS to access market, 30.5% rated that it has done little, 8.5% stated

that they don't know what the government has done so far, 7.3% rated that the efforts by the government is very high and 4.9% rated that the government effort in facilitating farmers to access the market is high. This implies that farmers still believe that little has been put in place by the government to deal with the situation of market accessibility in Uasin Gishu County.

Table 20 County government is able to protect us against exploitation from middlemen

Farmer response	Frequency	Percent
Totally agree	56	68.3
Agree	20	24.4
Valid I don't know	3	3.7
Disagree	3	3.7
Total	82	100.0

Table 20 indicates that 68.3% of the respondents totally agreed, 24.4% agreed, 3.7% stated that they don't know and 3.7% disagreed that one of the opportunities for SHFS in Uasin Gishu County to reach different buyers has been facilitated by devolution and now the county government is able to protect them against exploitation from middlemen. Devolution has brought more hope to farmers because the centre of command has been lowered from the central government to the proximity of the farmers. Therefore majority of the farmers are very optimistic that the county government is going to address their impediment and ensure that their business of maize production remains productive at all seasons.

4.5 Maize production and how it affects maize marketing

Table 21 How many bags of 90 Kgs do you produce per

Production per acre	Frequency	Percent	
	0-5	2	2.8
	6-10	6	7.3
Valid	11-15	12	14.8
	16-20	38	46.4
	20 and above	24	28.7
Total		82	100

Table 21 indicates that the highest number of SHFs at 46.4 % of the produce between 16-20 bags per acre compared to 24.9% who produce below 15 bags per acre. However 28.7% produce more than 20 bags per acre. Considering that the improved maize varieties produce optimally between 40-50 bags, then there is need for farmers to improve their production so that they can compete adequately in the market.

Table 22 Improved seeds varieties can be able to increase our production

Seed technology	Frequency	Percent
Totally agree	59	72.0
Agree	19	23.2
Valid I don't know	3	3.7
Disagree	1	1.2
Total	82	100.0

Table 22 indicates that 72.0% of the respondents totally agreed, 23.2% agreed, 3.7% stated that they don't know and 1.2% disagreed that one of the opportunities for SHFS in Uasin Gishu County to increase their productivity is through the adoption of new technological ways of farming such as the use of improved seeds can be able to increase our production. Despite the rapid adoption of genetically modified crops by farmers in many countries, controversies about this technology continue. Uncertainty about GM crop impacts is one reason for widespread public suspicion. However, since SHFS capacity of production is limited they may find this technology to be helpful in increasing the quantity of production.

Table 23 Reduction of cost of production by the government

Government intervention to lower input costs	Frequency	Percent
Very high	6	7.3
High	3	3.7
Little	19	23.2
Very little	44	53.7
I don't know	10	12.2
Total	82	100.0

Table 23 indicates that 53.7% of the respondents are very dissatisfied with the government efforts to reduce cost of production for SFH to benefit from their harvest and stated that the efforts made are very little, 23.2% said that the government put little effort

to assist them to deal with marketing challenges, 12.2% did not know whether there are such efforts or better still, as to what extent, 7.3% rated the support efforts to be very high while 3.7% rated that the efforts are high. This also shows that little has been observed by the SHFS as the logical and sound efforts by the government to support them in marketing their maize after harvesting.

Table 24 Interventions for improving farming methods to increase productivity

Government support on extension	Frequency	Percent
Very high	8	9.8
High	7	8.5
Little	30	36.6
Valid Very little	31	37.8
I don't know	6	7.3
Total	82	100.0

Table 24 indicates that 37.8% of the respondents rated that they have received very little support from the government in through the interventions for improving farming methods to increase productivity, 36.6% rated that they have received little support, 9.8% said that they have received very high support, 8.5% said that they have receive a relatively high support whereas 7.3% were not even sure whether there such existing support mechanisms offered by the government.

