INFLUENCE OF SELECTED INSTITUTIONAL FACTORS ON PERFORMANCE OF COMMON INTEREST GROUPS (CIGs) OF SMALL HOLDER FARMERS IN GILGIL DIVISION, NAIVASHA DISTRICT, KENYA

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EGERTON UNIVERSITY

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DECLARATION AND RECOMMENDATION

DECLARATION

I declare that this project is my original work and has not been presented for an award of a degree or a diploma in this or any other university.

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HOSEA MACHUKI   **DATE**

Reg.No. EM12/1306/04

RECOMMENDATION

This thesis has been submitted with our recommendation as the University supervisors.

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DEDICATION

To all peopleand institutions working with small holder farmers in Kenya to improve livelihood.

ACKNOWLEDGEMENT

ABSTRACT

The National Agriculture and Livestock Extension Programme (NALEP) utilizethe Shifting Focal Area Approach (SFAA), to build the capacity of Common Interest Groups (CIGs) for performance improvement. A number of institutional factors play a role in determining how the CIGs perform. NALEP was designed to explore some of the institutional factors which include access to agricultural credit, commodity markets, and training among others so as to improve the performance of CIGs. Inspite of this, the performance of CIGs in NALEP focal areas within Gilgil division has remained low. The purpose of this study was to examine the influence of selected institutional factors on the organizational performance of CIGs. The study used survey methodto describe the characteristics of the sample. It employed a stratified proportionate random sample of 120 farmers drawn from 15 CIG in Gilgil division of Naivasha district. The groups engaged in diverse enterprises broadly categorized into crop and milk production on a small scale. A predesigned structured questionnaire was used to collect ordinal and categorical data covering performance, credit access, market access and training. The questionnaire was administered by the researcher to 8randomly selected farmers from each group identified as CIG. These data were analyzed using the Statistical Package for Social Sciences (SPSS) version 17, using descriptive statistics (frequencies, means, and standard deviations) and inferential statistics (multiple regression, spearman rank correlation coefficients and Chi-square). Hypotheses were tested at 5% level of significance.Key findings from the study indicated that access to commodity markets and access to agricultural credit significantly influenced performance of the CIGs while access to training despite being seen as useful and applicable did not significantly contribute to the performance of the CIGs. CIG performance was measured by level of enterprise production, level of cohesion, group leadership skills and level of farmer empowerment. The results of this study may be useful to the ministry of agriculture and NALEP to improve on the performance of CIGs in Gilgil Division and other areas through proper design and implementation of agricultural extension services.

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LIST OF ACRONYMS AND ABBREVIATIONS

CIGs	Common Interest Groups
DANIDA	Danish International Development Agency
FADC	Focal Area Development Committee
FAEP	Focal Area Extension Planning
FAES	Focal Area Extension Strategy
FAO	Food and Agriculture Organization
FBP	Farm Business Plan
FEW	Frontline Extension Worker
FSAP	Farm Specific Action Plan
GDP	Gross Domestic Product
GoK	Government of Kenya
GTZ	German Technical Co-operation
IFAD	International Fund for Agricultural Development
KARI	Kenya Agricultural Research Institute
MoA	Ministry of Agriculture
MoALD&M	Ministry of Agriculture Livestock Development and Marketing
MoARD	Ministry of Agriculture and Rural Development
MoCD&M	Ministry of Cooperatives Development and Marketing
MoL&FD	Ministry of Livestock and Fisheries Development
MoP&ND	Ministry of Planning and National Development
NAEP	National Agricultural Extension Policy
NALEP	National Agriculture and Livestock Extension Programme
NALEP- IF	NALEP Implementation Framework
NSWCP	National Soil and Water Conservation Programme
PPMCC	Pearson Product Moment Correlation Coefficient
PRA	Participatory Rural Appraisal
SFAA	Shifting Focal Area Approach
Sida	Swedish international development co-operation agency
SMS	Subject Matter Specialist
SPSS	Statistical Package for Social Sciences

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The shift away from supply driven to demand driven extension approaches has been occasioned by the inadequacies of past agricultural extension systems employed by the Government of Kenya through the Ministry of Agriculture and other service providers (MoARD, 2001). The new approaches are implemented in a variety of participatory and group focused ways. In Kenya, the National Agriculture and Livestock Extension Programme (NALEP) which was launched in 2000 has been implementing its Shifting Focal Area Approach (SFAA) whose major thrust is building capacity of Common Interest Groups (CIGs) to improve their performance and demand for extension services. The programme implemented the strategy in focal areas within Elementaita and Gilgil Divisions through enterprise based CIGs with different institutional attributes which held the key to their performance, sustainability and ability to demand extension services.

Over the years the Government of Kenya and other stakeholders have used various extension approaches. These early extension approaches were non-participatory and they were largely ineffective because they lacked farmer involvement and were top-down in nature (GoK, 2005). New approaches which are more diagnostic and participatory to technology dissemination have now been embraced. These include programmes like the NALEP's SFAES which was funded by Swedish International Development Co-operation Agency (MoARD, 2001).

NALEP as a programme was introduced to be participatory and also one that defines the target group from the onset based on biophysical and socio-economic circumstances. The mission of NALEP was to provide and facilitate pluralistic and efficient extension services for increased production, food security, higher incomes and improved environment. The NALEP programme utilized the Focal Area Extension Strategy (FAES) in dissemination of improved farming technologies. This extension is participatory in nature in that it called for a strong collaboration between agricultural extension staff and other extension providers. This strategy utilized the SFAA and the extension personnel in each focal area serve approximately 400 farmers per year (MoARD, 2001).

SFAA was implemented within the National Agriculture and Livestock Extension Programme Implementation Framework (NALEP-IF) and was co-coordinated by the Ministry of Agriculture (MoA) and the Ministry of Livestock and Fisheries Development (MoL&FD). The SFAA concentrated efforts and resources in a selected geographical area over a particular period of time resulting in the formation of organizational structures among focal area farming community including the Focal Area Development Committees (FADC) and CIGs, around crop or livestock enterprises or natural resource management. The operational procedures of the SFAA were structured such that the extension officers and other stakeholders conduct extension mostly through farmer groups referred to as Common Interest Groups.CIGs as described under NALEP are enterprise based farmer groups formed with the assistance of the various subject matter specialists (SMSs) to take advantage of the various opportunities available to them. These CIGs are formed with an aim of empowering the farming communities in the FAs to take up agri-business opportunities with an emphasis on the enterprise-based ones that are market oriented and income driven. The CIG approach reinforces the need for demand driven extension (MoAandMoL&FD, 2003). It is therefore relevant for technology dissemination, commodity bulking, marketing or any activity that would enable the group to tap economies of scale.

Common Interest Group performance could be measured using a number of parameters. These include level of enterprise performance, level of cohesion, group leadership skills and level of farmer empowerment. The performance of these CIGs is dependent to a large extent on several factors. Some of these factors may include institutional ones like access to agricultural credit, access to commodity markets, and access to training opportunities among others. These factors were selected because they are the major thrust of the NALEP. Elementaita and Gilgil divisions of Gilgildistrict were among the divisions where this programme was implemented. The scope of the study covered Gilgil division that has 35 common interest groups. It was therefore important to determine how these institutional factors: access to agricultural credit, access to commodity markets, and access to training influenced the performance of CIGs in the division.

