

**FACTORS INFLUENCING INVOLVEMENT OF WOMEN
IN AGRICULTURE IN YALA DIVISION
OF GEM DISTRICT- KENYAⁿ**

BY

DANIEL OMONDI OKELLO

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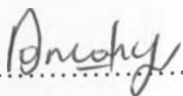
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**A RESEARCH PROJECT REPORT SUBMITTED IN PARTIAL FULFILLMENT
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DECLARATION

This research project report is my original work and has not been presented for any award in any University

Sign..........

date.....23/8/2010.....

Daniel Omondi Okello

L50/70593/2009

This research project report has been submitted for examination with our approval as University supervisors

Sign..........

date.....23-08-2010.....

Dr. Joshua Wanjare

Senior Lecturer, School of Business Studies

University of Nairobi

Sign..........

date.....30-08-2010.....

Mr. Ochieng Michael

Part Time Lecturer,

School of Distance Learning and Continuing Education

DEDICATION

Dedicated to my beloved wife Caroline, daughter Veronica Akinyi and sons Frankline Ochieng, Michael Junior Ouma and Benedict Joy Odhiambo, my parents Joseph Okello Wanyande and Margaret Anyango, and my dear friend Joel Amolloh.

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ABBREVIATIONS AND ACRONYMS

AGMARK	Agricultural Market Development Trust
AIDS	Acquired Immune Deficiency Syndrome
CDC	Centre for Disease Control
CDF	Constituency Development Fund
CEDAW	Committee on the Elimination of all forms of Discrimination Against Women
CMFA	Citizens Network for Foreign Affairs
CSIRO	Commonwealth Scientific and Industrial Research Organization (Australia)
CWS	Common Wealth Secretariat
EPRC	European Policy Research Centre
FACU	Federal Agricultural Co-ordination Unit
FAO	Food and Agricultural Organization
GAD	Gender and Development
HIV	Human Immunodeficiency Virus
IFAD	International Fund for Agricultural Development
IT	Information Technology
KNDP	Kenya National Development Plan
KTN	Kenya Television Network
MVP	Millennium Village project
NCPB	National Cereals and Produce Board
NDP	National Development Plan

SAFAIDS	Southern Africa Aids Information Dissemination Service
SIDA	Swedish International Development Cooperation Agency
SPSS	Statistical Package for Social Sciences
SSA	Sub- Saharan Africa
TAIARD	The Association for International Agriculture and Rural Development
UAE	United Arabs Emirates
USA	United States of America
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
UVECSA	University of Vermont Extension Centre for Sustainable Agriculture
WCW	World Conference on Women
WID	Women in Development

ABSTRACT

Involvement of women in agriculture and the benefits they derive from it has been shrouded in gender stereotypes that propagate male dominance. About 60% to 90% of farm work and other related activities are performed by women yet they continue living in abject poverty. For this reason, the study was set to find out the factors influencing the involvement of women in Agriculture in Yala division of Gem district. Due to imbalance between input and output of women in agriculture, the purpose of this study was to examine economic, socio-cultural, technological and policy factors that influence the involvement of women in agriculture in Yala division. The objectives of this study were: to determine economic factors that influence the involvement of women in agriculture in Yala Division; to establish socio-cultural factors that influence the involvement of women in agriculture in Yala Division; to determine the technological factors that influence the involvement of women in agriculture in Yala Division and to find out policies that influence the involvement of women in agriculture in Yala division. This study answered the following research questions: what are the economic factors that influence the involvement of women in agriculture? Are there socio-cultural factors that influence the involvement of women in agriculture? How do technological factors affect the involvement of women in agriculture? Are there any policies that influence the involvement of women in agriculture? The study was guided by the Equity Theory and a conceptual framework that showed the interrelatedness of various factors that influence the involvement of women in agriculture. The study utilized descriptive study design that involved administration of questionnaire and conducting in depth interview to a sample of 382 respondents drawn from a population of approximately 80,000. A multistage sampling procedure was used to select respondents and data was analyzed using descriptive statistics such as frequency and percentages counts; and inferential statistics such as Pearson (r) – Product Moment Correlation Coefficient with the aid of Statistical Package for Social Sciences (SPSS®). Data is presented using frequency and percentages tables, and pie charts. The findings of the study are of significance to women farmers, the Ministry of Agriculture, Ministry of Gender and Sports, various non-governmental organizations dealing with agriculture, gender, and human rights organization. The study has contributed a lot to the body of knowledge by explaining how agriculture is engendered in terms of economics, socio-cultural, technological and policy factors.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The study on women involvement in agriculture has been very extensive in developed countries like the United States, Canada, Britain, and Brazil among others. In the Third World Countries, the role women play in agricultural production can never be over emphasized (Damisa & Yahana, 2007).

Amali and Ebele (1988) suggested that women's contribution to farm work is as high as between 60% and 90% of the total farm tasks performed. Women perform such tasks as land clearance, cultivation, planting, weeding, fertilizer application, harvesting, winnowing, milling, transportation and marketing (Amali & Ebele, 1988). All recognize the role played by women in food production. It has been estimated that women are responsible for more than half of the food produced in developing countries (Elena, 2009).

Despite the dominant role women play in agricultural production in the Third World Countries, they are hardly given any attention in the areas of training and or visitation by extension agents with improved technologies. Banks hardly grant them loans and they are hardly reached with improved seeds, fertilizer and other inputs (Saito & Spurling, 1992). Women tend to have more constraints than men in agriculture. Saito and Spurling (1992) categorically stated that, "many constraints such as resource endowments or social factors on agricultural productivity are gender neutral. But within each social and economic group, women tend to have more constraints than men (Elena, 2009).

Constraints which are gender neutral can be addressed with general solutions, but specific problems often need gender specific solutions. The difference in roles and constraints requires gender mainstreaming. Gender mainstreaming is the current international approach to advance gender equality and equity in the society (Commonwealth secretariat, 2001). The advantages of gender mainstreaming approach is that it allows for the advancement of gender equality and equity regardless of whether it is women or men who are disadvantaged and whose position needs to be addressed (ibid). In other countries, women may find themselves in an advantaged position but in most countries, history has it that women have been disadvantaged and a number of inequalities remain unaddressed. For this reason, the term gender mainstreaming is perceived by many to be a move to address women's rights and unlock opportunities for them.

The realizations of high potentials of women have made government to shift grounds and focus on the development especially in agricultural sector in Nigeria (Okunade, 1998). In Africa, it is only Nigeria that has made significant steps towards gender mainstreaming. After realizing that women constitute 49.6% of rural population (Population Census, 1991) and the significant role they play in agriculture, there was need to focus on women as a productive population. Significant efforts became evident especially after the 1994 International Conference on Population Development Programme of Action which advocated for equal involvement of men and women in sustainable development.

Many development programmes were initiated to improve the lives of women in Nigeria. These included Better Life Programme (1987), Women in Agriculture (WIA)

established by Federal Agricultural Coordinating Unit (FACU) in 1991, Family Support Programme (FSP) and Family Economic Advancement Programme (1994) (World Bank, 2009).

Nnoyelu and Gadzama (1991) reported that these programmes succeeded in achieving; acquisition of farm land for rural women's group farms, mobilization of rural women in cooperative groups focusing on agro-processing, distribution of scarce input to women farms, distribution of labour saving equipments to women cooperative groups and promotion of the development and use of appropriate agricultural technologies, which reduce drudgery among women.

Despite all these achievements, Nnoyelu and Gadzama (1991) realized that agricultural production among women farmers still remained subsistence and the food production could not cope with the rising population of the country. There was still a gap to be filled with further research in Nigeria.

In Tanzania, women involvement in agriculture is limited to livestock management and farm operations. However, when it comes to the sale of land and livestock, they must seek for men's approval (FAO, 1998). In Uganda, lack of education has been cited to incapacitate women from effectively involving themselves in agriculture (Vedavali & Sharma, 1997).

In Kenya, women at higher levels are still locked in a battle to attain political and intellectual freedom geared towards the attainment of equal representation in parliament and other decision-making bodies (Kenya Television Network (KTN, 2008).

Murungi in a KTN news cast (December 2008) turned down an offer to become the deputy women leader of party of National Unity (PNU). This spells out a burnt out

situation that women are not actively involved in the development programmes in Kenya (Agriculture included). For this therefore, gender mainstreaming is a far-reaching phenomenon. To address this issue, there is strong need to look into the needs and activities of the rural women whose main source of livelihood is agriculture. The factors influencing her involvement in agriculture must be investigated. This research project therefore addressed these specific factors that create inequalities between men and women and recommended actions to be taken to unlock opportunities for the female gender in Yala division.

1.2 Statement of the Problem

For many years in Kenya, women have been a key component in supporting the rural economy by engaging in agricultural activities as men seek for paid employment opportunities in urban areas. Through their engagement in farm work, they have helped to support the urban wage labour by providing food to their spouses in town. Despite that, women have not benefited adequately from the fruits of getting involved in agriculture.

In Gem district, the poverty index has been on the increase since 1994. From 53% in 1994, the index rose to 50% in 1999 and 64% in 2007 (Communication Commission of Kenya, 2007). Due to increased rural-urban migration, women constitute the majority of the rural population and hence the rural poor.

The rural population depends on small scale agriculture mainly using low level technology and human labour (women labourers). In western Kenya farm work is practiced by women who constitute 61%. The rest are 18% children and 19% men who dominate and control the sector resources.

In Maragoli in western Kenya, farm work is labour intensive and mainly performed by women. On the contrary, decision making regarding purchase of farm input and sale of farm produce is done by men.

In 1991, research conducted by various non-governmental organizations established that women contribute 80% towards food production but only received 7% of extension information or are even completely disregarded by extension workers. It was also noted that women concern should be integrated as a gender variable in agriculture.

In January 2009, an agricultural extension officer at the divisional headquarters admitted that their services don't target women but are need driven -target those who have the resources and are in need of the services. The disparity of income between the female and male farm workers is wanting. In the horticultural sector in Naivasha, women constitute 68% of all workers. They earn Ksh.140 a day bringing it to a salary of Ksh.3640 a month where as the horticultural sector earning average Ksh.7.8 billion annually by 2000. The figures rose to 13.2 billion in 2003 and 18.5 billion in 2009 but the wages for women remained the same (Communication Commission of Kenya, 2007).

From 1959 to date, women wages in the tea plantations are lower than men's and the task of tea picking that they perform is very vital to the industry. In Yala Division, women are involved in the mobile labour that is poorly paid. The study seeks to look into the disparity in income between men and women and unearth the underlying factors that control the underpayment for women.

The National Aids Control Council (2010) gave the percentage of women infected with HIV to 53% compared men's 43% and 4% children. In areas where it is predominantly agrarian, more women than men risk infection. In these areas, 29% of

women are unmarried compared to men's 49%. HIV/AIDS incapacitates in many ways. The study is set out to specifically examine how HIV/AIDS affect involvement of women in agriculture.

Due to the complex nature of factors and the nature of the women farmer, this study was therefore set to examine economic, social, technological and policy issues that influence the involvement of women in agriculture in Yala Division of Gem District.

1.3 Purpose of the study

The purpose of this study was to determine the extent of various factors influencing the involvement of women in agriculture.

1.4 Objectives of the Study

The study was guided by the following objectives;

- (1) To determine the extent to which economic factors influence the involvement of women in agriculture in Yala division of Gem district.
- (2) To establish the extent to which socio-cultural factors influence the involvement of women in agriculture in Yala division of Gem district.
- (3) To assess the level at which technological factors influence the involvement of women in agriculture in Yala division of Gem district.
- (4) To establish the extent to which policies influence the involvement of women in agriculture in Yala division of Gem district.

1.5 Research Questions

This study was set to answer the following research questions;

- (1) To what extent do economic factors influence the involvement of women in agriculture in Yala division of Gem district?
- (2) To what extent do socio-cultural factors influence the involvement of women in agriculture in Yala division of Gem district?
- (3) To what level do technological factors affect the involvement of women in agriculture in Yala division of Gem district?
- (4) To what extent do policies influence the involvement of women in agriculture in Yala division of Gem district?

1.6 Significance of the study

The commonwealth secretariat paper on gender mainstreaming (2001) refers to the “African farmer and her husband.” This phrase is very important since it suggests that women’s involvement in agriculture cannot be compared to the men’s. 80% of all those involved in farming are women and on average they work more hours than men in food production. Men on the other hand hire out their labour and come back to consume what women have produced.

This study therefore ought to be very important. It seeks to assist governments and non-governmental organizations in advancing gender equality and equity in agriculture and rural development. The study would highlight on the constraints hindering women’s involvement in farming with an aim of inducing or stimulating action from both governmental and non-governmental organizations.

With the attainment of gender equality, more women than men would engage in farming and agro-input business thus increasing their income and hence higher standards of living among women and the society in general.

This study opts to be very important since women will clear the impasse related to gender blind approaches. This study exposed the retrogressive mindsets that inhibit women from accessing funds, land, knowledge and other factors of production that are provided to sideline the woman.

The study was very important since it opts to unlocked opportunities for women. Women will have access to and control of new agricultural technology which replaces the labour intensive methods the have been using over years. With the access to new technology coupled with the degree of involvement, productivity will improve and the woman farmer will reclaim her rightful status as regards resource utilization and payback.

The sex stereotypes associated with the woman would be discarded by anybody who would consume the findings of the study. The cultural stereotypes that have prevented women from active involvement in agriculture would be discarded and women operate in an environment that champions gender equality, parity and equity in the utilization of the sector resources.

The government of Kenya would therefore utilize the research findings to mainstream different gender groups and take advantage to implement gender specific solutions to solve the problems of women.

1.7 Basic assumptions of the Study

It was assumed that absence of respondents due to short term variations would not affect the generalization of research findings to the whole population. It was assumed that the respondents were informed and would provide true information regarding the study and the results gotten would be generalized to the whole population. It was also assumed that respondents would be available during interviews and the administration of questionnaires. Female headed households were assumed to be more vulnerable than those headed households. The study was undertaken with the assumption that factors affecting the involvement of women in agriculture would provide valuable information to decision makers. The equity theory was very relevant to the study

1.8 Limitations of the Study

Most roads in Yala Division are not tarmacked. Other areas like Rawalo, Omindo, Dhene and Bar Kalare had very rough geographical terrain. Accessibility to this area was very difficult since it required traveling on foot for very many kilometers. The small market centers have attracted settlers from far and wide and from within and a majority is believed to participate in agriculture. It was very difficult to make a decision on the exclusion or inclusion of respondents from these markets. Their inclusion would have lead to wrong generalization of research findings since the absence due to cases of short duration may be prevalent. This would have been caused by the fact that majority are people/settlers from outside the division. Their exclusion meant the exclusion of consumers and marketers of agricultural products. This was therefore a very significant limitation.

1.9 Delimitations of the Study

The study was conducted in Yala division of Gem district to reveal the extent of factors influencing the involvement of women in agriculture. The target population was predominantly agrarian and a majority of them were women who constituted the rural poor and the study was therefore justified to restrict itself to women issues. The study interviewed both men and women with the main reason of obtaining objective information about women involvement in agriculture.

The study was restricted to descriptive survey as the research design. Since the study was a social science research and the target population had varied demographic characteristics in terms of gender, age, and socio-economic status, the design was the most appropriate in collecting information on opinion, perception and experiences of respondents.