4.6 Effects of Infrastructure on maize marketing in Uasin Gishu

Table 25 Infrastructure projects is aimed to open up for easy transportation

Infrastructure development	Frequency	Percent
Totally agree	53	64.6
Agree	25	30.5
I don't know	2	2.4
Disagree	1	1.2
Totally disagree	1	1.2
Total	82	100.0

Table 25 indicates that 64.6% of the respondents totally agreed, 30.5% agreed, 2.4% stated that they don't know, 1.2% disagreed and another 1.2% totally disagreed that one of the opportunities for SHFS in Uasin Gishu County to reach different buyers is through the development of infrastructure projects in the county aimed to open up for easy transportation

4.7 Mitigating measures for SHFS against exploitation while marketing their products

Table 26 Develop a comprehensive policy to protect the SHFS from exploitation

Farmer response	Frequency	Percent
Totally agree	58	70.7
Agree	17	20.7
Valid I don't know	5	6.1
Disagree	2	2.4
Total	82	100.0

Table 26 shows that 70.7% of the respondents totally agreed that one of the mitigating measures for SHFS against exploitation while marketing their products is by developing a comprehensive policy to serve SHFS. However, 20.7% agreed, 6.1% said they don't know whether it is true or false, and 2.4 disagreed with their counterparts on the same statement.

Table 27 Reduce the input costs

Farmer response	Frequency	Percent
Totally agree	60	73.2
Agree	15	18.3
Valid I don't know	4	4.9
Disagree	2	2.4
Totally disagree	1	1.2
Total	82	100.0

Table 27 shows that 73.2% of the respondents totally agreed that one of the mitigating measures for SHFS against exploitation while marketing their products is by reducing the input costs. However, 18.3% agreed, 4.9% said they don't know whether it is true or false, 2.4 disagreed while 1.2% totally disagreed with their counterparts on the same statement. The essence of reducing the cost of input is to reduce the cost of production such that the farmer may remain with profits after selling their maize.

Table 28 Stabilize the prices

Farmer response	Frequency	Percent
Totally agree	54	65.9
Agree	23	28.0
Valid I don't know	2	2.4
Disagree	3	3.7
Total	82	100.0

Table 28 shows that 65.9% of the respondents totally agreed that one of the mitigating measures for SHFS against exploitation while marketing their products is by stabilize the prices. However, 28.0% agreed, 2.4% said they don't know whether it is true or false, and 3.7 disagreed with their counterparts on the same statement.

Table 29 Eliminate middle

Farmer response	Frequency	Percent
Totally agree	66	80.5
Agree	8	9.8
I don't know	4	4.9
Disagree	3	3.7
Totally disagree	1	1.2
Total	82	100.0

Table 29 shows that 80.5% of the respondents totally agreed that one of the mitigating measures for SHFS against exploitation while marketing their products is by eliminating the middle. However, 9.8% agreed, 4.9% said they don't know whether it is true or false, 3.7 disagreed and 1.2 totally disagreed with their counterparts on the same statement.

Table 30 Provide support services to farms to increase productivity

Farmer response	Frequency	Percent
Totally agree	58	70.7
Agree	16	19.5
I don't know	4	4.9
Disagree	2	2.4
Totally disagree	2	2.4
Total	82	100.0

Table 30 shows that 70.7% of the respondents totally agreed that one of the mitigating measures for SHFS against exploitation while marketing their products is by providing support services to farms to increase productivity. However, 19.5% agreed, 4.9% said they don't know whether it is true or false, 2.4% disagreed and 2.4 totally disagreed with their counterparts on the same statement.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter provides the summary of the main points discussed in this study, provide a conclusive observations and also recommendations to address the missing gaps in the study.

5.2 Summary of the main findings

5.2.1 View of the SFHs on prizing of the Maize Produce

Majority of the respondents specifically the 86.6% who totally agreed and 6.1% who agreed believe that one of the major problem they are facing in marketing their maize in Uasin Gishu County is the there are a lot of middlemen involved in buying and selling of maize in the region. This affects the prices of the maize right from the farm and they are forced to sell at much lower prices.

More than 87.8% of the respondents also agreed that the market is too saturated to an extent that the prices are low. Uasin Gishu is one of the grain baskets of Kenya in maize production. However, planting seasons and harvesting seasons for maize is almost done at the same time.