1.2 Statement of the Problem

One of the divisions where the NALEP programme was implemented was Gilgil. The performance of CIGs in Gilgil Division remained low despite the launch of NALEP in 2000 which focuses on participatory and group approaches. It is likely that this scenario was due to a number of institutional factors which influenced the performance of CIGs. The productivity of major enterprises by the CIGs such as maize, beans, Irish potatoes and milk had not dramatically improved since the launch of the programme (CIR, 2005). Average yield of crops were at an average of 5 bags of maize per acre, 4 bags of potato per acre and 5 litres of milk per cow per day. It was also evident that CIG membership was low with many CIGs having less than 20 members, there were leadership wrangles, poor turnout for group activities and groups were disintegrating. This study intended to investigate the following key institutional factors: access to agricultural credit, access to commodity markets, and access to training to levels of CIG performance indicated by level of enterprise productivity, group cohesion, group leadership skills and level of farmer empowerment in Gilgil Division of NaivashaDistrict. Specifically, the study focused on the influence of selectedinstitutional factors on performance of small holder farmers organized as CIG. The importance of the study is that it provides some solutions to the problem of poor performance attributable to institutional factors of access to credit, markets and training.

1.3   Purpose of the Study

The purpose of the study was to investigate the influence of selected institutional factors on the performance of CIGs among small holder farmers in Gilgil division, NaivashaDistrict**.**

1.4   Objectives of the Study

The objectives of this study were to:

   (i)   Determine the influence of access to agricultural credit on the performance of CIGs of smallholder farmers in GilgilDivision of Naivashadistrict.

   (ii)   Determine the influence of access to commodity markets on the performance of CIGs of smallholder farmers in GilgilDivision of NaivashaDistrict.

   (iii)   Determine the influence of access to training on the performance of CIGs of smallholder farmers in GilgilDivision of NaivashaDistrict.

1.5 Hypotheses

The following are the null hypotheses that were tested in this study.

Ho_1: Access to agricultural credit does not significantly influence the performance of CIGs of smallholder farmers in GilgilDivision of NaivashaDistrict.

Ho_2: Access to commodity markets does not significantly influence the performance of CIGs of smallholder farmers in GilgilDivision of NaivashaDistrict.

Ho_3: Access to training does not significantly influence the performance of CIGs of smallholder farmers in GilgilDivision of NaivashaDistrict.

1.6 Significance of the Study

This study was carried out to examine the relationship between the selected institutional factors and the performance of CIGs within focal areas in Elementaita and Gilgil Divisions. The study findings that there were correlations between institutional factors of access to agricultural credit and access to commodity markets and performance of CIGs supported the assertion that CIG performance is determined by a number of institutional factors. This supports the organizational theory that recognizes that group performance is as a result of dynamic interaction of multiple factors within the individual and the environment. The study findings unraveled that access to markets had the greatest contribution to performance of CIGs, followed by access to credit. These findings may be useful in prioritizing targets for new programme interventions. Targeting smallholder farmers with access to readyand followed bycredit would contribute most to CIG performance. The NALEP managers, extension providers and other agricultural institutions may want to consider some of the findings of this study in developing future effective extension programmes. These findings may also be used in restructuring the NALEP programme so as to improve on the delivery of the service to small holder farmers.

1.7 Limitations of the Study

(i) The performance of the CIGs as farmer groups can not only be attributed to the influence of institutional factors brought about by NALEP in the focal areas. Influences from support to these farmer groups by other external organizations like NGOs may also have contributed to their observed performance. The researcher countered this by establishing the extent of external linkages and support each CIG received from sources other than NALEP.

(ii) The study focused on purposively selected 15 CIGs. In view of this, the generalizations and applications of the study findings might be limited to these CIGs of Gilgil District, Kenya.

1.8   Scope of the Study

This study focused on selected institutional factors that influenced the performance of CIGs of smallholder farmers in Gilgil Division. These factors were: access to agricultural credit, access to commodity markets and access to training. The study covered smallholder farmers in the three focal areas which had been implemented during the period 2000-2005. Fifteen CIGs were used for the study out of the total fifty two that existed. The performance of CIGs was measured in terms of the level of enterprise productivity, level of group cohesion, group leadership skills, and level of farmer empowerment. The level of enterprise production was with respect to the yield of major enterprises in Gilgil Division. These enterprises were maize, milk, beans and potatoes. The level of group cohesion was with respect to the level of farmer participation and attendance to group activities. Group leadership skills werewith respect to conflict resolution, financial management, democratic governance and gender integration. Farmer empowerment was with respect to extent of learning and implementation of new technologies. These various parameters were chosen because they were the main focus of NALEP (MoARD, 2001).

1.9   Assumptions of the Study

This study assumed that the strategy of SFAA was implemented uniformly in all the NALEP Focal Areas within the division. It is also assumed that the influence of environmental factors such as climate and soils on CIG group performance in the division is the same. Governance issues among the groups are the same so that it is not a confounding variable.

1.10   Definition of Terms

The following operational terms were used in the study:-

Cohesiveness: The degree of mutual affection among members and their attraction to the group (Yukl, 1989).In this study it means how well the members of a CIG participate and attend to group activities.

Common Interest Groups (CIGs): These are enterprise based farmer groups formed with the assistance of the various subject matter specialists (SMS) to take advantage of the various opportunities available to them. In this study CIG refers to a group of farmers who have a common interest to produce a given enterprise for sale.

Farmer Empowerment: is a process of providing farmers with an opportunity to learn and achieve greater control over the conditions that they face every day in their farms. In this study, farmers get the opportunity to learn, apply and implement various aspects of new technologies disseminated through group approach.

Group Extension: In this study it away of disseminating information and technologies on agriculture and rural development through groups of farmers.

Institutional factors: These are organizational attributes that contribute to the level of performance of CIGs within a Focal Area. In this study the term refers to selected factors including: access to agricultural credit, access to commodity markets and access to training.

Participation: Is the process by which people become involved in their own development Including some or all of the steps of assessing their own situation and making decision on research, planning, implementation, monitoring progress and evaluation the outcome in this study it means how farmers who are members of a CIG are involved.

Performance of CIG: Performance is defined as "the degree to which a task is accomplished". In this study it means the degree to which CIGs accomplish their intended objectives. Performance is measured by a performance index computed from various indicators of CIG performance like enterprise productivity, group cohesion, group leadership skills and farmer empowerment.

Smallholder: In this study it is a farmer with not more than 3 acres of land, owns not more than five animals and practices animal/crop integration as a major source of livelihood.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter contains literature review, which relates to the study. The chapter focuses on the importance of Agricultural services in Kenya. It also examines the extension approaches that have been used i.e. the conventional and participatory extension approaches. The chapter also discusses the Shifting Focal Area Approach, CIGs, group extension methods, and the performance of CIGs as measured by group leadership, group cohesion, and farmer empowerment. The chapter also discusses factors that influence performance of farmer groups including access to agricultural credit, access to commodity markets and access to training. Finally the chapter presents a theoretical and conceptual framework for the study.