The questionnaire and in-depth interviews were used to collect data. Where the questionnaire was inadequate interviews were conducted especially when dealing with illiterate respondents. Observation check list was inappropriate since much related to engendered agriculture could not be observed and documentary sources related to engendered agriculture could not be identified at the literature review level thus making documentary analysis inappropriate.

1.10 Definitions of Significant Terms.

Factors	These are things that have influence on agriculture and are economic, socio-cultural, technological and political.
Influence	The effect that something has on the other and controls how it works.
Involvement	Taking part in all aspects of agriculture. This includes crop management, animal, agro-input marketing, agricultural extension and education, and agricultural research.
Economic Factors	These are factors connected with the economy and include finances, land, agro-input marketing and farm produce marketing.
Social factors	These are factors that are connected to the society as community includes such things like education, domestic chores, and the influence of HIV/AIDS on agriculture.
Technological factors	These are factors connected to the knowledge of science and include access to farm tools and implements, extension services and agricultural research.
Policy factors	Plan of action agreed as chosen to streamline programmes in agricultures. They include affirmative action and gender mainstreaming.
Gender issues	These are very important issues related to the roles of men and women regarding opportunities, endangered employment and male superiority.

1.11 Organization of the Study

The study was organized in five chapters. Chapter one constituted background of the study, purpose of the study, research objectives and questions, significance of the study, scope of the study and the basic assumptions. Chapter two constituted literature review section organized in a pyramidal approach- global, continental, regional, national and local while establishing the knowledge gap, theoretical and conceptual frameworks. Chapter three consisted of the research design, study population, sample and sampling technique that was used, instrumentation, validity and reliability of research instruments and the data analysis technique that were used. Chapter four constituted data analysis, interpretation and discussions. Chapter five consists of conclusions, recommendations and the contribution of the study to new knowledge.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The literature review tried to identify what has been written about the area of study. The areas explored include the socio-economic, technological and policy/political factors that have seriously affected agriculture and the involvement of women in the industry. The literature exploration was done on a global and local perspective with strict focus on trying to identify gaps that exist and how the study will seal them. The literature review also tried to reveal tools and methodology that other researchers had used in similar studies elsewhere, their relevance, applicability and utilization in this study.

2.2 Economic factors Influencing Women Involvement in Agriculture

This section of literature review looked at economic factors which affect the involvement of women in agriculture as practiced in several countries. These factors include such key factors like, access to capital, land, marketing of farm products and farm input and general farm management.

2.2.1 Access to capital

According to the Kenya National Development Plan article on gender equality in agriculture and development (2000 to 2006), women are not often targeted by the development agencies. The article further says that women tend to use informal channels -family/friends to access credit as the existing structures have not provided a service that they find accessible (KNDP,2006).

Vedavali and Sharma (1997), bring out religion as a factor which prevents women from accessing capital. Religious concept of purity and pollution does not allow women from engaging in commercial activities such as agriculture. This state is in contradiction with the states put forward by Sangeeta, (1996) who holds that the increasing realization of the critical role of agriculture and of the fact that empowerment of women is necessary for bringing about sustainable development at a faster pace. She suggested that illiteracy is one factor that makes women not realize where to source for finances.

According to Huvio (1996) women's access to critical resources such as finance suffers even more limitation. He suggested that their control over resources such as credit must therefore be seen with a broad gender and socio-economic context. This suggestion will be investigated in the study.

Saito and Spurling (1992) tried to address the issue of solution to gender and agricultural resource acquisition. They suggested that constraints that are gender neutral can be addressed with general solutions, but gender specific problems often need gender specific solution. Therefore, the issue of access to capital should therefore be addressed specifically to target women. In Kenya, there exists the Kenya Women Finance trust which apart from bearing the name "women" operates like any other micro finance but never focus on agriculture as a core area of investment. In Yala division, there exists no organization that targets women involvement in agriculture. The study therefore investigated the reasons behind lack of micro financial institutions targeting women in Yala Division.

Zehra, (2000) in his article on women and agricultural development put forward the idea that, women may demand financial services but they have very little access to

formal credit or deposit facilities in the Middle East with the exemption of Cyprus where 25% of the agricultural loans have been disbursed to women. He is in agreement that women access to credit is generally minimal in the Middle East. This is in agreement with Huvio (1960) who holds the same view.

A study done by FAO (1996) focused on credit schemes in Kenya, Malawi, Sierra Leone, Zambia and Zimbabwe found that women received less than 10% of the credit for small holders and only 1% of total credit to agricultural sector.

Spence (2001) also realized that many Third World Countries have disparity on gender access to credit. He also noted that these countries have Micro-Credit Schemes to finance agricultural activities. However, she did not agree to it that Micro-credit is the only solution to poverty reduction among women. She suggested a number of gender related issues to be addressed if Third world countries need to succeed in gender parity and eradication of poverty. She asserted that: Women must have access to loans for all types of profitable agricultural activities not just those described by gender stereotyping. This will require a realistic assessment of the loan required and the likelihood of default; credit facilities, should be accompanied by agricultural technical skills and human resource development training both for women and community leaders to enable people utilize and receive full benefits of loans; equal access to credit means more than just micro-credit. The full range of economic policies, including banking regulations and access to commercial credit and other financial services, needs to be reviewed to ensure that there are no explicit or implicit barrier to full gender equality and equity.

Unlike other writers Spence (2001) gives out a holistic picture which focuses not only on access but putting forth safety measures to eliminate constraints that may hinder the success of utilization of credit.

The general development of agriculture is generally backward in Yala division attempts by Saga Thrift (Kisumu-based micro financial institution) to introduce credit a service to farmers in the 2008 was marked with massive failure. The research was therefore set out to address /access to capital as a main factor that hinders the involvement of women in agriculture.

2.2.2 Women's Access to land

Land is a very vital resource in agriculture. Traditionally, land has been used as a medium to hold crops and pasture for livestock. In Kenya, a title deed is a document showing absolute ownership of land. The colonial government also introduced in 1897 a 99 years leasehold period that to date forms the basis of Lease Hold Titles (Felix 2004). In commonwealth secretariat paper on gender mainstreaming in agriculture and Rural Development (Spence, 2001), highlights on insecure tenure that reduces the incentive to invest in land improvement and good land husbandry on the side of women.

In the United States, American Indian Probate Reform Act 2004 creates reserve land for Indians except in Alaska. However, there is no mention about women access to land since there is an assumption that gender equity has been achieved. Rekha and Mary (2008) shows a general picture that land title and tenure tend to be vested in men, either by legal condition or by socio-cultural norms. Land reforms and resettlements have tendered to reinforce these biases against tenure for women. He further acknowledges that land shortage is common among women. Women form smaller and more dispersed

plots than men and are less likely to hold title, secure tenure, or the same rights to use, improve or dispose of land. Rekha and Mary (2008) further reveals the relationship between involvement of women and their ownership of land. In Uganda, women account for approximately three out of four agricultural laborers and nine out of ten food producing labourers, yet they own only a fraction of land (World Bank Report 2007).

In the United States of America, Haney and Knowles (1986), reveals a programme in collaboration with the University of Vermont Extension System, UVM's center for sustainable agriculture and the United States department of agriculture works to increase the number of women owning and operating profitable farms. This effort shows quite a different picture of Kenya where university and local NGO's client focus on female gender transformation.

Damisa and Yahana (2007), in their research, cited land tenancy as a factor that deters women from engagement in agriculture in Nigeria. This view is also held by Noyelu and Gadzama (1991) where they revealed the success of local programmes acquiring land for women self help groups. According to the 1998 statistical abstract of the United States, 21% of farm operators and managers and 19.0% of farm workers are female. According to a census conducted in 1997, United States Department of Agriculture (USDA, 1999), women operated 165,102 farms (8.6% of all farms).

Farms operated by women are smaller than the national average of 487 acres (Effland, 1998). In 1997 almost 43% of female operated farms were less than 50 acres while only 285 of male operated farms were less than 50 acres. Even in pricing of land, gender was a key factor. Though there is limited unequal access, the general perception is that the Kenyan women have no access.

FAO (Food and Agricultural Foundation, 1995b) emphasizes the same view held by Felix (2004) that in most countries, land titles is in the name of the male head of the household. Worldwide, households headed by women tend to have too little land. In Bangladesh, many female heads of households are either landless or have very smallholdings. In Jordan women own 29% of the land. In Oman only 0.4%, in Lebanon only 1% and in UAE only 5% of registered land owned by women (FAO, 1995). Jordan's and Zwarteveen (1997:100) noted that women who had access to land reaped more from irrigation of rice than those who had not and are forced to watch while others gain.

2.2.3 Women and agro-input marketing

Agro input are the products needed to produce crops. These include fertilizers, seeds, agro-chemicals fungicides, insecticides, herbicides etc). Oluoch (2007) in a report by CNFA and AGMARK shows the distribution of agro-stock list by gender as follows;

Table 2.1: Distribution of Stockist by Gender in East and Central Kenya

District	Male	Female	Total
Taita Taveta	39	9	48
Makueni	75	13	88
Murang'a	98	29	127
Embu	81	17	98
Total	293	68	361

Source: CNFA and AGMARK Report 2007

CNFA and AGMARK Distribution Survey Report On The Characteristics of Stockists Of Agricultural Input (2008) In Coast Province.

Table 2.2: Showing the Distribution of Stockist by Gender in Coast Province.

District	Male	Female	Total
Mombasa	26	1	27
Malindi	15	0	15
Kilifi	28	4	32
Total	69	5	74

Source: CNFA and AGMARK Report 2007

From the above figures, male still dominate the agro-business sector. Same concern was earlier realized in the 2005 report when a much wider survey was carried out in western Kenya.

Table 2.3: Showing the Ownership of Agro-Business by Gender in Western Kenya.

District	Female (%)	Male (%)
Bonde	24	76
Gem	22	78
Kisumu	18	82
Bungoma	12	88
Busia	10	90
Butere-Mumias	11	89
Kakamega	7	93
Lugari	18	82
Mt. Elgon	29	71
Teso	12	88
Vihiga	8	92
Total	15	85

Source: CNFA and AGMARK Report 2005

According to CNFA & AGMARK (2005) report, males dominate the stockist business. Only 155 of the total 708 stockiest were women. Report further revealed that the demographics for the districts increasingly indicated a rising ratio of women to men and rapid increase in female headed households. Selling agricultural input is still a preserve of the male.

The report also shown that male owners are more educated than female. This implies that women cannot therefore get access to capital to expand their skills and knowledge in agribusiness management. Musalia (2005) revealed that women only constituted 1% of agro dealers in Kenya. This shows that lack of involvement means that they cannot draw significant gains from it. This study seeks to confirm the state portrayed by different findings and to establish the actual state in Yala division.

2.2.4 Women in Farm Produce Marketing

A report by Aga Khan Foundation (2008) on women and agricultural market shows that women do not only have access to market and market opportunities but women in South Asia also face constraints with respect to access to appropriate knowledge and information on markets and related aspects.

In this document, there is an appeal to make women work knowledgeable and have more access to market. Compared to the situation in Kenya and down to Yala division, it is then obvious that women's access to market is a worldwide problem and therefore the study will focus on the same.

Zaraida (2009) suggests an assessment of the impact of agricultural trade and its disparities on gender and how the gender asymmetry came into existence. He explores

the idea that open market policy can impact negatively on the producer country and further still on women participants. He goes ahead to show that liberalization of agricultural market impacts negatively on women's rights as indicated in article 14 of the Convention on the Elimination of all forms of Discrimination against Women (CEDAW).

2.2.5 Women and Agricultural Labour Market

Razari and Miller (1997) outlined the female labour involvement as follows; the productive role- this refers to market production and subsistence/home production undertaken by women which generates an income (whether financial or in kind); Reproductive role- This refers to child bearing and child rearing responsibilities born by women which is very essential for the production of labour force and Community management role -this refers to the activities undertaken by women to ensure the provision of resources at the community level. This is an extension of the reproductive role.

Sangeeta (1996) indicated that in the tribal, low rainfall, semi arid and regions, much of the work will regard to animal management has to be looked after by women due to immigration of male workers. In many cases the income from dairy animals does not remain in the hands of women. This study was set out to investigate how women benefit or doesn't benefit from the activities of agricultural produce marketing in Yala Division.

2.3 Social Factors Influencing Women Involvement in Agriculture

The social factors include such issues like cultural issues, domestic chores, education and the impact of HIV/AIDS on the contribution of women in agriculture.

2.3.1 Cultural issues and women involvement in Agriculture

Kavinde (1997) exposes a situation where women in the upper caste in India are not allowed to be seen outside their houses. On the other hand, women from the lower caste are able to move outside their houses though their participation in farming is limited to boiling rice before the drying process. This view was also emphasized by Vedavalli and Sharma (1997) who enforces that religious concept of purity and pollution prevent workers from participation in agriculture in the Kurichiyas community in India.

Huvio (2006) generalizes that cultural factor affecting women vary from place to place, country to country and continent to continent. He further suggests that research should be carried out to address the cultural diversity and how to assist women get involved in farming. It was because of this view that the research was set out to go and unearth the cultural constraints that can hinder women's involvement in agriculture in Yala division.

According to Akhter (1995), low productivity is explained by both biological and socio-cultural constraints. Low literacy levels, sex stereotyping of rolls and socio-cultural factors such as early marriages, seclusion, childcare and other reproductive chores obstruct women from getting productive resources. Husbands (men) and wives (women) both usually have a say over the use of resources, although they may be unequal (Shumaker, 1991). Men's ownership rights over animals are guaranteed by a near universal set of inheritance rules that are gender biased and rooted in religion and patriarchal kinship system. The two writers too share a view that culture is the source of gender segregation of agriculture.

According to the study undertaken in Tanzania, (FAO, 1998) a married woman has got no rights over livestock nor land. Even if a woman works hard and her effort yield livestock on a piece of land, when there is divorce, the perception of cultures implies all the belongings revert back to the man. In India unlike Tanzania, women can own livestock and land. They can decide what to do with them. But when it comes to selling, they need men's agreement (FAO 1998).

Domestic chores have been found to impact negatively on women productivity. Women spend up to nineteen hours per day in crop and livestock production. In addition to domestic work such as cleaning, cooking, baking, child rearing and collection of water and fuel for household use (FAO, 1995).

This study therefore investigated the cultural constraints and domestic chores that affect women's participation in agriculture and recommend action plan to rescue the situation.

2.3.2 Impact of HIV/AIDS on Women's Involvement in Agriculture

The AIDS pandemic is a global problem that affects workers in all spheres of life. This is a very deadly disease. Richard, (2002) quoted Chekhov in his book, "When a lot of remedies are suggested for a disease, which means, it can not be cured". This statement is truer of AIDS than almost any other disease and particularly so in Africa.

From the national HIV/AIDS statistics, it has been realized that the disease affects more women than men. In Kenya, by the end of 1999, about 1.1 million women were infected with the disease compared to 900,000 men since it was first discovered.

The chart below shows how different gender groups have been affected.

Table 2.4 Percentages of People Living With AIDS/HIV Up To 1999

Category of people	Percentage (%)
Women	53
Men	43
Children	4
Total	100

Source: National AIDS Control Council of Kenya (NACC)

Table 2.1 gives percentages of 43% (men), 53% (women) and 4% (children).