Majority of the SHFS who were more that 80.5% of the respondents agreed either normally or totally that there are no standardized maize prices which are aimed at cushioning them from exploitation.

According to the interview with the senior managers at the cereals one of them said that *‘They offered prices to farmers and millers that did not rise through the marketing season (pan-seasonal prices), or set a narrow margin between its buying and selling prices that could be underwritten by the treasury all of which happened during much of the 2000s’*. Due to such adjustments, the prices change and fluctuation of maize supply produced from the key producing counties are also a challenge. However more than 82.9% of the respondents stated that they have no alternative place to sell their maize other than NCPB who are the ones who control prices of maize in the market.

SHFS have recently formed cooperative whereby they prefer selling their maize through such channels other than retail vendors as indicated by 69.5% who totally agreed and 25.6% agreed because cooperatives offer a collective bargaining power for farmers and therefore they prefer this mode of marketing.

Farmers also states that they are sometimes left with no choice than to sell to maize to the middlemen who travel from house to house because they need money to meet their day to day expense. They sell in small portion and it is a tempting situation which SHFS fall into because of the proximity that they can get small amount of money only at the doorstep. This was indicated by 73.2% totally agreed and 26.8% agreed. The statistics also revealed that SFH still uses the middlemen because selling to them facilitates quick cash which they can use at our households

In general, the perception of SHFS towards the support by the government to enable them market their maize is discouraging to the farmers in the region. Their concern is that the cost of production of maize has increased over the last 5 years, the prices of maize has gone down over the same period of time, there is no policy in place to protect

SHFS against, they stated that they lack capacity to add value to our products and also they are worst hit by the variation of climate change and has reduced production.

They also stated that they do not have means to market in urban areas because middlemen have established strong relationship with both retail and wholesale and even millers in the cities. They stated that there is no improvement with what we have been earning from our maize as compared to 10 years ago. Most of them indicated that if they had another option, they were willing to abandon planting maize because it doesn't pay. Most are disappointed with how the maize market is being handled in Kenya.

5.2.2 Respondent's view of how the market structures affect the marketing of their produce

Majority of the respondents rated that the government has done very little to support SHFS against various challenges in Uasin Gishu county. Some of the things which they expected much support to a larger extent includes; opening market, regulating market, assisting SFH to access market, reducing the cost of production for SFH to benefit from their harvest and also bringing interventions for improving farming methods to increase productivity

5.2.3 Production as a factor in Maize marketing among the SFHs in Uasin Gishu County

Increasing production per unit area (acre) is vital for the SHFs for them to optimize on production and reduce the cost of production per unit. This will thereby translate to competitive market prices.

5.2.4 Infrastructure as a factor affecting Maize marketing

Nevertheless, SHFS still hold on for hope that one day things will change due to various factors. Devolution has created autonomy where people are able to decide on priority

investments within the county more so on infrastructural developments this will ease handling, processing, storage and movement of the commodity to the outside markets

5.4 Conclusions

It is evident that farmers, especially the SHFS face challenges when marketing their products. A policy challenge in the maize subsector hinders the process of improving the efficiency in marketing through the reduction of production and marketing costs and appropriate use of appropriate inputs. There must be a strategy which ensures that SHFS get acceptable profitability for the producers and lower food prices for the consumers; and improvement in competitiveness in maize production. One pathway toward improving productivity is to improve marketing efficiency.