2.2 Importance of Agricultural Extension Services

MoARD (2001), envisages agricultural extension as a two way communication/training process, involving adult learning techniques whose aim is to improve knowledge, change attitude/behaviour, lead to adoption of new technologies and improve skills for both the farmers and extension workers with a view of increasing and improving farmers' incomes and productivity on a sustainable basis. In the 1950s and 1960s, the focus was on building public sector research departments and institutes and extension services. This broadened with the National Agricultural Research System (NARS) approach of the 1980s, the Agricultural Knowledge and Information System (AKIS) approach in the 1990s, and the recent Agricultural Innovation System (AIS) approach (Ponniah et al., 2008).

Many national extension systems have been widely criticized for being inefficient, ineffective, poorly linked to agricultural research systems, lacking clear objectives and motivation, not accountable to clients, and lacking relevant technologies. Therefore national extension systems are broadly striving to revitalize themselves to match the 21st century extension needs of farmers and rural households. Extension systems worldwide are being compelled to adopt a broader mandate beyond merely transferring agricultural technologies to farmers (Umali-Deininger, 2007). And according to NALEP (2000), the role of Agricultural Extension is to provide information to extension clients in order to allow them better use of available resources by increasing technological options and organizational skills that in turn allows them to take greater advantages of production and market opportunities.

2.3 Extension Approaches

According to MoALD (2001), an extension approach is a style or strategy of managing extension. Some of the approaches, which have been tried in Kenya for the purposes of technology dissemination include, the better farmer, the farmer training centres, Integrated Agricultural Development Programme (IADP), Integrated Rural Development programme (IRDP), Farming systems Research (FSR), Training and Visit (T & V). Currently the participatory approaches which include among others the Farmer Participatory Research, Farmer field school and the Shifting Focal Area Approach (SFAA). The premise of this study was that the two main categories of extension approaches (conventional and participatory) offer different opportunities for farmer group performance. Conventional approaches tend to exclude the farmers from participating in the design of the extension system which may lead to low performance of farmer groups. Participatory approaches on the other hand offer the farmers opportunities to contribute to how extension messages are delivered and this may lead to a high performance of the farmer groups.

2.3.1 Conventional Extension Approaches

Conventional extension approach utilizes the "top-down" model of transfer of technology, thus conforming to the basic assumption that its primary task is to convey superior technologies into the local farming practices or systems. Farmers are seen as the recipients of "expert" decision-making, being either adopters or rejecters of innovations, but not the originators of either technical knowledge or improved practices. The conventional extension approach has not been fully successful as evaluated and reported through numerous studies: In this approach, the farmer is at the end of the information chain, with little opportunity to provide feedback. Due to low staff numbers, communicating information directly to a large number of farmers is difficult. Low operational budgets, with 85–97 percent of expenditures going to salaries, limit the ability of DoA staff to visit farmer fields (Sulaiman and van den Ban 2003; Swanson 2008). Due to the large number of schemes and programs coming from the center and state, extension staff also tends to perform public duties not related to extension, such as election or census duties (Anderson, Feder, and Ganguly 2006). Examples of some conventional approaches includes; model farmer approach, transfer of technology approach, farming systems research, Farmer Training Centres (FTCs) and the training and visit approach among others (MoARD, 2001a). These approaches don't give enough consideration to socio-economic circumstances of the farmer, including his/her knowledge and experience of his/her environment and takes little account of the on-farm and off-farm activities. (MoARD 2001). These approaches therefore were considered non-participatory in nature and fell short of the requirement to succeed in enhancing farmer group development.

2.3.2 Participatory Extension Approaches

The participatory approaches emerged in the late 1980s after it was realized that most technologies developed by researchers alone were inappropriate for small-holder farmers. And also that conventional extension approaches had failed to meet their needs.In the all inclusive approach, The Farm Information and Advisory Centre (FIAC) is the physical platform at the block level where farmers, members of the private sector, and extension field staff members from each line department meet to discuss, plan, and execute extension programs. The block technology team includes technical officers from various line departments and consults with the Farmer Advisory Committee (FAC), which includes the heads of farmer interest groups (FIGs), at the FIAC to develop a block action plan. The block action plan is then approved for funding by the Agricultural Technology Management Agency (ATMA) governing board (Singh and Swanson 2006). According to Jurgen*et al* (2000), the following are some of the characteristics of participatory extension approaches: they integrate community mobilization for planning and action with rural development, agricultural extension and research; They are based on an equal partnership between farmers, researchers and extension agents who can learn from each other and contribute their knowledge and skills; they aim to strengthen rural people's problem –solving, planning and management abilities; they encourage smallholder farmers to learn through experimentation, building on their own knowledge and practices and blending them with new ideas and;They recognize that communities are not homogenous but consist of various social groups with conflicts and differences in interest, power and capabilities. The goal is to achieve equitable and sustainable development through the negotiation of interests among these groups and by providing spaces for the poor and marginalized in collective decision making. Some of the participatory approaches that have been used include; Participatory Learning and action, Participatory Action Research, Farmer participatory Research, Farmer field schools and Shifting Focal Area Approach. Critics of this approach have argued that after all participatory approaches may not be a truly inclusive representation of farming communities, and members may be too weak to articulate their concerns or may be poorly involved in decisionmaking (Lenin, Singh, &Vijayaragavan, 2009; Sulaimanand Holt, 2002).

2.3.3.The Shifting Focal Area Approach (SFAA)

The use of the SFAA is aimed at increasing the extension coverage without necessary depending on the Frontline Extension Workers (FEWs). Various forms of the SFAA are in use through ongoing programmers founded by Sida, GTZ, DANIDA and IFAD. In this approach officers with specialized skills are deployed in an area to work with FEWs together with farmers for a specific period of time, to facilitate the farmers solve specific problems and then the officers move to the next area of need. (MoARD 2001).-

The strategy of SFAA entails concentration of efforts and resources in a Focal Area (FA) for a specific period of time for example one year then moving on to the next, leaving behind the local Field Extension Worker (FEW) to continue work. The period of intensive extension work in the FA is seen as a planning and capacity building year. The project will leave behind community action plans as well as Farm Specific Action Plans (FSAPs). A well organized community will now be able to tackle general community development aspects under the leadership of Focal Area Development Communities, (FADCs) as well as development of their farming enterprises individually or in Common Interest Groups (CIGs). During the extended year of NALEP Phase I and during Phase II more emphasis was to be done CIGs. A more gradual reduction of interaction with the FAs is planned where capacity of CIGs and individual farmers is built to a level where they can demand and in future pay for services provided in the area (MoA2004; MoL&FD 2004). This way the farmers are able to develop strategies that are in tandem with the national poverty strategies (Swallow,2005).

2.4Common Interest Group (CIGs)

CIGs as described under NALEP are enterprise based farmer groups formed with the assistance of the various subject matter specialists (SMSs) to take advantage of the various opportunities available to them. These CIGs are formed with an aim of empowering the farming communities in the FAs to take up agri-business opportunities with an emphasis on the enterprise-based ones that are market oriented and income driven. The promotion of opportunity and formation of CIGs follows the following steps:-

(i) Identification of opportunities by the various District and/or Divisional SMSs.