Hopkins in his analysis with the Center for Disease Control (CDC) study done from 1970 realized that there are more women and girls engaging in extra –marital and pre-marital sex respectively than before. This has led to varied infection rate between male and female gender with the latter’s rate on a steady increase. Social and cultural differences that exist affecting infection rates in various countries (Richard, 2002). A comparative study done in Kisumu, Kenya and Ndola in Zambia showed that 35% of women were infected with HIV. In Kenya the bulk of the infected people living with HIV are found living in Nyanza Province.

The HIV/AIDS pandemic has claimed the lives of over 20 million people in Sub Saharan Africa (SSA) where the majority of the people live in rural areas and more than 80% depend on agriculture for their livelihood. (Kormawa, 2009) because agriculture is at the heart of Africa’s development as the account of the need for food, raw materials, export earnings, employment and household as well as national income (ibid).

Official statistics show that women are disproportionately affected by AIDS compared to men (SAFAIDS: 2000). The African social expectation is that when women

are caregivers for the sick, is it their husbands, relatives or children. A study conducted in Tanzania reported that 60% less time was spent on agricultural activities when a woman is taking care of sick husband.

In West Africa, women have no rights to the land of a deceased spouse, which must pass to a male relative, and they commonly lose other possession as well. These various problems have contributed to the feminization of rural poverty (TAIARD, 2003).

According to the above publication (TAIARD, 2003), the widow is often blamed for transmitting the disease and is accused of promiscuity and immorality. Some widow are harassed and forced to leave their village, move to towns where they engage in putty trade, transactional sex as remarry to escape from stigma. Because of the deepening differences, it was therefore important for the study in Yala division to focus on the gendered dimension of HIV/AIDS and how it contributed to women's rural poverty.

2.3.3 Education and women involvement in Agriculture

Education is the process of teaching, training and learning with an aim of improving knowledge and skills (Hornby, Wehmeir, Turnbull, McIntosh & Ashby, 2006). Therefore, Agricultural Education is the teaching, training and learning of agriculture as a subject with an aim of improving knowledge and practical skills.

In the Eastern India, literacy levels have increased (58% as per 2001 census). Bhagirati (2006) highlights that educational advancement shall increase the bargaining power of women to claim ownership to land, credit and other assets. He continues to say that the expansion of education will expand women's mobility, their control over farm

produce and income, exercise political power and participation in household and community decision making process. (Ibid, 2006).

According to the European Policy Research Centre of the University of Strathclyde written in August (2001), the barriers of women in agriculture includes the lack of courses relevant to their needs. The report suggested that agricultural education and training should include courses related to the kind of work women perform on the farm such as administration, accounts, running daily schedules and such key areas like organic farming, rural enterprises, including IT and other skills courses.

In France, a national open –learning training programme was launched in 1999. Provided the basis for the development of an innovative distance-learning training package, aimed at providing female fish farmers with skills and professional status require to diversify rural development.

In 1910, an initiative was made for Native American Women to access agricultural education. This initiative excluded Mexican Americans and African Americans. Janiewski (1986). He continues to confirm that currently Americans have reached and hit the equity level of provision of agricultural education to both men and women.

Rekha and Mary (2008) exposes that women are less educated in parts of Africa, Asia and the Middle East. Illiteracy hampers their access to and ability to understand technical information. World-wide women have less access to education and training in agriculture (World Bank Report, 2008).

In a study conducted by Laith (2007) revealed that about 48.75 percent of women farmers hand primary school education while 13.755 of the women had adult literacy

education, 12.5% had college degree education but 10% of the women farmers had no education at all. These education standards are clear indication of the varied levels of involvement among women in agriculture.

In Pakistan educational attainment shows poor results. Particularly the educational status of Pakistan women are among the lowest in the world. According to the 1981 census, the literacy rate for the population of 10 years and above is 26.2% women. (Anonymous, 2009b). Given the rate women play in Pakistan, education is a major constraint to rural development.

According to a study on gender in agriculture and Agro-processing conducted in Lebanon by the Economic and Social Commission for Western Asia (ESCFWA) the following results were found.

Table 2.5: Distribution of Agricultural Workers by Educational Level

Educational level	Men	Women
Illiterate	27.1	43.5
Read and write	22.0	-
Primary	34.4	27.8
Intermediate	11.3	-
Secondary	4.6	-
University	-	-

Source: Lebanon Central Administration of Statistics (1997)

The results reveal that the literacy level among agricultural workers is very lower and further still, literacy level of women is extremely low. From intermediate level to university level, the results reveal percentage of zero. This reveals that education level among women farmers is an issue of concern.

In Nigeria, opportunities are being provided to women to advance their careers in agriculture and they have excelled. From livestock shows, to agricultural mechanics, welding and agricultural education classrooms are being led by a growing number of women educators. These fields are dominated by men (FAO, 1997). This shows that Nigeria as a country has taken bold step in affirmative actions for women to promote women's involvement in agriculture.

In Uganda, women in agricultural education at the secondary level are significantly under represented composing of only 14.6% of the total population and statistic not well documented. In 2002 it was reported that only 16.0% of secondary level agriculture teachers were women in Uganda (Vedavalli & Sharma, 1997).

Murungi aired her view that the government recognizes the role played by women in Kenya in providing over 70% of agricultural labour but were under privileged earlier in the provision of education and extension services (KTN, 2009). Thus admission by the government minister shows a very bad situation that needs to be addressed. This study therefore, was set to unearth all preconditions that have made the women farmer to lack education especially in Yala division.

2.4 Technology and Women involvement in Agriculture

Agricultural technology has been identified as a factor that limits women's capability towards sustainable agriculture (FAO, 1999). Kansnakolglu (1997) also supports the idea that lack of technology suitable for women farmers, the inadequate technologies for women's activities impairs women's productivity.

According to the European Policy Research Centre report (2001), women generally use lower level technology because of difficulties in access, lack of skills, lack of time and opportunity and cost.

In Latin America, both men and women have been involved in farming on equal basics to increase productivity since the Second World War (Ausblarger, 1990).

According to FAO report (1995) on sustainable development in Asia, men dominates activities which involves mechanical powered machines in the early stages of crop cultivation while women dominate food processing and storage which requires manual labour.

In Pennsylvania, United States, women are supported fully. Agricultural professionals are committed to facilitate women's access to very high level agricultural machinery (USDA, 1999).

According to Common Wealth Scientific and Industrial Research Organization (CSIRO) report (2002) on sustainable ecosystem, technology that is needed is not viewed from the point of daily mechanical farm operations, but on information system that is computer based involving computerized financial planning system and the on-line banking to monitor budgets and make decisions to improve women's involvement in e-commercial agriculture.

In Africa and other Third World countries, women generally use lower levels of technology because of difficulties in access, cultural restriction on use, or regard for women's crops and livestock as low research priorities (Rekha & Mary, 2008). According to Saito and Spurling (1992), there are always cultural constraints to women's using animal traction.

According to studies conducted in Zambia, Burkina Faso and Kenya, less than 1% of women own such farm implements like seeders, weeders and ox or tractor drawn ploughs (IFAD, 1999). According to FAO report of 1998, most inputs such as labour and fertilizer went to men dominated plots.

It has also been realized in Gambia that, new techniques increased the value and economic income from rice farming, and men took control of both women's plots and their activities therein. Increased economic revenues always raised the value of the farming system and attract men's attention (FAO, 1984).

There is no much that has been done in regards to gender and agriculture in Kenya. The study therefore focused on the access of women to agricultural technology. It focused on lack or inadequacy of women to technology and the sustainability of agriculture visa-avis the state of agricultural technology.

2.4.1 Agricultural Extension and women involvement in Agriculture

Agricultural extension is the application of scientific research and new knowledge to agricultural practice through farmers' education (wiki, 2009).

Damisa (2007) in their study on women's' participation in agricultural productivity established women extension index at 2.109. They continued to emphasize those women farmers who have contact with extension agents will tend to have better access to information technology which raised their level of participation in the agricultural productivity.

In the USA, several universities have come up to offer extension services. Washington State University Extension Program was launched to give women the tools

and information they need to help their family farm operations and agribusinesses succeed (ibid, 2007).

Sangeeta (1996) in his study on role of Women in Small-Holder Rain fed agriculture explains that, women play a very important and major role in crop and livestock production but not much has been done to modify the approach and contents of training and extension programs.

According to FAO (2008) report, agricultural extension has highlighted a number of weaknesses in reaching rural women. Most extension services have been devoted to farmers who own land and who are willing and able to obtain credit and invest it in inputs and technological innovation. The study in Yala Division is set out to confirm the unfairness of engendered extension services.

The attitudes of extension personnel have also been found to be an important barrier between extension and women. (FAO, 2008).

According to Okunade (2008) in his study on the Importance of Agricultural Economics and Extension, in Osun State of Nigeria, exposed that neglect of women from extension services in the past have made agricultural development be focused on women. He further says that this neglect has led to low productivity of output in agriculture. In his findings, he suggests that extension services should be made cheaper for greater accessibility by women (Okunade, 2008).

A report by FAO (2008) suggested that the extension service, should be more gender –sensitive when organizing extension activities, so that women farmers have full and appropriate access to extension meetings, demonstrations, field days and other

activities. The report further highlights that extension workers should motivate women to attend gender neutral extension activities.

In Sub-Saharan Africa, Trainers and agricultural extension agents are usually male and thus may not speak to, or get close to women. This is very true to Muslim faithful (FAO, 2008). According to the World Bank report, it is only Nigeria that has extensively trained female extension workers to take extension services to women (World Bank, 2009).

According to Davis and Place (2003), there has been a new approach to provision of agricultural extension to farmers. Farmer Field School Approach. Groups meet under facilitator during certain periods of crop cycle. This method utilizes the FAO (2001) adult-based learning to make Kenya farmers learn through experience. They say that these systems have worked well but more on the side of men than women who have been pegged with domestic chores. The study was therefore set to reveal the state of agricultural extension to the woman farmer in Yala division.

2.5. Gender Policies and Women Involvement in Agriculture

Before embarking on various areas that relates to gender and development of agriculture, it is wise to look at a brief historical development of gender related policies.

The Fourth World Conference on Women in Beijing (FWCWB, 1995) identified the need to involve women actively in environmental decision making at all levels, and to incorporate a gender perspective in all strategies for sustainable development. (SIDA, 1998). In the Beijing platform, various governments agreed to encourage the protection, use and promotion of the knowledge, innovations and practice of women in indigenous

and local communities and ensure that women's intellectual property rights are protected under national and international law (SIDA, 1998).

The debate on the advancement of women and gender equity in relation to the development process has evolved from the Women in Development (WID) to Gender and Development (GAD) approach. In the WID approach, development resources were used to develop women's conditions and make their contributions visible. WID approach did not focus on the basic structures of inequalities but on women alone (Marine, 2009). GAD approach is to examine how the relative positions of men and women in society, and the system governing the relationship between them and how the system affects their ability to participate in development (FAO, 1997). According to Kabeel (1995) the GAD approach requires the social political and economic structures and development policies be re-examined how the relative positions of men and women in society, and the system governing the relations between them, affect their ability to participate in development (FAO, 1997).

It is therefore very important to empower women to transform the unequal relation. FAO asserts that "empowerment" cannot be given, it must be self generated, by facilitating women's access to enabling resources which will allow them to take greater control of their lives. The GAD approach requires that social, political and economic structures and development policies be re-examined from the perspective of gender relations (FAO, 1997).

A good policy structured on the theory of gender mainstreaming should focus on gender analysis and the empowerment of women to attain equity and at all cost, avoid gender blind approach strategy (FAO, 2001).

A monitoring body that ensures that gender sensitive policies are implemented is the CEDAW Committee on the Elimination of Discrimination against Women formed at the 1979 conventions on the Elimination of All forms of Discrimination against Women which emphasized the access to agricultural credit and loans, marketing facilities appropriate technology and equal treatment on land resettlement schemes.

2.5.1 Gender Mainstreaming and Women Involvement in Agriculture

Gender refers to the “socially determined ideas and practices of what it is to be female or male” (Baden, 1999). These ideas and practices are sanctified and reinforced by host of cultural, political and economic institutions, including household, legal and governance structures, markets, and religion (Ruth, 2005). The gender division of labour usually finds men and women relegated to the public and private sphere respectively. Women are thought to be ‘natural’ caregivers and men ‘benevolent dictators’ (Bruce, 1989 and Moser, 1993).

Elena (2009) in her study on gender division of labour revealed that women undertook such activities that are labour intensive while men performed few tasks that involved technical expertise and higher level technology. The table below summarizes her findings and clearly shows the gender division of labour.

Table 2.6: Gender division of labour

	Activities	Women	Men	Both
Agricultural activities	Land preparation			
	Plowing		√	
	Planting		√	
	Weeding by hand	√		
	Weeding with hoe	√	√	
	Fertilizing		√	
	Hilling		√	
	Fumigating		√	
	Harvesting			√
	Irrigation			
	Storing			√
	Threshing			√
	Rearing of small animals	Feeding	√	
Forage gathering				√
Watering		√		
Rearing of livestock	Milking			√
	Watering			√
	Feeding			√
	Forage gathering			√
	Herding			√
Reproductive activities	Preparing food	√		
	Cooking	√		
	Fetching water	√		
	Cleaning	√		
	Washing	√		
	Gardening	√		
	Child caring	√		

Source: Elena (2009).

The table above was used to display gender division of labour it was modified to develop a checklist that was used in the study to identify male and female gender involvement in agricultural related activities. With the engendered division of labour, it sounds obvious that members of the female gender find it difficult to access means of production and to enjoy the output (Elena, 2009).

It is therefore inevitable to adopt gender mainstreaming measures. Gender mainstreaming involves providing equal opportunities to the members of both female and male genders (NDP, 2000). Mainstreaming is a strategy that aims to make equality considerations, and in the case of NDP, gender equality, is a regular part of the mainstreaming process. FAO (1999) revealed that the impact of domestic agricultural policy designed without taking gender into account has a knock on effect in the formulation of other measures and trade policies. This study in Yala division was an audit of gender equity and established which affirmative action to be taken to address this problem.

2.6 Theoretical Framework

This section of theoretical framework seeks to explain the Equity Theory. The researcher explained the rationale of selection of this theory, the general principles and understanding of the theory as initially perceived by the proponent in its original areas of study and the application of this theory to women's involvement in agriculture.

2.6.1 Theory of Equity

The main reason for the study was that women have been disadvantaged in agriculture. There is no balance in ownership, involvement and in the utilization of resources. This study as therefore focused on the Equity Theory and show how women's effort may or may not be rewarded.