5.4 Recommendations

Looking at the responses collected from SHFS in Uasin Gishu County, there is a need to take precautionary measures in order to mitigating these challenges faced by SHFS against exploitation while marketing their products. The study therefore recommends that:

1. Invest on infrastructural projects that are key in supporting the maize business in Soy Sub County
2. Reduce the input costs for maize farming
3. Stabilize the maize prices especially from the farm level
4. Find a mechanism of eliminating the middlemen by linking farmers to manufactures like millers
5. Provide support services to farms to increase productivity

Other recommendations which need to be observed by SHFS also include:

- The use of improved maize varieties
- The use of proper fertilizer
- The use of credit – provides resources for acquisition of inputs
- Increase level of technical know-how in the dynamic maize farming industry

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Appendixes

Appendix 1: Research permit

THIS IS TO CERTIFY THAT:
MR. COLLINS KIPLAGAT RUTTO
of UNIVERSITY OF NAIROBI,
62100-30100 Eldoret, has been
permitted to conduct research in
Uasin-Gishu County

on the topic: **FACTORS INFLUENCING
THE MARKETABILITY OF MAIZE
PRODUCE AMONG SMALLHOLDER
FARMER IN SOY SUB-COUNTY UASIN
GISHU COUNTY**

for the period ending:
30th September, 2015

.....
Applicant's
Signature

Permit No : NACOSTI/P/15/4065/7221
Date Of Issue : 24th August, 2015
Fee Received :Ksh 1,000



.....
Prof. Director General
National Commission for Science,
Technology & Innovation

CONDITIONS

1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit.
2. Government Officers will not be interviewed without prior appointment.
3. No questionnaire will be used unless it has been approved.
4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.
5. You are required to submit at least two(2) hard copies and one(1) soft copy of your final report.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice.



REPUBLIC OF KENYA



National Commission for Science,
Technology and Innovation

**RESEARCH CLEARANCE
PERMIT**

Serial No. A **6292**

CONDITIONS: see back page

**Appendix 2: Authorization letter from College of Education and External Studies;
School of Continuous and Distance Education (UoN)**



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

Telegram: "CEES"
Telephone: +254-202406706
Our Ref: Uon/Cees/Eld/2/3/(37)

P.O. Box 594
ELDORET
KENYA

25th June, 2015

TO WHOM IT MAY CONCERN

REF: RUTO KIPLAGAT COLLINS – L50/73235/2014

The above named person is a bonafide student at University of Nairobi, College of Education and External Studies, School of Continuing and Distance Education, Department of Extra-Mural Studies, Eldoret Centre, pursuing a Postgraduate Studies leading to the award of Master of Arts in Project Planning Management (MAPPM). He has completed his course work and now working on his Project Paper entitled "Factors Influencing the Marketability of Maize in Soy, Uasin Gishu County".

Any assistance accorded to him will be highly appreciated.

Sakaja Y.M.,
Centre Organizer,
Eldoret and Environs.



Page 1 of 1.

Appendix 3: Questionnaire

A. SOCIAL BACKGROUND			Tick (✓) inside the box
1	Name of the Location	1. Kuinet 2. Kapsuswa 3. Kiplombe 4. Kisomba 5. Soy 6. Ziwa	<input type="checkbox"/>
2	Gender	1. Male 2. Female	<input type="checkbox"/>
3	Marital status	1. Married 2. Single 3. Widow(er) 4. Separated/divorced	<input type="checkbox"/>
3	Age	1. Less than 18 years 2. 19-25 years 3. 26-35 years 4. 36-45 years 5. > 46 years	<input type="checkbox"/>
4	Level of education	1. Primary 2. Secondary 3. Tertiary colleges 4. University 5. Untrained	<input type="checkbox"/>
5	Number of dependence in the family	None 1. 1-5 2. 5-10 3. Over 10	<input type="checkbox"/>
6	Are you a member of Sirikwa multipurpose farm organization	1. Yes 2. No	<input type="checkbox"/>
7	Time small scale farming activity	1. 0-5 year 2. 6-10 years	<input type="checkbox"/>