(ii) Promotion of the opportunities/triggering demand for extension services, done by providing the necessary information regarding the opportunities.

(iii)Formation of CIGs by the farmers with the capacity and interest in a given opportunity.

(iv)Capacity building through training on organizational development, networking skills and technical packages required for enterprise development.

Farmers are encouraged to form CIGs so that they can more easily access extension services under SFAA. These CIGs are meant to handle the production and marketing of individual commodities of interest for income generation. However the farmers who are not interested in enterprise-based opportunities will form groups referred to as Extension groups (MOA and MOLFD 2004b). When the SFAA was started, part of the intention was to have the CIGs act as vehicles through which extension messages would reach the farmers and have this as a grass root structure for development within the communities. There are however, certain institutional factors that determine whether this is achieved. It is on this premise that this study sought to ascertain their influence on the performance of the CIGs.

2.4.1. History of CIGs in Kenya

The failure of the traditional individual extension approach to deliver sustainable agricultural and rural development has become a major concern for governments in developing countries. Despite the heavy investments in agricultural extension programs, the expectations for increased agricultural production and improvement in farmers' lives have not been made. Part of the reason for this is the failure of the past extension systems to reach the marginalized groups and farmers. Agricultural extension services are fundamental in building farmers' knowledge and capacity for better crop and resource management. Nevertheless, both the quality and quantity of extension services have suffered in the last two decades(Action Aid, 2011).To address this failure, public agricultural extension services in Kenya have since 2000 used an approach to extension known as the common interest group approach. It was designed to address both economic and social processes to overcome past weaknesses. This group method was first brought up and introduced as the replacement for the Baraza approach which the Government had been taking since its independence in the early sixties and in the end was proven ineffective in improving the status, the out puts and the culture of the agriculture of Kenya. In response the failure of such top-down methods, the newly introduced Farmer Group Approach encouraged horizontal methods which encouraged individual farmers to come together to talk about problems and reach consensus, conclusions and solutions (Kitetu, 2005).

2.4.2. Role of CIGs and Extension Groups in Agriculture

The formation of common interest groups is a structured process facilitated by agricultural extension officers. The officers use posters, pamphlets and other media to advertise opportunities for enterprise development. Farmers who are interested in an advertised opportunity register and a group is formed. The group is then facilitated to create a growth plan that includes a framework of activities required for the enterprise development to accomplish its goals and vision. Agricultural extension officers

then guide the group through step-by-step activity development. Farmer activity implementation is at the individual farm level rather than at the group level. Group activity is limited to technology dissemination, commodity bulking, marketing and any other activities that enable the group to tap economies of scale (Githaiga, 2007). If properly applied, the CIG approach can lead to improved economic performance in terms of increased levels of farm productivity, food security, and farm income. In many parts of Europe particularly in the Netherlands, extension has been anchored on institutional arrangements involving social groups of farmers and the state, and are grounded in national contexts (Labarthe, 2009).

2.5 Group Extension Method

It is generally recognized that working with groups rather than individual farmers is more conducive to effective extension because the competition among groups has been a major factor in facilitating the dissemination of extension recommendations (Venkatesan, 1995; BindlishandEvenson 1993). It is however cautioned that while extension could work with already-existing groups, it should refrain from being pro-active in the creation of such organization, as there is a real danger of farmers being coerced into joining the groups by public sector extension services. The way decisions are made in the groups has an impact on their performances and sustainability.

Groups can be important in keeping farmers in the foreground and in creating a spread or multiplier effect with relevant improved technologies (Norman *et al*., 1989). The group format also provides an efficient way of ascertaining consensus opinions about the relevance of technologies being tested. It is further suggested that extension worker tend to acts as a converting force when they seek and work with already existing groups and this helps to keep the group together (Bindlish&Evenson, 1993). Problems associated with this method include the increased demand for information and individual extension hence putting significant strain on the ability of the ministry staff to service them adequately. The groups are not always representative of the farmers or community, leaving out the resource poor and sometimes women. The ability of groups to address issues effectively is limited by the knowledge, perception and financial position of members of the group. Overall the group extension method has a higher coverage and is more cost-effective (MoARD, 2001).

2.6   The performance of CIGs

The performance of CIGs is dependent on a number of factors. These factors include but are not limited to; level of enterprise production for the various enterprises chosen by the group, group leadership skills, group cohesion, and farmer empowerment.

2.6.1 Group leadership

Group leadership and decision making are important to the formation and operation of small groups (Burkey, 1996). Group performance depends to a large extent on the interaction between the leader and the rest of the group members (Forsyth, 1990). Group leadership skills are an important attribute to the quality and performance of any farmers' group. A leadership style approach to the theory of leadership considers autocratic, democratic and Laissez-faire styles (Johnson & Johnson, 1975). Bartol and Martin (1991), reported that work quality and group satisfaction were higher in democratically led groups. The participation in group decision making harnesses positive motivated and group dynamic effected. However, Yukl (1989) recommends that leadership should be shared among group members because a group will be ineffective if the leader is either too passive or too domineering. In an ideal group, leadership will shift from person to person depending on the task the group needs to accomplish at that time. Farmer groups require leaders because they will assist them to get organized, develop their programs, grow as an effective group and enhance individual growth with the group. In NALEP, the CIGs were envisaged as groups that could have a democratic process of electing leaders that could steer them to realize their development objectives.

2.6.2 Group Cohesiveness

Cohesiveness is the degree of mutual affection among members and their attraction to the group (Yuki, 1989, Huczynski& Buchanan, 1991). Evidence of cohesion appears when members begin to refer to themselves, each other, and the group as "we" and when they take hold of an idea or problem and work together on it (Hartford, 1971). Increased cohesiveness reflects the growth of group norms that regulate and stabilize the group internal dynamics. And if groups are to be used as change agents, then the members should have a strong sense of group identity and belonging in order to have sufficient influence over their members (Forsyth, 1990). Norman *et al*. (1989) observes that the more homogenous a group is in terms of self-defined interests and perceived problems, the more effective the group process is likely to be. CIGs that exhibit high levels of cohesiveness are therefore likely to work better and this may lead to better performance.

2.6.3Farmer empowerment

The concept of empowerment itself is highly contentious (Kaber, 1998). As a general definition, however, it is a multi-dimensional social process that helps people gain control over their own lives. It is a process of strengthening people's capacity and ability to access resources that will enable them to manage those variables that most affect their lives (Bernet, T *et al*., 2006). It fosters power in people, for use in their own lives, their communities, and in their society, by acting on issues that

they define as important. (Wilson, 1996). Individual change is prerequisite for community empowerment. While extension programs cannot give people power and make them "empowered", they can provide the opportunities, resources and support that they need to become involved themselves. Extension programs strive to teach people skills and knowledge that will motivate them to take steps to improve their own lives – to be empowered. (Page &Czuba, 1999). Farmer empowerment is widely regarded as the most sustainable approach to helping poor farmers in Africa move out of poverty (Beaudoux*et al*., 1994). Empowering farmers can be a cornerstone of the new approach to extension. For extension workers, empowering farmers is an act of helping communities to build, develop and increase their power through co-operation sharing and working together. Empowered farmers' groups can act as convergent points or plat forms for solving local problems and mobilizing human and financial resources for sustainable development (Chamala, 1990). Lack of economic and political power makes it difficult for the poor to access resources that would help them move out of poverty. However, improving their access to knowledge and greater participation in the creation of knowledge can make an important contribution to their empowerment (Owen *et al*., 2005). In empowering farmers, the CIGs to which they belong also become empowered in turn. This then leads to sustainability of the CIGs leading to better performance. This is emancipative empowerment.