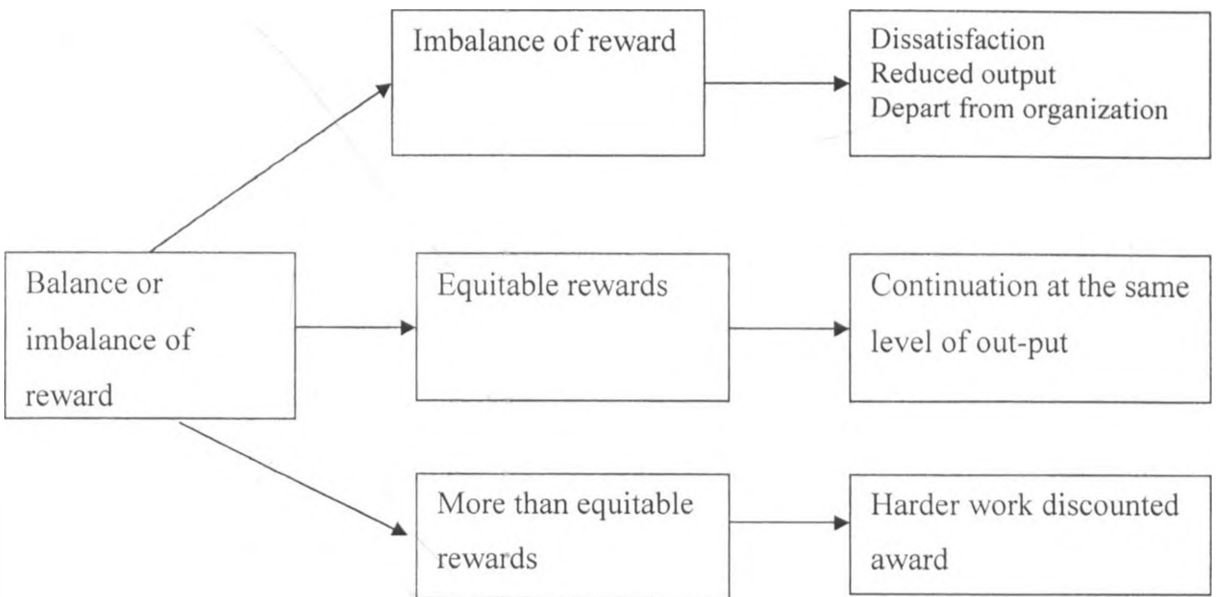
The theory of equity was developed by Adams in 1962 and it attempts to explain rational satisfaction in terms of perception of fair/unfair distribution of resources with interpersonal relationships. It is considered as a justice theory.

Equity theory refers to an individual's subjective judgment about the fairness of the reward she/he gets, relative to the input (which includes many factors, such as effort, experience, and education) in comparison with rewards of others. The essential aspects of the equity theory may be shown as follows (Adams, 1962).

$$\frac{\text{Outcome by a person}}{\text{Input by a person}} = \frac{\text{Outcome by another person}}{\text{Input by another person}}$$

There should be a balance of the outcomes/input relationship for a person in comparison with that of another person. If people feel that they are not rewarded, they may be dissatisfied, reduce the quantity or quality of output or leave the organization or the task. If people perceive the rewards as equitable, they probably will continue the same level of output. If people think the rewards are greater than what is considered equitable, they may work harder. One problem of equity theory is that people might over estimate their contribution and the rewards others receive (Cosier & Dalton, 1983).

Figure 2.1: A Framework showing Theory of Equity



Source: Cosier & Dalton (1983)

The Equity Theory was expected to explain the equity or inequity between the female farmer and the male farmer.

In farming/agriculture, the relationship should be as stated below:

$$\frac{\text{Outcome by a woman}}{\text{Input by a woman}} = \frac{\text{Outcome by a man}}{\text{Input by a man}}$$

This is based on the assumption that contribution and reward by both men and women are the same. If there is imbalance reward, then there will be dissatisfaction, reduced output and the departure of women from farming related activities. If there is equitable reward among men and women, then the perception is the input and output. If the rewards are more than equitable, women will continue working harder.

Since the study focused on examining culture factors that influence effective involvement of women in agriculture, the equity theory would therefore be very relevant in associating the cultural factors that would either explain the equity or inequity in

effective involvement and the rewards that both the male and female gender would get from their involvement in agriculture.

To explain how economy influence effective involvement of women in agriculture is another objective that the study is set out to investigate. The equity theory would therefore be relevant in explaining equitable or inequitable access of both gender groups and how it would influence the outcome of varied involvement in agriculture.

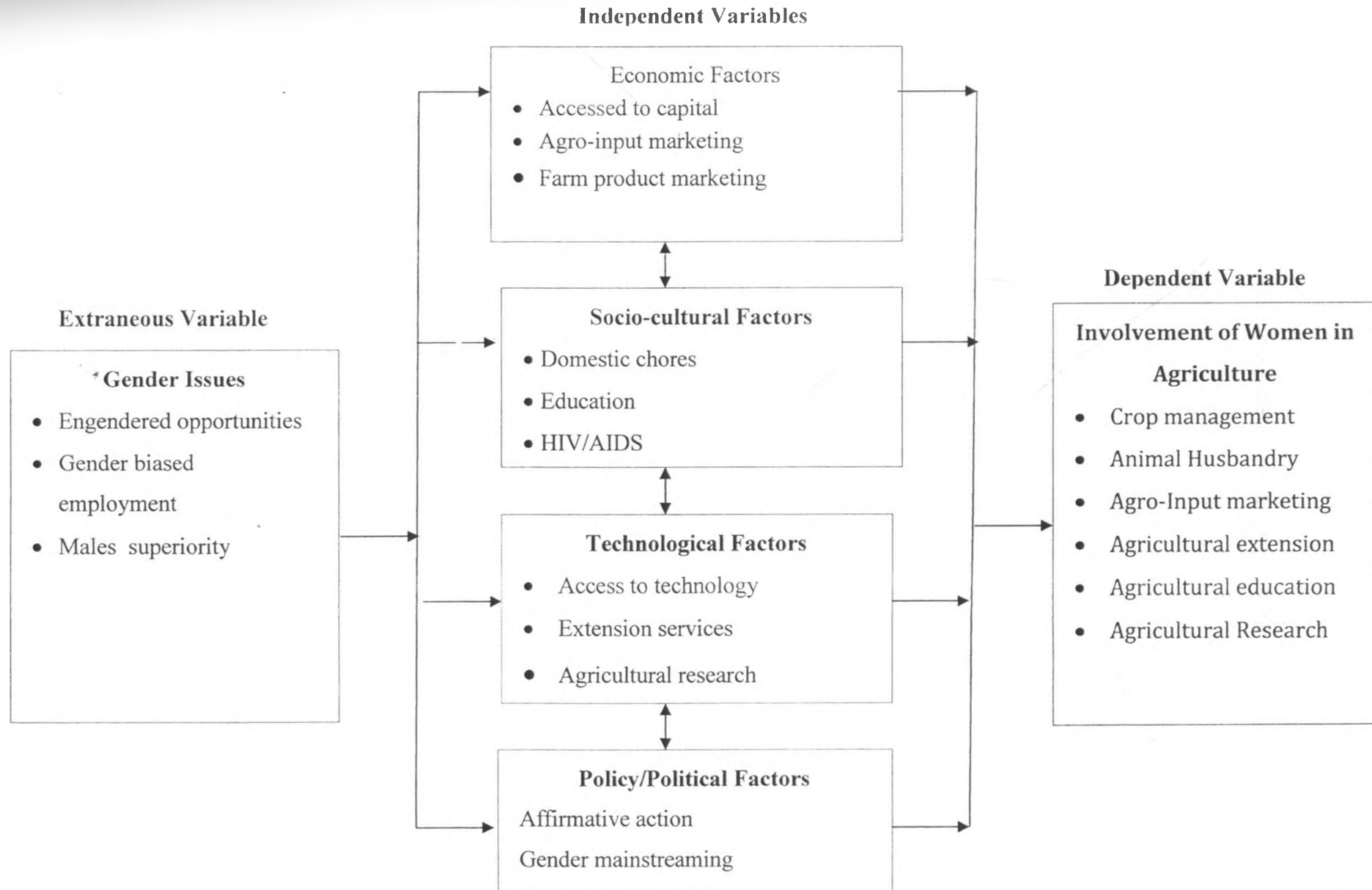
When it comes to determining how technology factors influence effective involvement of women in agriculture, the key issues are access, ownership and control of means of production. The theory would be on target in explaining equitable or inequitable access to technology between men and women as they engage in production of farm produce.

The equity theory was assumed to be relevant to the study in an attempt to explain policies that the government has put in place to make sure that the gender groups were mainstreamed in their involvement in agriculture.

2.7 Conceptual Framework

The conceptual framework shown in figure 2.2 guided the study

Figure 2.2 Conceptual Framework



Involvement of women in agriculture as indicated in the conceptual framework is the dependent variable. Economic, social, technological and policy/political factors are the independent variable. The research studied how these independent variables would influence the dependent variable. Gender issues, is the extraneous variable that may have influence on the independent variables which would then have special/unique effect on the dependent variable. The two way arrows linked independent variables show the interrelatedness of the variables. They would affect each other before affecting the dependent variable.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section discusses the research design and methodology that was used in conducting the study. It focuses on descriptive survey, target population, sample size and sample selection, research instruments, data collection procedure, data analysis and ethical considerations.

3.2 Research Design

This study adopted descriptive survey design. Descriptive survey design focus attention on formulation of objectives, designing the data collection instrument, selecting the sample, collecting the data, processing and analyzing the data and reporting the findings (Mugenda & Mugenda, 2003).

Descriptive research design determines and report the way things are. It attempts to describe such things as possible behaviour, attitudes, values and characteristics (Ibid). With the nature of this study, descriptive survey design is the most appropriate in collecting data regarding opinion, perception and experiences of both men and women on the factors influencing the involvement of women in agriculture.

3.3 Target Population

The study was conducted in Yala Division of Gem District in Nyanza Province of Western Kenya. Gem District was curved from the Greater Siaya District and lies to the Eastern part of the current Siaya District which fall between latitude 0°26' and 0°18'

North and longitude 33°58" East and 34°33' West. Gem District has varied altitudes which vary from 1100m and 1415. Yala town which is the division's administrative headquarter has an altitude of 1412m above sea level.

The total area of Yala division is 209km² and has generally hilly topography. The main tourist attractions are the spectacular Rawalo hills used for religious retreats and the Ndanu Falls on river Yala which provides water for domestic and agricultural use for the residents. Yala division can be accessed through Kisumu - Busia tarmac highway and the Kisumu-Butere railway line.

Yala town administrative headquarters lies 48.29km from Kisumu Town (Provincial headquarters) which lies approximately 266km from the Kenyan capital Nairobi. Administratively, Yala Division is found in Gem District of Nyanza province in Western Kenya. The division is administered under the provincial government and two local authorities – Yala town council and Siaya county council which administer the rural areas.

According to the Millennium Village Report (2007) (See APPENDIX III), the population of Yala division is estimated at 80,000 people with a population density of 325 people per square kilometer. The main economic activity is subsistence agriculture. However, other residents are employed by the government and non-governmental organizations. The poverty indexes in this region have been on the increase and currently lie at 64% according to the Communication Commission of Kenya.

According to the Millennium Village Project report of 2007, estimates of 10,327 households were registered in the ten sub locations (See APPENDIX III). According to the report, these households excluded those who were residents but had work related

activities in other areas and urban centers. An average household had an average of five children. In total an average household had an estimated average membership of seven.

On the basis of the same report, it was therefore estimated that

Total population (N) = Average family size x households registered.

$$N = 7 \times 10,327$$

$$N = 72,289$$

The study excluded unmarried men and women who were then considered to be part of their parents households. It also excluded those who had families but had not put up houses in their parents' homesteads. Therefore, it was rational to say that the universe can be estimated at 80,000 individuals.

3.4 Sample Size and Sample Selection

With an estimated population of 80,000 individuals, sample size was calculated with the following formula

$$\frac{NZ^2 \times 0.25}{[d^2 \times (N - 1) + (Z^2 \times 0.25)]}$$

Where

n = sample size required

N = total population size (known or estimated)

d = Precision level (usually 0.05 or 0.10)

Z = number standard deviation units of sampling distribution corresponding to the desired confidence level. (Cole, 2009).

Substitution

$$N = 80,000$$

$$D = 0.05$$

$$Z = 1.96$$

The confidence level is 95% and ≈ 0.5 precision levels.

Therefore

$$n = \frac{(80000 \times 1.96^2) \times 0.25}{[0.05^2 \times (80000 - 1) + (1.96^2 \times 0.25)]}$$

$$n = \frac{307,328 \times 0.25}{199.9975 + 0.9604}$$

$$n = 382.328836$$

$$n = 182 \text{ People}$$

The sample size therefore was 382 respondents. To get an objective view of all the gender groups, the study investigated 191 women and 191 men.

The sampling procedure that was very applicable for this study was the multistage sampling. Given that there are 10 sub locations with an average of 1033 households per sub location, the variation in population was not big. For example Nyawara sub location which had the least number of household had 729 (-304) and Marenyo sub location had 1511 (+478). The variation was not big since both sub locations were to the extreme in numbers.

For this reason 38 copies of the questionnaire were administered to each of the 10 sub locations. Each sub-location was considered a cluster. From each sub-location, three villages were selected through a random sample.

Around 12-13 copies of the questionnaire were then administered to both female and male house heads selected through a systematic sampling process with a central position of the village identified as the focal point for systematic sampling.

3.5 Research Instruments

The researcher used questionnaire and interview guide as instruments of data collection.

Questionnaire

The researcher administered questionnaire to 382 respondents out of a population of 80,000 to gather both quantitative and qualitative data. If the respondents were literate, self administered questionnaire was used. The questionnaire had both closed and open ended questions that were administered to both men and women. The open ended questions gave the respondents an opportunity to air their views satisfactorily in regard to their participation in agriculture. The questionnaire had five sections-the first section (A) sort to find information related to demographic characteristics of respondents, Section B contained questions related to economic factors, section C examined socio-cultural factors, section D had questions related to the technological factors while section E was concerned with political/policy factors. The researcher recorded the respondents' names only with their consent. Data collected targeted their attitude, knowledge in agriculture, practice and various constraints faced by women in the field of agriculture.

Interview Guide

The researcher used the questionnaire sample as an interview guide to interview respondents who happened to be illiterate. This method was useful in collecting personal information, attitude, perceptions beliefs and other factors that influenced women's participation in agriculture. The interviews were also used to assist in evaluating the contribution of various governmental and non governmental agencies towards supporting. Based on the questionnaire it examined economic, socio-cultural, technological and policy/political factors.

3.5.1 Piloting

To ensure that the data collection instruments were reliable, a rigorous item analysis was conducted to ensure that the instruments collect consistently what they were meant to collect and then a pilot study was undertaken. The questionnaire was administered to 10 respondents derived from the study population in Sinaga village but who was not included in the sample population for the actual study. Sinaga village was too not included in the study. Test-retest technique was used in the piloting study.

The questionnaire was administered to 10 respondents. Responses were studied and questions that seemed to elicit varied responses due to misunderstanding of the respondents were then corrected. After two weeks, the corrected questionnaire was administered to the same respondents.

3.5.2 Validity of Instruments

Validity is the accuracy and meaningfulness of inferences, which are based on research results. In other words, validity is the degree to which results obtained from the analysis of data actually represents the phenomena under study (Mugenda & Mugenda, 2003). After the construction of the data collection instruments, they were presented to two experts (Supervisors) from the University of Nairobi for examination. Their recommendations were taken in to improve both the face and content validity.

3.5.3 Reliability of Instruments

Reliability is a criterion that refers to the consistency of data stemming from the use of a particular method. A measure is reliable to the extent that repeated application of

it under the same condition (by different researchers, for example) gives the same results (Taylor, 2008). Using Statistical Package for Social Sciences (SPSS[®]) software, the results of the first test were correlated with that of the second test (Focus was on quantitative data only). Pearson's (r) correlation coefficient of 0.899 was generated. Kathuri and Pals (1993) stated that a reliability coefficient of 0.70 is conventionally acceptable in research. A reliability coefficient of 0.899 is within acceptable range. The questionnaire was therefore seen as very reliable and was then administered to the selected sample.