		3. 11-15 years	
		4. Over 15 years	

B. PERCEPTION OF SMALLHOLDER FARMERS TOWARDS THE MARKET STRUCTURES FOR THEIR MAIZE PRODUCTS			
1	According to your perspective, to what extent do you agree or disagree with the marketing of your maize products 1. Totally agree 2. Agree 3. Disagree 4. Totally disagree 5. I don't know	1. There are a lot of middle men involved	<input type="checkbox"/>
		2. Market is saturated hence lowering the prices of maize	<input type="checkbox"/>
		3. There is no standardized maize prices	
		4. We have no alternative places to sell our maize other than KFA	<input type="checkbox"/>
		5. We prefer selling to cooperatives other than retail vendors	<input type="checkbox"/>
		6. We prefer to sell through middlemen who come to our doorsteps to cut costs	
		7. Selling to the middlemen facilitates us quick cash which we can use at our households	<input type="checkbox"/>
		8.	<input type="checkbox"/>
		9.	<input type="checkbox"/>
		10.	<input type="checkbox"/>
2	According to your perspective, to what extent do you agree to the existence of the market for the last 5 years 1. Totally agree 2. Agree	1. Cost of production has gone high	<input type="checkbox"/>
		2. Prices of maize has gone down	<input type="checkbox"/>
		3. There is no policy in place to protect SHFS against exploitation	<input type="checkbox"/>
		4. We lack capacity to add value to our products	<input type="checkbox"/>
		5. Climate change has reduced production	<input type="checkbox"/>

	3. Disagree 4. Totally disagree 5. I don't know	6. Urbanization has opened another market but we do not have means to market in those places	<input type="checkbox"/>
		7. There is no improvement with what we have been earning from our maize as compared to 10 years ago	<input type="checkbox"/>
		8. Living standard has gone high	<input type="checkbox"/>
		9. If I get another option, I can abandon planting maize	<input type="checkbox"/>
		10. I am disappointed with the how the maize market is being handled in Kenya	<input type="checkbox"/>
3	According to your perception, what is the level of priorities of the following 1. Very high 2. High 3. Little 4. Very little 5. I don't know	1. Opening market	<input type="checkbox"/>
		2. Regulating market	<input type="checkbox"/>
		3. Assisting SFH to access market	<input type="checkbox"/>
		4. Reducing the cost of production for SFH to benefit from their harvest	<input type="checkbox"/>
		5. Interventions for improving farming methods to increase productivity	<input type="checkbox"/>
C. INFRASTRUCTURE IN THE MAIZE SUB SECTOR IN UASIN GISHU COUNTY			
1	In your opinion, what are the opportunities available for you to reap more benefits from maize farming 1. Totally agree 2. Agree 3. Disagree 4. Totally disagree 5. I don't know	1. Devolution has created autonomy where people are able to decide on infrastructural development	<input type="checkbox"/>
		2. Infrastructure projects is aimed to open up for easy transportation	<input type="checkbox"/>
		3. Geographically, we in Rif Valley are able to produce large quantities and sell to other counties	<input type="checkbox"/>
		4. Improved seeds can be able to increase our production	<input type="checkbox"/>
		5. County government is able to protect us against exploitation from middlemen	<input type="checkbox"/>

D. CHALLENGES FACED BY SHFS IN MARKETING THEIR MAIZE IN UASIN GISHU COUNTY			
1	In your opinion, what are the challenges you are facing as SHFS	1. Low prices	<input type="checkbox"/>
		2. High production cost	<input type="checkbox"/>
		3. Lack of proper regulation measures to prohibit middlemen from benefiting from us	<input type="checkbox"/>
		4. Poor infrastructure affecting the transportation of maize	<input type="checkbox"/>
		5. Low production	<input type="checkbox"/>
	1. Totally agree 2. Agree 3. Disagree 4. Totally disagree 5. I don't know		

If other please state

E. MITIGATING MEASURES FOR SHFS AGAINST EXPLOITATION WHILE MARKETING THEIR PRODUCTS			
1	In your opinion, what is the way forward?	1. Develop a comprehensive policy to serve SHFS	<input type="checkbox"/>
		2. Reduce the input costs	<input type="checkbox"/>
		3. Stabilize the prices	<input type="checkbox"/>
		4. Eliminate middle	<input type="checkbox"/>
		5. Provide support services to farms to increase productivity	<input type="checkbox"/>
	1. Totally agree 2. Agree 3. Disagree 4. Totally disagree 5. I don't know		

If others please state

Appendix 4: Study Location in the Map of Kenya

Figure 2 Map of Kenya