2.7   Factors Influencing Farmer Group Performance

The performance of farmer groups is influenced by a number of factors. Some of these factors are institutional, environmental, socio-economic and political. This study however seeks to look at the influence of some institutional factors as they relate to the performance of the CIGs. These institutional factors have in various studies been shown to influence farmer group performance. However, there was need to understand the influence of these factors on CIG performance under the NALEP dispensation in Gilgil division.

2.7.1   Access to agricultural credit

Agricultural growth is crucial for alleviating rural poverty. Access to institutional credit by more farmers and appropriate quantity and quality of the agricultural credit are crucial for realizing the full potential of agriculture as a profitable activity (World Bank, 2003). Modern agricultural production systems are capital intensive. As such, a large portion of capital used in farming is borrowed. For the majority of commercial-sized producers, credit is necessary to facilitate input purchases and can be a significant cost of production. Farm credit demand in Kenya has been steady in recent years and creditworthy farmers generally experience competitive lending markets.

Rural areas are disadvantaged in attracting equity capital (as opposed to debt capital) for rural businesses, and that farmers would benefit financially if they were better able to capture value-added components of the food and fiber they produce (Collender, 1998). Ownership in value-added businesses might make farmers less dependent on financial support from government programs (Drabenstottand Meeker, 1997). This can only be possible if farmers have steady access to affordable agricultural credit. CIGs are therefore seen as groups that need to get access to agricultural credit to boost their enterprise production.

Amudavi, (2005) observes that if the intent of extension programmes is to foster capabilities of groups to generate outcomes, then the programmes would do well to target local groups for financial and organizational support. This would include either designing tailor made credit facilities or creating sustainable linkages with lending institutions that will be willing to provide conducive credit facilities to farmers. Technology information needs to be supported with information about reliable sources for that technology, and where credit can be accessed (Claire *et al.*, 2010)

2.7.2 Access to commodity markets

The International Fund for Agricultural Development (IFAD) recognizes that efforts to increase agricultural productivity can be effective only if they are linked to an appreciation of market potential; and it calls for integrated approaches along the full continuum of production, processing and marketing (IFAD, 2003). Market access is critical to the development of agriculture. Value addition to agricultural raw materials and commodities is a key strategy in improving access to both traditional and emerging markets. Relevant market information for both domestic and export markets is also key to the development of markets. Limited access to information and contacts jeopardize the position of small producers in the marketplace, making agricultural production unprofitable and risky (Bernet, *et al.*, 2006). In support of an effective market strategy, the development of market infrastructure and especially rural market facilities need to be developed (MoA, 2005) Limited access to markets is a major cause of rural poverty. Despite the increasing opportunities offered by the rapid growth in demand for agricultural products in developing countries, smallholder producers in rural areas face large constrains in reaching the major urban and global markets (Owen *et al.*, 2005). Farmer organizations like CIGs need to play their role in providing market support services to their members. Farmer Support Programmes have emerged in the smallholder sector to specifically target those resource-poor farmers with the greatest potential to benefit from participation in better paying markets (Fényes, *et al.*, 2008). Aad*et al*(2012) posited that improving market access for smallholders is very dependent on a suitable enabling institutional environment to obtain the required resources to become a successful farmer.

2.7.3 Access to training

Institutional capacity building is widely accepted as being important in sustaining community development. Incorporating new perspectives, e.g. on sustainability, environment, gender, participatory development and the role of rural people's organizations while training farmers is also important. Reaching more vulnerable audiences especially the resource poor, women, young farmers, disabled or displaced people in rural areas will help step up production and enhance community development (Chambers, 1997). Access to these types of training will to a very large extent determine whether individual farmers or farmer groups have the necessary knowledge and skills to improve productivity of their farms. The learning environment for farmers needs to put a strong focus on participatory and interactive learning styles where indigenous knowledge systems and local values play significant roles (Wallace *et al*., 1996). Taking advantage of new agricultural enterprises and opportunities requires learning new knowledge and skills. Improved access to knowledge can therefore increase resource-poor farmers' control over their production systems and livelihoods. This access is however influenced by the institutional context in which knowledge is created and made available (Owen *et al*., 2005). In Indonesia, a study conducted on the effectiveness of FFS showed that training of farmers on safe use of pesticides leads indeed to reduced pesticide use, and that trained farmers make a modest gain in knowledge. However, there is no significant diffusion of knowledge to other farmers who reside in the same villages as the trained farmers. These results imply that revision in the training procedures and curriculum need to be considered if the FFS approach is to become viable and effective (Feder*at al*., 2004)

The performance of CIGs like any other farmer organizations will depend on how well they have access to useful, applicable and timely training.

2.8 Theoretical framework

The theoretical framework for this study is based on the Nadler-Tushman Congruence Model. This model specifies inputs, transformation process and outputs and is also consistent with the open systems theory. The model is based on several assumptions which are common to modern organizational diagnostic models; these assumptions are;

(i) Organizations are open social systems within a larger environment.

(ii) Organizations are dynamic entities (i.e., change is possible and occurs).

(iii)Organizational behaviour occurs at the individual, group, and systems level.

(iv)Interactions occur between the individual, group, and systems levels of organizational behaviour.

The inputs within the Nadler-Tushman Congruence Model include such factors as the environment, resources, history (i.e., patterns of past behaviour), and organizational strategies. Nadler and Tushman are explicit in their conceptualization of each of the factors. For example, they describe the resources available to the organization as human resources, technology, capital, information, and other less tangible resources. While strategy is an input in the model, it is the single most important input to the organization and is depicted by the arrow from the input box to the organization.