3.6 Data Collection Procedure

The National Council for Science and Technology through School of Distance and Continuing Education of the University of Nairobi granted permit to conduct research in Yala Division in Gem District. The researcher then produced a copy of the permit to the District Commissioner and the District Agricultural Officer who granted authority and protection to the research team. The questionnaire was administered between 8.00am and collected at 4.30pm. The researcher waited for respondents to answer questions in the questionnaire and collected them as soon as they were through. The interviews were conducted for two weeks with every respondent given 30 minutes. Respondents were asked the same questions as they appeared in the questionnaires and the response filled in to the questionnaire. The questionnaire was used as the basis for the interview as a guide to prevent any form of variation that would have occurred.

3.7 Data Analysis Technique

Data was analyzed using descriptive statistics which included frequency counts, and means, and Inferential statistics such as Pearson's (r) - Product Moment Correlation Coefficient (with aid of SPSS[®]) was used to look at the bivariate relationship of the variables interrelatedness as indicated in the conceptual framework (See figure 2.2).

Data was presented using frequency and percentages tables, and pie charts.. Qualitative data from the field was transcribed, organized into various relevant themes and reported as they emerged.

3.8 Ethical Considerations

This document took care of a number of ethical issues. All the literature reviewed was well cited and credit to the writers of those documents. There is no citation not credited to the author other than those based on independent views of the author.

Confidentiality of information gotten from respondents was the priority of the researcher. No information was leaked out with or without the consent of respondents other than the generalized report on the analysis of data.

The researcher and research assistants respected and took consideration of the culture of the community (Luo). No female respondent was interviewed in private location. Any activity, word or act that was suggesting to infiltration into respondent sexual life was avoided. Traditions and taboos were well examined prior to the study in a move to establish total respect to the respondent and the community.

The sample drawn for the study was drawn using a multi-stage probability sampling techniques to make it a true representative of the actual universe. This was done to justify

the recommendations and conclusions and to make the generalization of research results applicable to the general population. Before the administration of the questionnaires and conduction of interviews, the researcher sought permission from the District Commissioner and the District Agricultural officer of Gem District. Copies of the letter of consent were distributed to all chiefs and assistant chiefs prior to the study. The benefits of the research on the Factors Affecting the Involvement of Women in Agriculture in Yala Division was made clear to the respondent to avoid the disconnect between the commitment of respondents and the research process. After the research process, a meeting was held to thank all the respondents for their contributions to the study.

CHAPTER FOUR

DATA ANALYSIS, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter presents the finding of the survey conducted on the factors influencing the involvement of women in agriculture in Yala division of Gem district. Data is presented in frequency tables and pie charts. The themes of discussion are progressively arranged according to the economic, social, technological and policy variables as indicated in the research objectives, questions and in the conceptual framework. The strength of the percentages and the frequencies constitute the strength of discussion and interpretation.

4.2 Response Return Rate

Three hundred and eighty respondents were administered to questionnaire and interviewed. The questionnaire return rate was 100%. That is 191 for male respondents and 191 for female respondents.

4.3 Demographic Characteristics of Respondents

The study sampled 382 respondents all over Yala division of Gem district. 191 male and 191 female respondents were administered to the questionnaire and interviewed. The ages of respondents are shown in the table 4.1 below.

Table 4.1: Ages of Respondents by Gender

Age Bracket	Gender of Respondents			
	Male		Female%	
	Frequency	Percentage	Frequency	Percentage
11-20	20	10.18	50	26.18
21-30	65	34.03	93	48.69
31-40	50	26.18	22	11.52
41-50	20	10.47	15	7.85
51-60	23	12.04	9	4.71
61-70	10	5.24	2	1.05
71- Above	3	1.57	0	0.00
Total	191	100.00	191	100.00

According to the findings in table 4.1, majority of male respondents lie between the ages 21-30. Likewise to the female respondents. However more women are found in this category 93(48.69%) compared to men 65(34.03%).The mean age for female is 27 years which is lower than that of males which stands at 35years (Generated using SPSS®).This indicated that the woman farmer is relatively of lower age than the male farmer. The relationship in age is that the number of farmers reduces as the age progress for both male and female respondents. However, for the female respondent, the number diminishes faster as the age advance. Age being an indicator of experience shows that women are not experienced farmers.

4.4 Economic Factors Influencing Women Involvement in Agriculture in Yala Division of Gem District.

Economic factors that were investigated and discussed in this section included; access to finance, land and involvement of women in agricultural input marketing.

4.4.1. Women Access to Finance in Yala Division

In this study respondents were asked questions regarding individuals who finance farming operations in their households. The respondents were required to state whether it is self, spouse, both and others who finance farming operations in the family household.

Table 4.2: Financier of Farming Operations within the Household by Gender of Respondents.

Financiers	Gender of Respondents			
	Male		Female	
	Frequency	Percentage	Frequency	Percentage
Self	108	56.54	95	49.74
Spouses	20	10.46	47	24.61
Both	43	33.00	33	17.28
Others	20	10.40	16	8.38
Total	191	100.00	191	100.00

According to the findings in table 4.2, it is evident that more men 108(56.54 %) than women 95(49.74 %) get involved in self financing of farming activities. It further emerged that 151(89.54%) men were involved in direct financing of farming activities as opposed to 128(67.02%) women. This indicated that most men than women have control

of resources used in financing farming activities. This access to finance is vital to the development of agriculture as indicated by Huvio (1996) who sees women access to adequate finance as a limitation to their involvement in agriculture.

From the findings, it is obvious that men have access to external finance 20(10.4%) compared to female 16(8.38 %).

Most women who were interviewed and were involved in direct financing of farming activities revealed that their scope of financing involved the purchase of seeds, fertilizer and other farm inputs in small quantities unlike men who reported their financing activities to involve both farm operations and purchase of farm inputs. The sources of household agricultural finance were reported as in the table below.

Table 4.3 Sources of Agricultural finance

Source	Male		Female%	
	Frequency	Percentage	Frequency	Percentage
Savings	100	52.36	60	31.41
Donations	23	12.04	61	31.94
Microfinance	38	19.90	27	14.14
Commercial Bank	27	14.14	2	1.05
Others	3	1.57	41	21.47
Total	191	100.00	191	100.00

Most of those interviewed talked of lack of innovation and necessary agricultural knowledge and skills among women that would be put in place to aid in loan repayment. Others indicated lack of security to be used as collateral in loan acquisition while others categorically stated that women cannot be loaned. The findings show that women have

limited access to credit finance which is in concurrent with Zehra (2000) and Huvio (1960) who found out that only 25% of women have access to formal credit. When asked about their accessibility to credit, these responses as indicated in Table 4.4 were given.

Table 4.4 Respondents Accessibility to Credit Finance

Accessibility	Gender of Respondents			
	Women		Men	
	Frequency	Percentage	Frequency	Percentage
Yes	53	72.25	140	73.30
No	138	27.75	51	26.70
Total	191	100.00	191	100.00

To the contrary men and women respondents had closely related response on women access to credit finance. Person correlation coefficient of 0.997 at 99% degree of confidence and 0.01 precision levels revealed that both men and women are in agreement regarding women finance (Generated using SPSS®).

Different sources of agricultural finance when studied revealed that 100(52.36%) of men were able to generate savings to finance farming activities compared to 60(31.41%) females. The interview revealed that the source of women finance included proceeds from sale of crops, petty business and wage labour which are somehow unreliable compared to men's sale of crops, livestock and paid employment.

Most women 61(31.94%) relied on donations from relatives and other well wishers than men who reported 24(12.04%) in this category. Therefore, it is obvious that women are not in a position to dictate the terms of donations.

About 14.14% (27) reported being able to access microfinance agricultural loans. In the same category, men reported 38(19.90%). However, the disparity in credit finance among the male and female genders is more pronounced when it comes to access to bank loans. About 27(14.14%) reported being able to acquire a bank loan with ease which is in complete contrast to 2(1.05%) women who could access the loans.

Most female respondents mentioned lack of means of repayment and security as some of the reasons that limit their access to bank loans. The findings are in line with FAO (1996) that revealed the same. Considerable percentage 41(21.47%) of women compared to 3(1.57%) men reported other sources of finance which included revolving funds and cereal banking.

When asked about the accessibility of women to credit finance, the respondents gave out the following response:

Table 4.5: Showing opinion of respondents on women’s access to credit finance.

Accessibility	Gender of Respondents					
	Men		Women		Total	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Very Accessible	20	10.47	14	7.33	34	8.90
Accessible	25	13.09	10	5.24	35	9.16
Somewhat Accessible	30	15.71	20	10.47	50	13.09
Not Accessible	116	60.73	147	76.96	263	68.85
Total	191	100.00	191	100.00	382	100.00

The response on opinion of respondents revealed that women’s access to credit finance is limited. Out of 382 respondents interviewed 263(68.85%) acknowledged that women don’t have access to credit finance. About 34(8.90%) said that women have very little access, 35(9.16%) said that they have access to credit finance and 50(13.09%) were not very sure but said that women have some access. The findings qualify the view of

Spence (2001) who revealed that the gender biases are a cause of women's inaccessibility to credit finance and should therefore be addressed.

4.4.2 Women Access to Land in Yala division

All respondent in the study concurred with the fact that land ownership is very vital in agriculture and this is in agreement with Felix (2004). The study revealed that women have very little access and rights over land. Table 4.6 below shows access and mode of ownership of land as revealed by respondents.

Table 4.6: Access and mode of land ownership by gender of respondents

Mode of Ownership	Gender of Respondents			
	Male		Female	
	Frequency	Percentage	Frequency	Percentage
Purchased	58	30.37	2	1.05
Inherited	103	53.93	14	7.33
Leased	21	10.99	13	6.81
Spouses	1	0.52	156	81.68
Others	8	4.19	6	3.14
Total	191	100.00	191	100.00

Lack of finances reported by female respondent was put forward to explain the disparity between males and females regarding accessibility to land through purchase. 58(30.37%) of men who purchased land cited social obligation to provide for the family while the 2(1.05%) women who purchased land proved to be in a stable financial state. More men than women had access to ancestral land. About 103(53.93%) men had indicated inheriting ancestral land unlike 14(7.33%) women who are lucky to inherit

land. As indicated in the table 4.6, much of land operated by women is owned by spouses and therefore, they are just co-owners 156(81.68%).

The inadequate rights by women were further revealed by registration of land under the name of male household heads as indicated by 377(98.69%). The disparity was associated to the cultural component of the community as put forward by various respondents. The figure below shows how the girl child is entitled to land.

Table 4.7: Opinion of Respondents on the Entitlement of the Girl Child to Land Inheritance

Opinion of Respondents	Number	Percentage (%)
Yes	42	11
No	340	89
Total	382	100

Most respondents including women would not welcome the fact that the girl child is entitled to a share of family land. Respondents who were against the girl child to inherit parental land said that a woman's land exists where she is married but to the contrary, women are never consulted when the husband is selling out land. Most respondents who sold out land claimed that the woman found that land and her right is limited to usage only. The disparity in land tenure between male and female farmers as revealed in this study and being in line with Rekha and Mary (2008) call for proper redress of legal and socio-cultural norms to reduce gender disparity in land ownership and use.

Table 4.8, shows the opinion of men and women on the entitlement of the girl child to land inheritance.

Table 4.8: Opinion of Respondents on the Entitlement of Girl child to land Inheritance by Gender of Respondents.

Response	Gender of Respondents					
	Men		Women		Total	
	Frequency	percentage	Frequency	percentage	Frequency	percentage
Yes	35	18.32	7	3.66	42	11
No	156	81.68	184	96.34	340	89
Total	191	100.00	191	100.00	382	100

As revealed in table 4.8, majority of respondents showed clearly that the girl child is less entitled to land inheritance. However, there were more women 184(96.34) than men 156(81.68%), who said that the girl child cannot inherit land. Qualitative data revealed that their response was prompted with the fact that they themselves did not have control over land. About 35(18.32%) men gave the opinion that the girl child should be allowed to inherit land. These respondents looked educated and well informed about gender rights. This affirms the findings of Akhter (1995) and his value on education and FAO (1999) gender mainstreaming strategy to knock off discriminatory law that prohibits access of women to land.

4.4.3 Women and Agricultural Farm Input Acquisition and Marketing in Yala Division

Respondents explained various sources of their farm input to include the following; Agro-dealer stores, National Cereal and Produce Board, and Millennium Village Project. The table 4.8 shows how respondents source their farm input.

Table 4.9 Sources of Farm Input by Gender of Respondents

Sources	Gender of Respondents			
	Male		Female	
	Frequency	Percentage	Frequency	Percentage
NCPB	96	50.26	43	22.51
Agro vet	70	36.65	92	48.17
NGO	21	10.99	38	19.90
No Source	4	2.09	18	9.42
Total	191	100.00	191	100.00

From table 4.9, it is evident that more men 96(50.26%) than women 43(22.51%) do their purchases of farm input at the National Cereals and Produce Board (NCPB) while 70(36.65%) men and 92(48.17%) women from the Agro vets. From the findings it is obvious that women prefer to get their input from agro-dealer shops than the government owned NCPB. However, most women interview reported long distance and large quantity measures of fertilizer as deterrent factors that make them prefer agro dealer

shops to NCPB. Women therefore are likely to miss government subsidies given through the NCPB.

The preference of choice of source of farm input between men and women has a positive correlation of 0.577 at 95% degree of confidence (SPSS® version 11.50). Economic factors (lack of enough capital) and domestic chores (too much time in dealing with household task) are the main reasons why women prefer to take farm input from the nearest agro dealer shop. This is why a perfect positive correlation could not be attained between women and male as regards farm inputs sources.

On the side of Agro-dealer shop ownership, it was revealed that more men than women own and work in agro dealer shop.

Table 4.10 Ownership of Agro-Dealer Stores in Yala division as reported by respondents

Ownership of Agro-dealer stores	Number reporting	%
Male	162	42.41
Government (NCPB)	139	36.69
NGO (MVP)	59	15.45
Female	22	5.75
Total	382	100.00

Table 4.10 shows that more men than women own agro-dealer shops this confirms the findings by CNFA & AGMARK (2005) that revealed that out of 100 agro dealer stores in Greater Siaya district, only 22 are owned by women. The results show that the agro-input business is a domain of the male gender. Many respondents

162(42.41%) reported to source farm input from male owned stores. The rest of the stores are government owned 139(36.39%) and NGO (MVP) owned 59(15.45%). The number reported to work in these stores is predominantly male. No respondent reported a number beyond 2 of women who work in the agro-dealer stores. Not even the government owned NCPB had women workers.

The table below show the interest of respondents on engagement in farm input business.

Table 4.11 Interest of Respondents on Engagement in Farm Input Business

Interested	Gender of Respondents			
	Male		Female	
	Frequency	Percentage	Frequency	Percentage
Yes	158	82.72	79	41.36
No	33	17.28	112	58.64
Total	191	100.00	191	100.00

The findings in table 4.11 showed that 158(82.72%) men expressed interest to engage in agro dealer business compared to 79(41.36%) women. A greater number of women 112(58.64%) expressed total lack of interest in that business. When the interest of men was correlated against that of women, a perfect negative correlation of -1.000 was generated using SPSS® (Persons correlation at 99% degree of confidence). When asked about the reasons for the lack of interest the following responses were generated.