The system components of the whole organizational transformation process are informal organizational arrangements, task, formal organizational arrangements, and individual components (Figure 1). Similarly, the outputs of the model include individual, group, and systems outputs: products and services, performance, and effectiveness. While outputs such as products and services are generally understood, specific examples of organizational performance and effectiveness identified by Nadler and Tushman (1980) consist of individual behaviour, group and intergroup behaviour and organizational functioning.
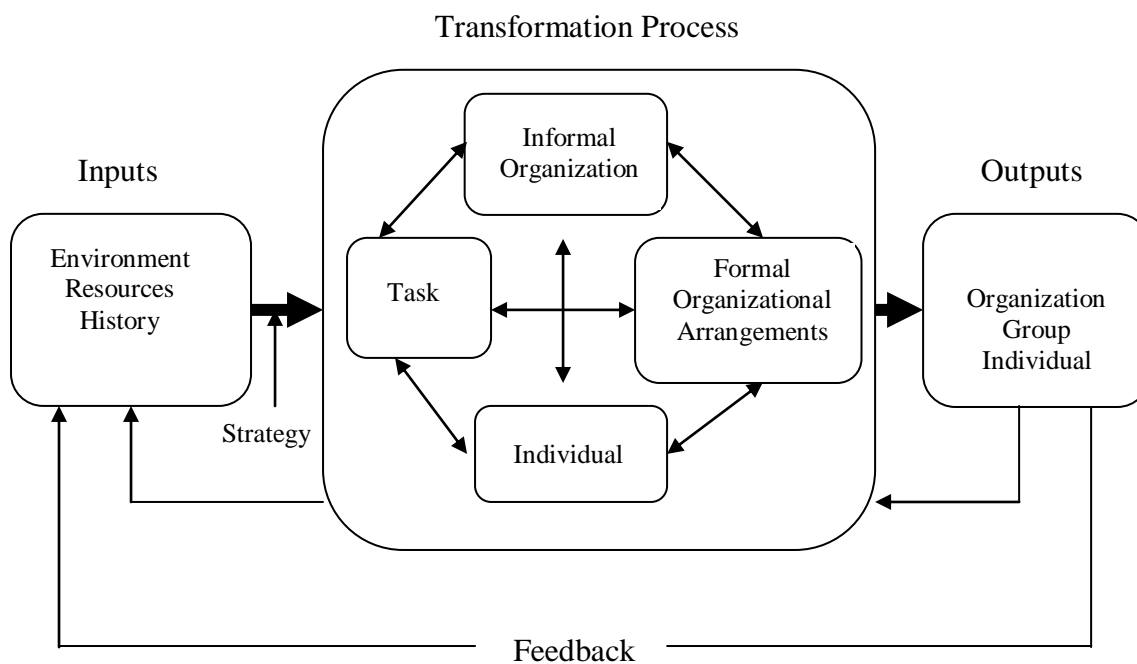
Figure 1: The Nadler and Tushman Congruence Model. Adopted from Nadler and Tushman (1980)

Nadler and Tushman (1980) apply the concept of congruence to their model. They describe congruence, or fit, as "the degree to which the needs, demands, goals, objectives, and/or structures of one component are consistent with the needs, demands, goals, objectives, and/or structures of another component" (i.e., how well pairs of components fit together). This model is termed the congruence model based on the fit between the system components (informal organization, task, formal organizational arrangements, and individual).The inputs into this model consist of

environment, resources, history and strategy. The system components consist of task, individual, formal organizational arrangements and informal organization. The outputs or measures of performance and effectiveness consist of individual behaviour, group and intergroup behaviour and organizational functioning.

2.9   Conceptual framework

The Nadler-Tushman framework offers an explanation of how the SFAA could encourage a high degree of farmer participation in the entire learning process which this study proposes to have an influence on CIG performance. There is need to have factors that will motivate the farmers to meet regularly to exchange knowledge and ideas hence achieve both group and individual objectives. The conceptual framework of this study is based on this premise. The inputs in the theoretical framework and particularly resources are considered as the independent variable in the study while the outputs are considered as the dependent variable. The system components in the theoretical framework are considered as the moderator variables in the study. The main independent variables in this study were institutional factors which were access to agricultural credit, access to commodity markets and access to training. The dependant variable in this study was CIG performance while the moderator variables were farmer characteristics, socio-economic factors, environmental factors as well as other institutional linkage factors influencing CIG performance. Figure 2 shows the relationships between the independent variables, moderator variables and the dependent variable as conceived in this study.

Independent variables

Dependent variable

Institutional factors:
Institutional factors:
Access to agricultural credit
• Availability
• Adequacy
• Affordability
Access to commodity markets
• Adequacy
• Timeliness
Access to training
• Usefulness
• Applicability
• Timeliness

CIG performance:
Level of enterprise production
- Yield of maize
- Yield of beans
- Yield of potatoes
- Milk yield

Level of cohesion
- Level of participation
- Attendance

Group leadership skills
- Conflict resolution
- Financial management
- Democratic governance
- Gender integration

Level of farmer empowerment
- Learn new technologies
- Level of Implementation

Moderator Variables

Farmer characteristics
- Age
- Education
- Gender
- Marital status

Socio-economic factors
- Land size
- Income levels
- Land tenure

Environmental Factors
- Climate
- Soils, etc

Other Institutional Factors
- External support and linkages other than NALEP
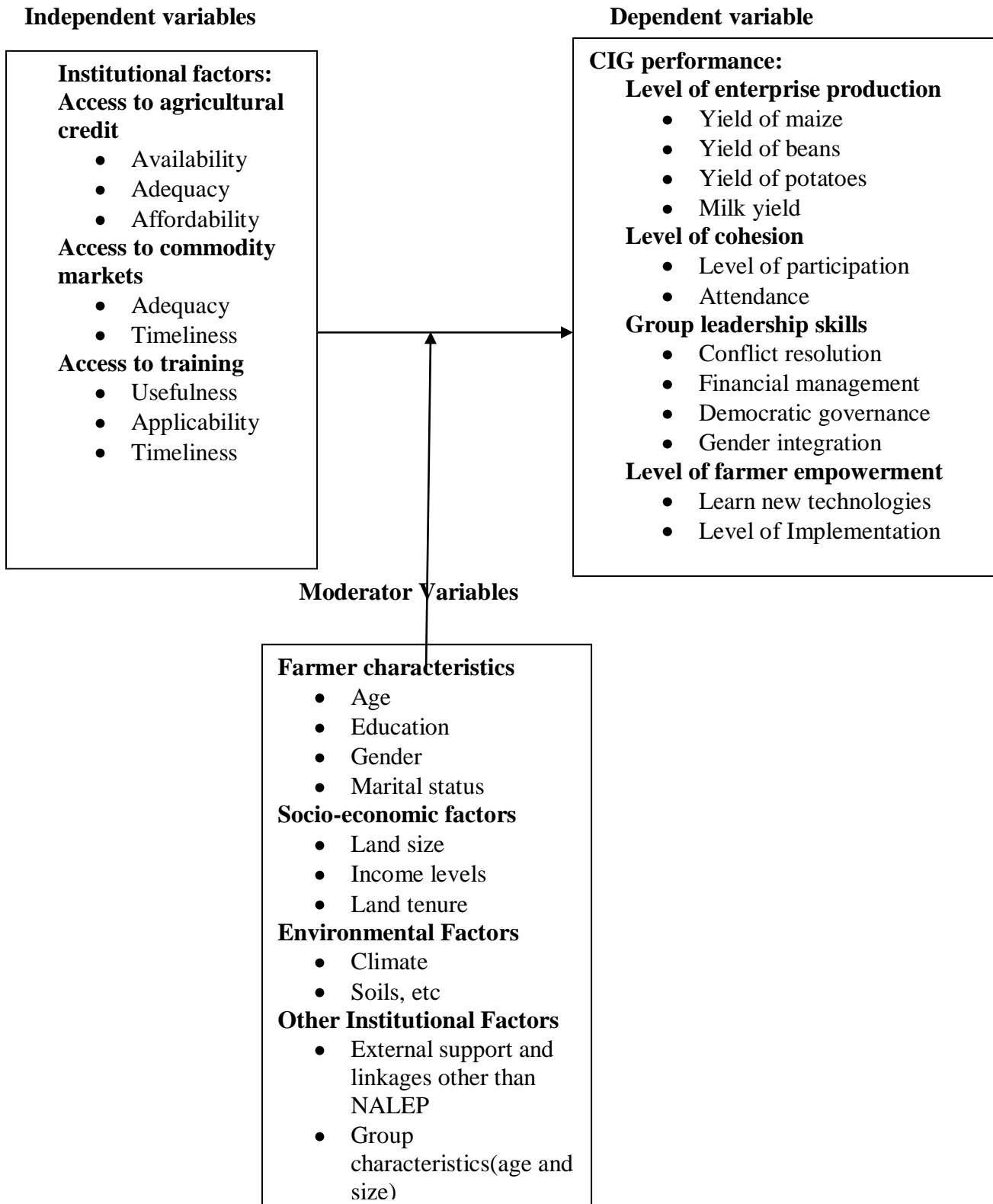- Group characteristics(age and size)

Figure 2: Conceptual framework on influence of institutional factors on CIG performance

2.9.1 Operationalisation of variables

This study operationalisedCIG performance through four key indicators: level of enterprise production; level of cohesiveness; group leadership skills; and level of farmer empowerment. The level of enterprise production was based on the yields from key enterprises in the division. These key enterprises were identified to include maize, beans, Irish potatoes and dairy farming (CIR, 2005). The level of cohesiveness wasbased on the level of participation and attendance of group activities as well as intra-group interactions. The level of group leadership skills was based on conflict resolution, financial management, democratic governance and gender integration. The level of farmer empowerment was based on the level of farmer demand for services. A CIG performance indicator was composed from these parameters.

The institutional factors were restricted to access to agricultural credit, access to commodity markets and access to training. Access to agricultural credit was measured by its availability, adequacy, and accessibility. Access to commodity markets was measured by adequacy and timeliness. Access to training was measured by usefulness and applicability. The study recognized the potential contamination effects of the moderator variables and thus sought to control them adequately. The farmer characteristics, the socio-economic factors and influence of other external institutional linkages were built into the study for subsequent statistic isolation or control at data analysis stage. Information regarding these factors weretherefore elicited by the research instrument. The study assumed a comparable influence of the environmental factors on the performance of the CIGs since all the CIGs that were selected for the study came from the same AEZ within Gilgil division.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the research procedure that was employed in this study. It describes the research design, study location, population, sample size, sampling procedures, instrumentation, validity, reliability, data collection and analysis procedures.

3.2 Research Design.

This study used the causal comparative research design. The design enabled the researcher to study the effects of CIG approach long after its implementation (Cohen &Manion, 2000 and Kathuri& Pals, 1993). This study examined CIG performance as pertains to NALEP-SFAA implementation since 2000 to 2005. Data was collected from a sample of a population at one point in time to investigate the selected institutional factors influencing the performance of CIGs of smallholder farmers of GilgilDivision. Causal comparative research designs are important in research and have been found to be useful when the researcher's goal is to determine whether the independent variable affected the outcome, or dependent variable, by comparing two or more groups of individuals as well as in describing the characteristics of a population and relationships of phenomena under study (Fraenkel&Wallen, 2000).

3.3 The Study Location

Thestudy was carried out in Gilgil Division. Gilgil Division is one of the 5 Divisions of Naivasha District and is approximately 40km East of Nakuru town. It borders Naivasha Division to the East, Narok Division to the South, Bahati Division and Nyandarua District to the North. Gilgil covers an area of 1,055.10 square kilometers with four Locations and 22,385 Households which adds up to a population of approximately 91,929 people. The Division is the second largest in the District, Naivasha Division ranking first in vastness. There are two main ethnic groups within the Division; these are the Kikuyu and the Maasai communities. There are other tribes but to a very small extent.Gilgil lies in the third climatic zone that covers the Rift Valley floor with altitudes between 1,520m – 1,890m above the sea level and receives rainfall of less than 700mm annually. It forms part of the marginal areas of the District. The natural resources found in the Division include hot springs and streams which are also a source of water especially in Eburru a sub location within the Division and also Lake Elementaita which is a salty Lake (Nakuru District, 2000). The division has a sparse settlement pattern of 96 persons per square kilometer. The inhabitants are mainly smallholder farmers who own an average of 2-5 acres of land and practice mixed farming. Maize, beans, Irish potatoes, tomatoes and kales are some of the most important crops grown in the Division.

3.4 Target Population

The target population for this study was all the farmers in the SFAA CIGs within Elementaita and Gilgil Divisions. The study unit was the CIGs while the sampling unit was the small holder farmers. The total number of CIGs that were targetedwas 52 while the total number of farmers in Gilgil Division was about 120,000 (NaivashaDistrict, 2010). As at 2005, there were only three focal areas namely Echariria, Mitimingiand Karunga in Gilgil Division.

3.5 The Sampling Procedure and Sample size

The sampling frame constituted a list of all the farmers enrolled in the SFAA CIGs in the two Divisions. This list was obtained from the Divisional NALEP coordinator's office in GilgilDivision. According to Frankel and Wallen (2000), a minimum sample of 100 is recommended for survey research. This study utilized a sample of 120 respondents. This was done in order to take care of any questionnaire that could have been spoilt and also incase some were to be absent. A multistage sampling method was used. All the focal areas that existed between 2000 to 2005 within the Division were used in the study. This is because they were few and at different stages of implementation. To achieve the desired sample size, proportionate stratified sampling method was used to select 15 CIGs within the two divisions (Table 1). This was because all the focal areas had different numbers of CIGs. Simple random sampling was then used to select 8 respondents in CIG, using the table of random numbers. This was done in order to give each farmer an equal and independent chance to be selected.

Table 1. Sample Size.

Name of focal area	No of CIGs	Proportion	CIGs selected	No of farmers	Total
Echariria	11	0.2	3	8	24
Mitimingi	17	0.3	5	8	40
Karunga	24	0.5	7	8	56
Total	**52**	**1.0**	**15**		**120**

3.6 Instrumentation

A structured questionnaire (Appendix A) was used to collect data from the respondents of the 15 sampled CIGs within the three focal areas. A structured questionnaire was chosen because of the ease of administration and scoring of the instrument and it also enabled the results to be readily analyzed. A similar system has been used elsewhere by FAO (FAO, 1992). It was also useful in that the type of response to items facilitated consistency across the respondents (Kathuri& Pals,1993). It allowed participation by illiterate people and allowed clarification of any ambiguity besides minimizing discrimination against the less articulate (Leung, 2001). The instrument was administered to the smallholder farmers by the researcher who elaborated on any aspect that may not have easily understood by the respondents.

The data collected included that on access to agricultural credit, access to commodity markets, access to training, CIG attributes, level of enterprise production, level of cohesion, group leadership skills, level of farmer empowerment, farmer characteristics, farmer socio-economic factors and environmental factors likely to affect CIG performance. CIG performance was measured by the level of enterprise production, level of cohesiveness, group leadership skills and level of farmer empowerment. An indicator for performance was then derived from the various indices of these parameters.