Table 4.12 Showing Reasons For Lack of Interest in Agro dealer Business by Women

Reasons (s)	Number	%
Lack of capital	73	64.29
Lack of education	19	16.90
Domestic chores	16	14.29
Don't know	5	4.46
Total	112	100.00

Lack of capital featured prominently as a reason that hinders aspiring female agro dealers. 73(64.29%) out of the 112(100%) who expressed lack of interest pointed to lack of capital. Lack of relevant education 19(16.96%) and engagement in domestic chores 16(14.29 %) were also stated as reasons that held back aspiring female entrepreneurs. The non involvement of women in Agricultural input marketing revealed in this study is in agreement with Musalia (2005) in a study conducted in eleven Kenyan districts that confirmed that women cannot draw significant gains from agro-input marketing due to non-involvement.

4.5 Socio-Cultural Factors Influencing Involvement of Women in Agriculture in Yala Division.

The socio-cultural factors that emerged to influence women's involvement in agriculture in Yala division included; lack of spouses' support, education and HIV/AIDS.

4.5.1 Spouses Support Influence on Women's Involvement in Agriculture in Yala Division

During the survey, it emerged that women gave men adequate support in farming operations. However, to the contrary, women were dissatisfied with the support they received from men as indicated in the table below;

Table 4.13 Spouses Support in Farming Activities

Existence of Support	Gender of Respondents			
	Men		Women	
	Frequency	Percentage	Frequency	Percentage
Yes	170	89.01	84	43.98
No	21	10.99	107	56.02
Total	191	100.00	191	100.00

Evident in table 4.13 above, 170(89.01%) men reported receiving adequate support from their spouses with 21(10.99 %) men saying that they did not receive adequate support from their wives. However, to the contrary, only 84(43.98%) of women's acknowledge that their spouses gave them support with considerable number of 107(56.02%) reporting lack of spouses' support.

The relationship between men support to women and women support to men is a perfect negative correlation with a co-efficient of -1.000 at 0.01 precision levels and 99.00% degree of confidence (SPSS®). It is therefore acknowledged by women that men do not give enough support whereas they receive adequate support from women.

Most women respondents reported to be involved with domestic chores when out of farming activities whereas on the other hand, men got involved in wage labour,

business and paid employment. Women reported to be over engaged with such domestic chores as cooking, fetching water, fetching firewood and selling farm produce. Such domestic chores and sex stereotyping of roles obstruct women from getting production resources (Akhter, 1995). Support from men was however notable in taking care of children and taking them to school. Support here was basically financial (like paying school fees and providing for medical care).

Male respondent's opinion on where women require relief is noted in the table 4.13 below;

Table 4.14 Men's opinion on where women need relief

Activity	Number of Respondents	Percentage
Domestic Work	51	26.70
Farm Work	124	64.92
Wage Labour	16	8.38
Total	191	100.00

Majority 124(64.92%) men acknowledged that women need relief in farm work and 51(26.7%) in domestic work. This shows that 176(91.62%) are convinced that women are overwhelmed with both farm work and domestic chores. Despite that, men reported that they would only help their spouse when they are sick or when completely overwhelmed with work. To the majority, a good woman is that who works hard in the farm.

Most women reported over drinking on the side of men as a factor which deprived them of time to work in the farm with the worst scenario reported in Nyamboga (Yala Township) Uyoga (Central Gem) and Dhene (East Gem) where men spend the whole day in drinking joints. Over drinking of men deprive women of vital support in farm work. Domestic chores as found by FAO (1995) and lack of spousal support have negative effect on women productivity in agriculture.

4.5.2 Influence of Education on Involvement of Women in Agriculture in Yala

Division

Education being an important factor in the involvement of women in agriculture was revealed by Laith (2007). The study revealed the following levels of Educational levels of respondent.

Table 4.15 Respondents Levels of Education

Educational level	Gender of Respondents			
	Male		Female	
	Frequency	Percentage	Frequency	Percentage
No Formal Education	12	6.28	22	11.50
Pre-primary	0	0.00	0	0.00
Primary	82	42.93	140	73.30
Secondary	80	41.88	25	13.10
College	12	6.21	3	1.57
University	5	2.62	1	0.52
Total	191	100.00	191	100.00

The indication from table 4.15 above is that a greater percentage of women farmers either have no formal or have basic (primary) education. About 140(73.30%) women have primary education compared to 82(42.93%) men. This is evidence that if the respondent received agricultural education, then the women simply received the most basic. About 80(41.88%) male respondents reported to have received secondary school education unlike 25(13.1%) women. This shows that male farmers are more educated than the female. At the apex, 17(8.9%) males have received post secondary school education compared to 4(2.09%) women with the ration of male to female who have received university education being 5:1. The disparity in education between men and women has shown that lack of it affects women participation in agriculture. This is in agreement with Laith (2007) who said that the level of education is too a determinant factor to the intensity of involvement of women in agriculture.

The table below shows accessibility to agricultural education as indicated by those respondents who got formal education.

Table 4.16 Access to Agricultural Education By gender of Respondents

Educational level	Gender of Respondents			
	Male		Female	
	Frequency	Percentage	Frequency	Percentage
Yes	173	96.65	169	97.04
No	6	3.35	5	2.96
Total	179	100.00	174	100.00

Table 4.16 shows that both male and female respondents had almost equal access to agricultural education while in school 173(96.65%) of 179 men and 169(97.04%) of 174 women. However, the transition rate of women to higher levels of education is lower than for men as indicated previously in table 4.15.

The transition rate to secondary level from primary level is 17 %(29 out of 169) for women compared to 54% (97 out of 179) for men with the assumption that those in college must have passed through secondary school. The transition rate from secondary school to colleges and universities is 21.25% (17 out of 97) for men and 16 %(4 of 29) women. At the Apex 5 out of 97 (6.25%) men attained university education as opposed to 4% (one woman) The 6.25% men and 4% women represents 2.62% and 0.52% men and women respectively of the total population (Table 4.15) Therefore, it is obvious that the female farmer is lowly educated compared to their male counterparts.

Another factor that influences women involvement in education is their participation in the dispensation of agricultural knowledge through teaching. Table 4.17 below shows the gender of agriculture teachers as reported by respondents.

Table 4.17 Gender of Agriculture Teacher as Reported by Respondents

Gender of Teacher	Number	Percentage (%)
Male	290	76
Female	92	24
Total	382	100.00

The table 4.17 shows that there are more male agriculture teachers than female which defines sector as a domain of the male. The study also sorts to find out the

perception of different respondents regarding the rating of their agriculture teachers in school. The Likert Type Scale incorporated in table 4.16 shows their ratings.

Table 4.18 Showing the Rating of Agriculture Teachers by Gender of Respondents

Rating	Gender of Respondents			
	Male		Female	
	Frequency	Percentage	Frequency	Percentage
Below Average	2	1.16	5	3.05
Average	17	9.83	26	15.85
Good	97	56.07	128	78.05
Very good	35	20.23	4	2.44
Excellent	23	13.29	1	0.61
Total	173	100.00	164	100.00

Most female respondents who rated their teachers as Good had primary school education. Likewise to the male respondents. When interviewed, with reservations, they claimed that the teachers were good but due to financial problems they could not perform better. Others honestly said that the teachers were good but they were incapable to perform.

However, what was significant was the variation of numbers of respondents who rated their teachers highly. About 35(20.23%) and 23(13.29%) men rated their teachers Very Good and Excellent respectively unlike 4(2.44%) and 1(0.6%) women who rated their teachers as Very Good and Excellent respectively. Most of the respondents who rated their agriculture teachers very highly were of Secondary School and above and attributed their agricultural knowledge to their teachers. It was also notable that those who had female agriculture teachers did not attribute success to them.

4.5.3 HIV/AIDS and its Influence on Women Involvement in Agriculture in Yala Division

This study realized that HIV/AIDS claimed many people whose livelihood depended on agriculture. This is in agreement with Kormawa (2009) who stated that HIV/AIDS has affected the agrarian community in Sub-Saharan Africa. The response of people on whether HIV/AIDS affect agriculture is shown in table 4.17 below.

Table 4.19 Effects of HIV/AIDS on Agriculture

Effect of HIV/AIDS to Agriculture	Number	%
Yes	244	63.87
No	138	36.13
Total	382	100.00

Most respondents 244(63.37%) acknowledge that HIV/AIDS has a negative effect on agriculture. It incapacitates the infected farmers as indicated by these respondents. 138(36.13%) said that HIV/AIDS does not affect farming. Most of these respondents who said “No” argued that a farmer is a very busy person and cannot indulge in risky behaviour that would increases vulnerability to HIV/AIDS.

As much as most respondents acknowledged the effect of AIDS 331(86.65%) refused to admit that the pandemic affected their immediate family. The table below shows responses on effect of HIV/AIDS at the family level.

Table 4.20 Responses on Effects of HIV/AIDS at the Family Level

Response	Immediate Family		Extended Family	
	Frequency	Percentage	Frequency	Percentage
Yes	73	19.11	244	63.87
No	309	80.11	138	36.13
Total	382	100.00	382	100.00

The response on effect of HIV/AIDS on immediate family level and extended family levels were negatively correlated. It was a perfect negative correlation with a coefficient of -1.00. This shows that HIV/AIDS is still stigmatized and its effect can not be admitted at the immediate family level.

Respondents also gave out varied views on the effect of HIV/AIDS on women involvement in agriculture. Some views included the following: HIV/AIDS incapacitates the woman farmer. When infected, the women cannot work effectively; the woman farmer has to sacrifice personal requirement as the family resources are diverted towards taking care of the sick; women are the majority who take care of the infected thus taking too much time nursing the sick and ignoring farming activities; with the death of spouse too much responsibility is left to the woman farmer thus making it difficult to maximize her agricultural production and HIV/AIDS has taken toll on women farmers. Many have lost their lives.

4.6 Technological Factors That Influence the Involvement of Women in Yala Division

The technological factors that were found to influence women's involvement in agriculture included; accessibility to agricultural extension, level of farm technology and agricultural research.

4.6.1 Women Accessibility to Agriculture extension

Agriculture extension is very important in influencing productivity of farmers. Damisa (2007) revealed that farmers who have contact with extension workers will tend to have better access to information technology which raised their level of participation in agriculture productivity. In that line the study established levels of women's accessibility to agricultural extension as shown in the table below.

Table 4.21 Respondents Accessibility to Agriculture Extension

Accessibility	Frequency	Percentage
Not Accessible	198	51.83
Somewhat Accessible	100	26.18
Accessible	60	15.71
Very accessible	24	6.28
Total	382	100.00

Respondent who chose the "Not Accessible" option claimed to have never been visited with any extension officers at all. Those who responded to "somewhat Accessible" had seen extension officers once or twice in their lifetime. The 198(51.83%) and 100(26.18%) respondents who chose the "Not Accessible and somewhat accessible

options in total gives a figure of 298(78.01%) of inadequate accessibility of extension services to respondents. This shows that the problem of inaccessibility to extension services is a societal problem with women at the core of it.

However when asked about the rating of extension officer, all respondent answered to it even those who earlier reported lack of access. When interviewed most respondents reported total dissatisfaction with extension services. The table below showed women rating of extension officers;

Table 4.22 Showing Women’s Rating of Agricultural Extension Officers.

Rating	Animal Service	Percentage	Crop Service	Percentage
Below Average	173	90.56	5	2.62
Average	11	5.76	57	29.84
Good	7	3.66	109	57.07
Very Good	0	0.00	17	8.9
Excellent	0	0.00	3	1.57
Total	191	100.00	191	100

The women’s rating shows that the majority 173(90.56%) rated extension officers on animal service Below Average but only 5(2.62%) rated them the same way in crop services. Only 7(3.66%) rated extension officers as good in animal services as opposed to a massive 109(57.7%) who rated them the same way in crop production. There was no respondent who rated extension officers very good or excellent in animal service. In general, 129(67.54%) respondents rated the officers positively in crop services contrary

to 173(90.56%) who gave negative rating in animal services. The ratings were correlated using SPSS[®], Pearson's correlation coefficient of -0.37 significant at 0.54 precision levels was found meaning that the work of these officers in animal service to women was not satisfactory.

In depth interview revealed that extension officers were busy involved in either private practice or meat inspection which they held dearly. Another reason for poor rating of veterinary officers by women is the over dominance animal husbandry by men and that veterinary services are important to men but not women. The highest number of female extension officers reported to have visited various respondents is a simple 2(Two) as opposed to the high number of men. Most respondents concurred that the majority of extension officers are male. As it had been noted, majority of male extension officer may not speak to, or get closer to women in sub-Saharan Africa (FAO, 2008; World Bank, 2009) and therefore the study has revealed and confirmed this notion.

4.6.2 Women Accessibility to Farm Technology in Yala Division

The table below shows the nature of tasks performed by men and women in farms in Yala Division of Gem District.

Table 4.23 Performers Various Tasks as Performed in Crop Management by Different Gender Groups in Yala Division.

Task	Male	Female	Both	Total
Clearance of farms	250	49	83	382
Ploughing	73	140	169	382
Planting	-	-	382	382
Weeding	69	173	140	382
Fertilizer application	-	-	382	382
Watering	84	148	150	382
Pruning	302	32	48	382
Staking	299	47	36	382
Harvesting	-	-	382	382
Storage and Preservation	51	227	104	382
Transportation	27	295	60	382
Selling	44	289	49	382
Planning	191	68	123	382

According to the table above, a majority of women perform such tasks as ploughing, weeding, fertilizer application and storage of farm produce. A majority perform these tasks singly or with assistance from their spouses. In the same tasks, fewer men perform those tasks alone. Women interviewed revealed that they were compelled with family responsibility to feed their children to perform those tasks.

In tasks such as clearance of farm pruning and staking, majority of performers were men. Most respondents said that men clear farms since the task completion is always needed on time before ploughing. For pruning and staking most respondents said that these tasks are associated with such crop like bananas and tomatoes which men grow for cash. A few women who engaged in kitchen gardening perform those tasks. In such

tasks like planting, fertilizer application and harvesting are performed by both men and women. Men interviewed said that they perform the tasks since they are time bound. On the other hand women said that men are forced to give total support and forgo their drinking sprees since lack of support would mean food insecurity within the household.

In Animal management, both men and women show participation as indicated in table below;

Table 4.24 Showing Performance of Various Tasks in Animal Management by Different Gender Groups in Yala Division.

Task	Male	Female	Both	Total
Small animal (s) management	49	233	100	382
Looking for feeds	280	24	28	382
Herding	294	40	48	382
Milking	126	125	131	382
Management of cattle shed	368	5	9	382
Sale of animals	302	30	50	382
Sale of animal products	28	280	74	382
Tracking	380	2	0	382
Sick animals management	129	130	123	382

From the table 4.24, Animal Management is predominantly a domain of the male. Looking for feeds (280), herding (294) cattle shed management (368); sale of animals (302) and Tracking (380) are all male related task as indicated in the table above. Women are concerned with such simple tasks like small animal management (233) and sale of animal product (280). Women therefore do not perform profitable tasks associated with commercial agriculture.

According to the European Policy Research Center (2001), women use lower level technology because of access, lack of skills, lack of opportunity and cost. This study revealed the following findings as presented in the table below to the same effect; The question posed was, “who use the following farm implements and/or tools?”

Table 4.25 Use of Farm Tools and Implements by Different Gender Groups in Yala Division.

Tasks	Male	Female	Both	Total
Tractor	361	11	10	382
Sprayers	204	95	83	382
Planters			382	382
Hoes		362	20	382
Pangas	300	12	70	382
Jembes			382	382
Ox-drawn plough	380	2	0	382
Watering cans	84	148	150	382

Men were reported to use tractors (361), pangas (300) sprayers (204) and the ox-draw plough (380). Respondent said that those tools were related to male performed task that required strength and technical know-how. Women reported extensive use of the hoes (362) which they associated with their routine weeding task. The jembes and planting tools were reported to be used by both male and female respondents. Most women reported lack of access to those tools and they attributed it to inadequate finance and lack of technical knowledge. However those who reported access attributed it to

spouse's support. Complex implements such as tractor and ox-drawn plough were thought of to be manly and this is in concurrence to studies done in Zambia and Burkina Faso by IFAD (1999) that established that only 1% of women owned such farm implements.

FAO report (1998) revealed that much of farm input used in Third World Countries went to men dominated plots. The study sort to verify this claim by confirming if the respondents had used vital farm in put. The results are presented in the percentage table 4.24 indicated below.

Table 4.26 Access and Use of Farm Input by Gender of Respondents

Input	Male				Female			
	Yes		No		Yes		No	
	%	Number	%	Number	%	Number	%	Number
Organic manure	100	191	0	0	100	191	0	0
Inorganic Manure	100	191	0	0	100	191	0	0
Herbicides	40	76	60	115	10	19	90	172
Pesticides	80	153	20	38	40	76	60	115
Rodent Killer	100	191	0	0	60	115	40	76
Accarricides	90	172	10	19	40	76	60	115
Termite Killer	88	168	12	23	9	17	91	174

Both men and women reported extensive use of both organic and inorganic manure. But when it came to the consumption of farm chemicals, women recorded lower figures than men. 76(40%) men reported to have used herbicides compared to 19(10%) women. The use of pesticides was more prominent for men, 153(80%) compared to 76(40%) for women. All men reported to have used the rodent killer 191(100%) men

while women who reported the use stood at 115(60%). The women who reported to have used the rodent killers used them to kill rodents within the domestic confines whereas men used these poisons to kill all farm rodents. About 172(90%) and 168(88%) men reported to have used accaricides and termite killers respectively as opposed to 76(40%) and 17(9%) for women respectively. Accaricides and Termite killers were related to male performed related tasks such as cattle rearing and construction respectively. The opinion on women use of poisonous farm chemical was sort by asking if women were allowed to use farm chemicals.

Most respondent said that women are not allowed to use the specified farm chemical. Some of the reasons put forward that barred women from using the chemicals included: Women are high tempered and would use them to commit suicide after minor domestic misunderstanding; women are careless, can mishandle and poison the family with these chemicals; women don't know how to use these chemicals- They cannot read the label due to their low literacy levels; most women tasks are not related to the use of the chemicals and they lack finances to purchase the farm chemicals.

Women who reported to have extensively used the chemicals showed great enthusiasm in their involvement in agriculture and opposed the gender stereotype associated with male superiority in use of farm chemicals.

Most respondents admitted that there were few organizations that target women with free farm input. The Millennium Village Project (MVP) was reported to have provided farmers with free fertilizer in the last two years but ever since stopped. However, the free farm input was not gender specific in its target.

4.6.3 Influence of Agricultural Research on Women in Yala Division of Gem District.

Rekha and Mary (2008) stated that crops predominantly grown by women are not on top priority of agricultural research in Third World Countries. The study was set to confirm this view and put an elementary question to find out whether the respondents were aware of agricultural research or not.

Table 4.27 Awareness about Agricultural Research by Gender of Respondents.

Awareness	Frequency	Gender of Respondents		
		Men		Women
		Percentage	Frequency	Percentage
Yes	109	57.06	84	43.98
No	82	42.94	197	56.02
Total	191	100	191	100

From SPSS[®], the correlation coefficient between men’s and women’s responses is -1.000. The deduction shows that the number of men who are aware of agricultural research 109(57.06%) is almost similar to corresponding number of women who are not aware of agricultural research and vice versa. When interviewed most women did not give a clear understanding of agricultural research. This is an indication that the benefits of agricultural research have not been available to women. To most men, the understanding of agricultural research was accurate and admitted that it has been a domain of men. However, all respondents who were aware of agricultural research were disappointed that research activities are confined to research stations but did not involve the farmer.

4.7 Gender Mainstreaming in Agricultural Sector in Yala Division of Gem District

Regarding policies that promote gender equality in the agricultural sector, most respondents reported that they are not there. A few respondents however, reported that the Millennium Villages Project target women through registration of households. But intervention strategy for alleviation of poverty among women remains at the level of registration only.

In the extension service as reported earlier there was no policy reported to regulate the number of women.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter contains summary of findings, conclusions and contribution of the study to knowledge, recommendations and suggestions for further research.

5.2 Summary of Findings

The study sort to find out factors influencing the involvement of women in agriculture in Yala division of Gem district. The study found that the women farmers were much younger than the male farmers with 143(76.89%) being of age 30 years or below. Therefore this shows that the experience of the female farmer could not be compared to that of the male farmer whose corresponding number in the same category was 85(44.21%).

The study established that, women had less access to credit finance which lied at 29(15.19%) as opposed to 65(34.04%) men. The woman farmer rights to land ownership were very unclear in the area of study. They are not entitled to land inheritance from their parents and did not have equal say to spouse's land which the majority (156) 81.68% reported access to.

It also emerged that women were not adequately involved in agricultural or farm input marketing. Only 22(5.76%) of agro dealer owners were women.

Education was another factor that was established to affect women's involvement in agriculture. Women are lowly educated with 22(11.5%) and 140(73.30%) with no formal and with primary education respectively. Women agriculture teachers who taught various respondents were reported to be 24.08% (92) and were lowly rated compared to

75.92% male teachers who were highly rated. It also emerged that women were overworked in farms and received no returns. Domestic chores and wage labour were found to hinder women's performance in farms. About 244(63.87%) of respondents were in agreement that HIV/AIDS affect agriculture and more specifically women's involvement in agriculture.

About 84(21.99%) women reported real access to agricultural extension compared to 298(78.01%) that did not have access. The services as rated by women were not satisfactory. There were fewer women agricultural extension officers than males.

A majority of women 107(56.02%) were not aware of agricultural research and the 84(43.98%) of women who were aware of agricultural research admitted that it was a male domain. The study also revealed that women had access to lower level technology and farm input that were meant to enhance subsistence farming. Lack of access to competitive agricultural technology also affected women involvement in agriculture.

The study revealed that there was no strategy or gender policy crafted to promote women's involvement in agriculture.

5.3 Conclusions

The study confirmed that economic factors that do influence women's involvement in agriculture. Inadequate personal savings and inaccessibility to credit finance (micro-finance and bank loans) were some of the economic factors that hindered women's involvement in agriculture in Yala division of Gem district.

With lack of finances, women cannot finance farm operations, purchase land or farm input. Women access to land is another economic factor that hinders their effective

participation in agriculture. Women and girls do not have rights over land and therefore cannot use it as collateral to acquire institutional loans. Women are not engaged in agricultural input marketing. More men than women own the agro-dealer stores. Lack of finance, knowledge and interest are the reasons for the lack of involvement in this business.

Lower levels of education by women farmers hinder their active involvement. Elementary levels of education that they possess cannot make them adopt new technology and handle complex agricultural challenges. In school there are fewer female teachers who are rated lowly and did not act as real inspiration to girls to take agriculture as a subject.

Extension services too are not targeted towards women. Extension officers do not do their visits as they are supposed to. Lack of these services means low productivity on the side of women. Agricultural research to women means nothing. They are not involved in the research process at any level and the findings of the research process had not been made accessible to them. Those involved in the research process are predominantly male. Therefore, non involvement in research affects women farmers since new innovations eludes them. Lack of access to appropriate farm technology also hinders women productivity. Women tend to use lower level technology associated with simple task and hence they are faced with low productivity due to utilization of low level technology. Male dominance of certain farm practices has also affected women involvement in certain farming activities. Farm inputs like various chemicals are only used by men. Lack of use of pesticides, accanicides and other farm chemicals means that they don't engage in serious commercial crop production and animal husbandry.

Social and cultural factors that down grade women farmers to play subordinate roles really affect women involvement in agriculture. Numerous domestic chores and lack of spouses support makes the woman farmer to be overworked and thus lowering her productivity. HIV/AIDS impairs women capability to work in farms when infected. Resources which would however been used to finance farm operation are directed to taking care of the sick. Death of spouses makes female farmers to bear too much responsibility and thus would not participate fully in agriculture. Women farmers are not spared. The death of a woman farmer means that agricultural food production has been punctured.

Lack of sound gender sensitive policies has made it very difficult for women to rise and attain equity in the utilization of agricultural sector resources and opportunities. Policies that favour men have continued to render the woman farmer useless and incapable of forging ahead.

5.4 Recommendations

This section gives recommendations by the respondent and the researcher on how to improve the status of the woman farmer.

5.4.1 Improving Women Finance, Accessed to Land and Promotion of Agro-Input Business

Agricultural operations by women are finance by either self or by spouse. In this instances, the source of self finances include personal savings and donation from relatives. Women should therefore break from this kind of finance to more vibrant type of finance like credit and other types of resource mobilization. Women should form groups where they can mobilize their savings and bargain for better terms with any financial

institution. The revolving funds that women generate from personal savings and utilized for non-productive tasks can be pulled together to act as security to borrow from commercial banks. The Cereal Banking Strategy introduced by the Millennium Villages Project proved to be a very good method to finance and refine farming operations. Women should take their produce to a common silo and continue withdrawing only the amount that is enough to serve their domestic needs. When it comes to buying farm input, the management of the Cereal Bank should sell out farm produce when prices are favourable and purchase fertilizer in bulk for the members. Given that gender disparities, governmental, non governmental organizations and community based organization should target specifically women in their intervention measures. Government subsidies of farm input should be directed to women groups.

The government and other civil society should advocate for enforcement of laws against the discrimination of the girl child when it comes to land inheritance. This later makes the woman farmer to lack access to the vital resource (Land). Both men and women should have equal rights to land ownership. Legislation should be enacted and enforced to make husband and wives to have mandatory jointly registered to land they operate. Women should also utilize other modes of land ownership (like leasehold tenure) and take advantage of to increase production. Women should be incorporated into agricultural input marketing. The government and non-governmental organizations such as Agricultural Market Development Trust (AGMARK) should recruit and train many women entrepreneurs to participate in farm input marketing. Women should be encourages to favourably compete men in this area. Loans and grants from Micro-finance should be made accessible with better and attractive terms to women agro dealers.

Agricultural education should be made compulsory in girl's schools. Since most girls end up as ill educated, trained and equips farmers, agriculture should be made compulsory to girls in order to adequately equip them to dominate and monopolize this field.

5.4.2 Strengthening Socio-cultural Support to Women in Agriculture

The Luo culture (culture of most respondents) should be gender sensitive. The government and gender based non governmental organization and other organizations working in the area should mobilize and sensitize the community against the rigid practice of subordinating the woman farmer to manual and non profitable farm practices. The community should be educated to understand the benefits of effectively and fairly involving the women in agriculture.

In public Barazas (community meetings) men should be taught on how to help in farm work. Proper education and sensitization of men should be done to make them accept lending a hand in domestic work so that the women farmer is not overworked. Since it emerged that HIV/AIDS is stigmatized in Yala division, nobody would not wish to accept that he/she is infected or affected. The community should find means of handling it. The effect of HIV/AIDS on women involvement in agriculture has been clearly noted in this study. Women farmers should be encouraged to be counseled tested and seek support. When the others are also counseled tested and receive support, the time taken by women farmers to take care of the sick would considerably reduce thus maximizing agricultural production activities. Dealing with inequality in the field of agriculture should be the government's top priority and should be done at the national policy level. The government should employ affirmative action in the employment of

agriculture teachers, extension officers and researchers to make sure that most women are employed in agricultural sector to spur up women participation.

5.4.3 Improving Women Accessed to Improved Farm Technology, Extension Services and Utilization of Research Findings.

Agricultural extension services should be intensified. The government and agricultural based non governmental organizations should employ more agricultural extension officers. The frequency of visits should also be increased with well elaborate monitoring and evaluation programmes of checking the activities of extension officers. The gender imbalance among the agricultural extension workers should be addressed. Equal recruitment and employment opportunity in the agricultural sector should be adopted. Women should be encouraged to apply for courses and positions in the extension service as it is done in other sectors and in the international non governmental organizations. The opened and increased opportunity will increase participation of women in agriculture by providing services required to transform the sector. The Knowledge of existence of agricultural research should be made available to women. New innovations and other findings from agricultural research should be made accessible to women farmers. New variety of crops and upgraded animals species should not be a myth to women farmers who need to benefit from them. Involvement of women in agricultural research should not be overlooked. Women should be involved as researchers and those women farmers in the village should be incorporated during try outs of new crop variety and animal species.

5.4.4 Mainstreaming Gender in Agriculture

The disparity between the male and female gender as regarding involvement of women in agriculture will continue to be. Gender mainstreaming should start with the central government going down to the village in a move to eliminate all form of discrimination. A massive gender mainstreaming exercise should be put in place by the government. The government in Yala division and elsewhere should embark on an exercise of eliminating all factors that would course inequality between female and male farmers. Appropriate education programmes for the girl child, accessibility to new technology, access to credit finance and farm management training should all be put in place to the female farmers to raise their status to that of male farmers.

5.5 Contribution to New Knowledge

This study has contributed a lot to gender study as a body of knowledge. It has shown light on the dimension of the engendered agriculture in Yala division. This explains the variation that exists in agriculture here and elsewhere and supplements the already existing literature and provide for the initial steps for intervention measures. This study explains the reasons behind lack of access, control and ownership of agriculture on the side of the woman farmer. The contribution to new knowledge can be noted in view of the study objectives.

Table 5.1 Showing Contributions of the Study to body of Knowledge

Objective (s)	Contribution to knowledge
To determine the extent to which economic factors influence the involvement of women in agriculture	The study shows that women do not have access to credit finance and rely on informal financing systems. This knowledge is very vital and it is in concurrence with what is happening in other Third World Countries and in contradiction to what exists in the Developed World.
To establish the extent to which socio-cultural factors influence the involvement of women in agriculture	The study contributes to new knowledge by showing how the Luo culture makes it very difficult for the woman farmer to gain equality with the male counter.
To assess the level of at which technological factors influence the involvement of women in agriculture	The study explained the state of technology that is accessible to the woman farmer and how it affects her level of production compared to the male farmer.
To establish the establish the extent to which policies influence the involvement of women in agriculture	The study exposed that the government policies promoting equality in agriculture only exist at advocacy level but not at implementation level.

5.6 Recommendations for Further Research

During the study, the following areas appeared wanting and needed further research.

- 1) Factors influencing women's adoption of new farm input in Yala division.
- 2) A correlation study of women involvement in agricultural extension and their involvement in farming in Yala
- 3) Factors limiting women acquisition of credit finance in Yala Division.
- 4) Short-coming of gender mainstreaming- study into government policies in relation to culture in Yala Division.

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APPENDIX I
THE TRANSMITTAL LETTER

UNIVERSITY OF NAIROBI
P.O. BOX 30197-00100 GPO
NAIROBI, KENYA

27/03/2009

TO,
MR/MRS/ MISS-----

Dear Sir/Madam,

RE: FACTORS AFFECTING THE INVOLVEMENT OF WOMEN IN
AGRICULTURE

I am currently a student pursuing a Masters of Arts Degree in Project Planning and Management at the University of Nairobi. I am carrying out the above study in your sub-location as part of the requirements for the fulfillment of Masters of Arts Degree.

The purpose of this letter is to humbly request you to participate in the study by completing the attached questionnaires

All the information collected will be treated as strictly confidential.

Your cooperation and support in this study will be highly appreciated.

Yours faithfully,

DANIEL OMONDI OKELLO .

APPENDIX II : SAMPLE QUESTIONNAIRE

SECTION A

UNIVERSITY OF NAIROBI	
SCHOOL OF CONTINUING AND DISTANCE LEARNING	
OFFICE USE ONLY – SKIP TO DATE OF INTERVIEW <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <u>1ST CHECK</u> <u>2ND CHECK</u> </div> <div style="text-align: center;"> <u>1ST CHECK DATE</u> <u>2ND CHECK DATE</u> </div> </div>	OFFICIAL USE ONLY DATA ENTRY : <u>DATA ENTRY DATE</u>
BEGIN SURVEY HERE	
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="border: 1px solid black; padding: 2px; margin-right: 10px;">DATE OF INTERVIEW</div> <div style="margin-right: 10px;">DAY</div> <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; width: 20px; height: 20px; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; margin-right: 5px;"></div> <div style="margin: 0 5px;">MONTH</div> </div> <div style="margin-right: 10px;">YEAR</div> <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; width: 20px; height: 20px; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div> </div>	
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">STARTING TIME</div> <div style="width: 45%;">ENDING TIME</div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="border: 1px solid black; width: 45%; height: 20px;"></div> <div style="border: 1px solid black; width: 45%; height: 20px;"></div> </div>	
DIVISION ----- LOCATION----- SUB-LOCATION----- VILLAGE -----	RELATION TO HOUSEHOLD HEAD HEAD -----1 SPOUSE -----2 PARENT-----3 WIFE 2 -----4 WIFE 3-----5 GRANDMOTHER-----6 GRAND FATHER-----7 OTHER RELATIVES-----8 OTHER NON RELATIVES-----9
Sex of respondent	MALE <input type="checkbox"/> FEMALE <input type="checkbox"/>
In what month and year were you born?	MONTH ----- YEAR-----
The following survey will ask about women involvement in agriculture. Are you responding for yourself or for spouse.	Self ----- Spouse----- Other (s) specify -----

SECTION B

A. Who finances farming operations?

Self

Spouse

Any other (specify) -----

B. What are the source (s) of family finance (please tick where appropriate).

	Source	(√)
1.	Commercial Banks	
2.	Micro – finance	
3.	Donation (s)	
	Family	
	Friends	
	NGO (s)	
4.	Savings	
	Any other (specify)	

C. If respondents answered question B4

	Source of saving	Male (Husband)	Female (wife)
1.	Employment		
2.	Sale of animal		
3.	Sale of crops		
4.	Sale of land		
5.	Sale of household goods		
6. Any other specify -----			

1. (a) Do you have access to bank/loan? Yes No

(b) If yes, which bank?

c) How favourable are the terms?

d) Would you wish to continue with the bank?

e) According to your opinion, do women have access to financial services?

f) What is your recommendation to women's financial state?

1. Mode of land ownership (Tick where appropriate)

No.	Mode of ownership	(√)
1.	Purchased	
2.	Inherited	
3.	Leased	
4.	Spouses	
5.	Any other (specify)-----	

2. (a) Do you have any certificate that shows land ownership?

Yes No

(b) If yes, fill in the opinion box

- i) Registered under the male household head
- ii) Registered under the female household
- iii) Registered under the names of both husband and wife
- iv) Communal ownership
- v) Any other (specify)

3. What is the size of your farm?

- Less than one acre
- One acre
- More than one acre

A3

1. Who perform the following tasks?

CROP MANAGEMENT

No.	Tasks	Male	Female	Both
1.	Clearance of farms			
2.	Ploughing			
3.	Planting			
4.	Weeding			
5.	Fertilizer application			
6.	Watering			
7.	Pruning			
8.	Staking			
9.	Harvesting			
10.	Storage & preservation			
11.	Transportation			
12.	Selling			
13.	Planning			

ANIMAL MANAGEMENT

No.	Tasks	Male	Female	Both
1.	Small animal (s) management			
2.	Looking for feeds			
3.	Herding			
4.	Milking			
5.	Management of cattle shed			
6.	Sale of animals			
7.	Sale of animal products			
8.	Tracking			
9.	Sick animals management			

2. Is your partner giving enough support towards farm work?

Yes

No

3. According to your opinion, are women overworked in farms?

Strongly agree

Agree

No response

Disagree

Strongly disagree

4. Do women enjoy the fruits of their work?

a) Has the family ever sold out land? Yes No

b) If yes, were the female family members consulted?

c) If no, state the reason (s)

d) Is the girl child entitled to land inheritance? (Give reasons for your opinion)

A4

1. Where do you get your farm input?

2. Who own the Agro-dealers' store – Male Female

3. If the answer to A2 is male explain why?

4. How many women work in that store?

5. Would you wish to venture into the agro-dealer business (Give reasons for your answers).-----

6. Why is it that more men are in the agro-dealer business than women?

Better education

Accessed to finance

Government support

Have more interest

Don't know

A5

1. State sources of women finance

Source	Tick
Banks	
Micro financial institutions	
Government funding	
Family savings	
Own savings	
Salaries	
CBOs	
Pyramid schemes	
Any other (specify)----- ----- -----	

B1:

1. Who uses the following farm implements and tools?

No.	Tasks	Male	Female	Both
1.	Tractor			
2.	Sprayers			
3.	Planters			
4.	Hoes			
5.	Pangas			
6.	Jembes/hoe			
7.	Ox-drawn plough			
8.	Watering cans			
9.	Others (specify			

2. Do women have access to the above (B1(1))

If no, what prevents them?

3. Have you ever used the following farm input?

No.	Tasks	(√)
1.	Manure	
2.	Inorganic fertilizer	
3.	Herbicides	
4.	Fungicides	
5.	Pesticides	
6.	Rodent	
7.	Acaricide	
8.	Other(s)	

4. Are women allowed to use the above inputs? (Give reasons).

5. Has there been any organization that has targeted women with farm input?

If yes, explain the nature of assistance and the benefits

B2:

Level of Education of respondents

No.	Education	(√)
1.	No formal education	
2.	Pre-primary	
3.	Primary	
4.	Secondary	
5.	College	
6.	University	
7.	Other (s)	

1. During schooling, were you taught Agriculture?

Yes No

2. If yes state the gender of your teacher.

Male Female

3. What is the rating of your teacher?

Below Average Very Good
Average Excellent
Good

B3:

1. a) Have you ever been visited by an agricultural extension office?

Yes No

b) If yes, how frequent?

Frequently

More frequently

Less frequently

Rarely

c) What is your rating on the performance of extension officer in crop and animal production? (Tick where appropriate).

Below average	Animal (✓)	Crop (✓)
Average		
Good		
Very good		
Excellent		

d) How many among the officers are female and what is their rating (as above)?

	Below average	Average	Good	Very good	Excellent
Few					
No female					
Many					
All					

e) What do you think should be done to improve agricultural extension service?

B4:

1. Have you ever heard about agricultural research? (Yes /No).

2. If yes, what do you understand about it?

3. Have you ever been involved in agricultural research? (Yes /No)

If yes, at what capacity/level

Researcher

Research assistant

Respondent

Don't know

4. Who are always involved in agricultural research?

Men

Women

5. Do you think agricultural research has done you any good (Explain your answer).

C1:

1. Apart from farm work, what else do you do?

2. To be answered by female respondents (only)

a) Tick where spouse gives support.

Source	Tick
Cooking	
Fetching water	
Fetching firewood	
Selling farm produce	
Taking children to school	

b) Please explain the nature of assistance?

3. To be completed by male respondents.

a) Explain what a good woman should do?

b) Under what circumstances would you assist your wife in their day-to-day tasks?

c) In your own opinion, where do you think women need relief?

Domestic work

Farm work

Wage labour

Other (s) (specify) -----

Give reasons for (c) above

Do you think HIV/AIDS has affected farming activities in your village (Give Reasons?)

4. Has any member of your family been affected with HIV/AIDS (Yes/No). Explain

How did the family handle inheritance?

5. Is the government doing enough to help women farmers (Explain how).

APPENDIX III

NAMES OF SUB-LOCATION, VILLAGES AND NUMBER OF HOUSEHOLDS IN YALA DIVISION.

SUB-LOCATION	VILLAGE NAME		HOMESTEADS TOTALS	HOUSEHOLD S TOTALS
1. Anyiko	1.	Anyiko		203
	2.	Konjra		246
	3.	Sarika		118
	4.	Tatro		256
Anyiko Total				823
2. Gongo	1	Gongo (A)		126
	2	Gongo (B)		121
	3	Migosi (A)		108
	4	Migosi (B)		97
	5	Nango (A)		108
	6	Nango (B)		117
	7	Nango (C)		111
Gongo Total				788
3. Jina	1	Jina (Nyando Unit)		57
	2	Jina (Obiero Unit)		74
	3	Jina (Ojing Unit)		63
	4	Jina (Nyando Unit)		79
	5	Jina (Anyuka Unit)		61
	6	Jina (Andang Unit)		63
	7	Marenyo		143
	8	Sidimba		40
	9	Ulumbi (central)		81
	10	Ulumbi (kudho)		122
	11	Ulumbi (ndagara)		73
	12	Ulumbi (Siware)		107
	13	Uwero & Alwal unit		35
Jina Total				998

4.	Lihanda	1	Bar	74
		2	Lihanda Centre	140
		3	Luala (A)	92
		4	Luala (B)	72
		5	Madara	101
		6	Mahanga (A)	103
		7	Mahanga (B)	40
		8	Maungo	88
		9	Mbinga	87
		10	Ndhiha	94
		11	Omindo	104
		12	Rabuor	119
Lihanda Total			1,114	
5.	Nyandiwa	1	Luri (A)	63
		2	Luri(B)	138
		3	Luri C	83
		4	Masogo A	102
		5	Masogo West	40
		6	Nyandhondho	50
		7	Nyandiwa (A)	60
		8	Nyandiwa (A)	80
		9	Ongoro (B)	89
		10	Rawalo (A)	80
		11	Rawalo (B)	70
		12	Rawalo C	69
		13	Rawalo (D)	64
		14	Uywe Sub-Unit	109
Nyandiwa Total			1097	
6	Marenyo	1	Chula	66
		2	Kachola	56
		3	Kagutu	70
		4	Kanyasembe	76
		5	Kanyibuojo	106
		6	Karogo	19

	7	Kobor	148	
	8	Kodiembo	90	
	9	Kogada	32	
	10	Mindhine	152	
	11	Ngutmbaka	139	
	12	Ratudi	45	
	13	Sagam	70	
	14	Sinaga Central	68	
	15	Udhalwa	88	
	16	Ugingo	33	
	17	Ugungu	118	
	18	Ulagai	135	
Marenyo Total			1,511	
7.	Nyawara	1	Karadier	169
		2	Masogo	116
		3	Nyamayoya (A)	90
		4	Nyamayoya (B)	109
		5	Siguhu	69
		6	Uyonga (A)	100
		7	Uyonga (B)	76
Nyawara Total			729	
8	Nyamninia	1	Ginga -Sawadha	184
		2	Muhanda (Arude unit)	109
		3	Muhanda (Midhiero)	70
		4	Muhanda (Rarieda)	113
		5	Muhanda (Uhonga)	52
		6	Muhoho Apostolic	69
		7	Muhoho Complex	74
		8	Muhoho KBC	83
		9	Umiru	96
		10	Umiru Guu Zone	80
		11	Umiru Pap Zone	63
		12	Umiru (Uganda)	98
Nyamninia Total			1,091	

9	Ramula	1	Ahenyo	94
		2	Mborra	132
		3	Miresi	81
		4	Naya	92
		5	Nyangulu	133
		6	Obwanda	108
		7	Odundo (A)	150
		8	Odundo (B)	166
		9	Onyoso	101
		10	Siandha (A)	96
		11	Siandha (B)	121
Ramula Total			1,274	
10	Uranga	1	Gamba	90
		2	Koga	107
		3	Nyandhiwa	146
		4	Odeko	83
		5	Onding	167
		6	Sinyolo	101
		7	Uranga Border	139
		8	Yenga	69
Uranga Total			902	
Grand Total			10,327	

Source: Millennium Village Project Survey Report of household (2007)

APPENDIX IV

LETTER OF INTRODUCTION TO THE NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY



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

The Secretary
National Council for Science and Technology
P.O. Box 30623-00100
NAIROBI, KENYA

24th May, 2010

Dear Sir/Madam

**RE: DANIEL OMONDI OKELLO REGISTRATION NO: L50/70593/2009 -
MASTER OF ARTS IN PROJECT PLANNING AND MANAGEMENT**

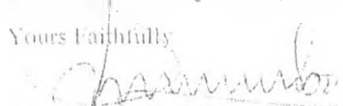
This is to inform you that **Daniel Omondi Okello** named above is a student in the University of Nairobi, College of Education and External Studies, School of Continuing and Distance Education, Kisumu Campus.

The purpose of this letter is to inform you that Daniel Omondi Okello has successfully completed his course work and Examinations in the programme, he has developed Research Project proposal and submitted before the School Board of Examiners which she successfully defended and made corrections as required by the School Board of Examiners.

The research title approved by the School Board of Examiners is: *Factors Influencing The Involvement of Women in Agriculture in Yala Division of Gem District , Kenya.* The research project is part of the pre-requisite of the course and therefore, we would appreciate if the student is issued with a research permit to enable him collect data and write a report. Research project reflect integration of practice and demonstrate writing skills and publishing ability. It also demonstrates the learners' readiness to advance knowledge and practice in the world of business

We hope to receive positive response so that the student can move to the field to collect data as soon as he gets the permit

Yours Faithfully


Dr. Charles M. Rambo, PhD

RESIDENT LECTURER/CO-ORDINATOR POST-GRADUATE
PROGRAMME DEPARTMENT OF EXTRA-MURAL STUDIES
UNIVERSITY OF NAIROBI

RESIDENT LECTURER
UNIVERSITY OF NAIROBI
KISUMU CAMPUS
P. O. BOX 825 - KISUMU
TEL: 057 - 2021534

APPENDIX V
RESEARCH PERMIT

PAGE 2

THIS IS TO CERTIFY THAT:

Prof./Dr./Mr./Mrs./Miss DANIEL

OMONDI OKELLO

of (Address) UNIVERSITY OF NAIROBI

P.O. BOX 825, KISUMU

has been permitted to conduct research in

Location,

GEM

District,

NYANZA

Province,

on the topic Factors influencing the
involvement of Women in Agriculture
in Yala Division of Gem District,
Kenya.

for a period ending 30TH SEPTEMBER, 20 10

PAGE 3

Research Permit No. NCST/RRI/12/1/SS/477

Date of issue 3/06/2010

Fee received SHS 1,000



Daniel Omondi Okello
Applicant's
Signature

[Signature]
Secretary
National Council for
Science and Technology