3.6.1. Validity

Fraenkel and Wallen (2000) define validity as the degree to which results obtained from the analysis of data actually represents the phenomenon under study. To improve the usefulness, appropriateness and meaningfulness of the findings of the study, the validity of the instrument was ascertained before the pre-testing. All this was to ensure that the instruments yielded valid data collected during the study from which inference were made. Two peers and lecturers from the department of Agricultural Education and Extension reviewed the contents of the instrument to determine validity and ensure the instrument accurately measured the variables it intended to measure. Two agricultural extension officers from the Gilgil and Elementaita Divisions were also used to counter check the same. The review was done to ascertain the instrument's content, face and construct validity. Appropriate adjustments were made which included restructuring, reformatting, recasting and increase in number and sequence of items. This was done to address issues of validity.

3.6.2 Reliability

To ensure consistency of the developed instrument, it was pre-tested using a random sample of 20 farmers from SFAA's CIGs. This was done in Kahuho Focal Area of Bahati Division because it had similar characteristics as those found in the study area. According to Kathuri and Pals (1993), the smallest number that yields meaningful results on data analysis in a survey research is 10. The pretest data was later subjected to a reliability test using the Cronbach's alpha coefficient method;

$$\alpha = \frac{N.r}{1 + (N-1)r}$$

Where N is the number of items and r is the average inter-item correlation among the items. According to Mugenda and Mugenda (1999), the advantage of this technique is that it eliminates the chance error due to different test conditions and it allows for the determination of inter-item consistency. A reliability coefficient of $\alpha=0.728$ was observed which was above the $\alpha=0.7$ recommended threshold for applied social sciences research (Santos & Reynaldo, 1999). The instrument was therefore found to be consistent and reliable and was adopted for the research.

3.7   Data Collection Procedures

The researcher obtained an introduction letter from GraduateSchool of Egerton Universityto the National Council for Science and Technology (NCST)and on the basis of this letter and upon payment of the requisite fee a research permit to collect primary data was then issued to the researcher by the council. During data collection, a structured questionnaire was used and this was administered personally to the respondents by the researcher. The respondents to whom the instrument was administered were clearly explained the purpose of the study and this was aimed at removing any doubts about the study and also to earn their confidence. The instrument was administered at the farmers' homesteads while all the secondary data required was obtained from the Divisional NALEP co-ordinator's office at Gilgil. These secondary data included; the number of Focal Areas within the Division, the number of CIGs in the focal areas and the names of the CIG members together with the main enterprise for each of those CIGs.

3.8   Data Analysis

After data collection, the data analysis procedure was broken into two phases. Phase one was preliminary data analysis in which familiarization, organization of the responses, editing and data pre-processing was done. According to the study objectives and variables, the data was organized and respective indices for CIG performance and levels of institutional characteristics of CIGs computed.

For determination and description of the elements of the independent variable, descriptive statistics were used. These include tabulations and chart constructions to summarize, describe and present the findings; means, standard deviations, coefficients of variation, frequencies and standard errors were used for data description. The respective indices were computed as composites to measure CIG performance. The level of enterprise production was categorized into levels to which codes were assigned for use in composing a CIG performance indicator. Table 2 and 3 show how this was done.

Table 2: Level of Enterprise Production (Crops)

Yield of crops	Quantity in bags/acre	Level
Low	1-5	1
Medium	6-9	2
High	Over 10	3

Table 3: Level of Enterprise production (Milk yield)

Yield of milk	Quantity in litres/cow/day	Level
Low	1-2	1
Medium	3-9	2
High	Over 10	3

The enterprise performance indicator (EPI) was arrived at as follows;

$$EPI = \frac{(Maize + beans + potatoes + milk)}{4}$$

To determine the EPI the scores arrived at were in percentage increase and were transformed into numerical values by log base 10 to standardize them. The level of cohesion was measured by a set of questions. The classification was done as follows; Low 1, Medium 2, High, 3.

Group cohesion index (GCI) was the mean of cohesion indices of the farmers. Group leadership was done on a five point scale. The group leadership index (GLI) was taken as mean of the leadership indices scored by farmers in each group. Farmer empowerment index (FEI) was the mean empowerment index scored by farmers in each CIG. The overall CIG performance index that is denoted by GPI to mean Group Performance Index was then computed thus:

$$GPI = (EPI \times GCI \times GLI \times FEI)^{1/4}$$

A similar geometrical mean function was used by Ochola and Kerkides (2004) to classify indices of land quality for extension effectiveness assessment at the farm recommendation level. The GPI was then classified in classes as shown in table 4.

Table 4: Level of CIG Performance

GPI	Level/Class	Description
0.0-0.8	1	Low CIG performance
0.9-1.6	2	Medium CIG performance
1.7-2.4	3	High CIG performance

Phase two of data analysis consisted of hypothesis testing and organization of data to achieve the study objectives. Hypotheses weretested at 5 % level of significance in the SPSS platform. Both bivariate and multivariate analyses weredone to relate the variables of the study. The scale of measure of the variables was used to determine the hypothesis testing statistic. To test the relationship between each of the selected institutional and CIG factors, Spearman's Rank Correlation Coefficient (SCC) was used. This gave the magnitude, direction and significance of the postulated influences. Chi-square tests were done to determine significant associations between independent variables and the dependent measures of CIG performance. To establish the contribution of each of the independent variables, a multiple linear regression model was used based on the standard model.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1Introduction

The results of the data analysis on the extent to which selected institutional factors influence the performance of CIGs of small holder farmers in Gilgil Division, Naivasha District, Kenya are presented and discussed in this chapter. The chapter describes sample characteristics including demographic and background characteristics of the respondents. Empirical findings and discussions were guided by the research objectives.

4.2 Demographic and Background Characteristics of the Respondents

This section gives a summary of the distribution of respondents in the following demographic and background characteristics: Age, educational level, socio-economic status, marital status and land ownership. These demographic characteristics were considered in this study and are discussed in this chapter because they play a role in determining the performance of CIGs. The method of partial correlation was used to get rid of the combined possible effects of association between the selected institutional factors and performance of CIGs.

4.2.1 Age of the Respondents

The age of respondents ranged from below 20 to above 50 years with median age class of

41-50. Majority of the respondents were aged over 40 years (75%) and were members of the participating groups as shown in Table 5. These findings indicate that many of the small holder farmerswere in their middle age and above.These results are consistent with a similar study on beekeeping that showed that the average age of beekeeping farmers in Mwingi District was 48.5 years (Musyoka, 2008).

Table 5: Age of the Respondents

Age Category	Frequency	Percent
Below 20 yrs	1	0.8
21-30 yrs	6	5.0
31-40 yrs	23	19.2
41-50 yrs	36	30.0
Above 50yrs	54	45.0
Total	**120**	**100.0**

4.2.2 Gender of the Respondents

The results in Figure 3 indicate the distribution of respondents by gender. Over two thirds of those interviewed were female (65.8%). This indicates that many of the small holder farmers who form

producer groups in this District are women as compared to men. In many parts of the country, it is usually women who form groups as compared to men only groups. These women groups have been known to engage in a wide range of activities including merry-go-rounds, rotating saving schemes, as well as procurement of household items among others.
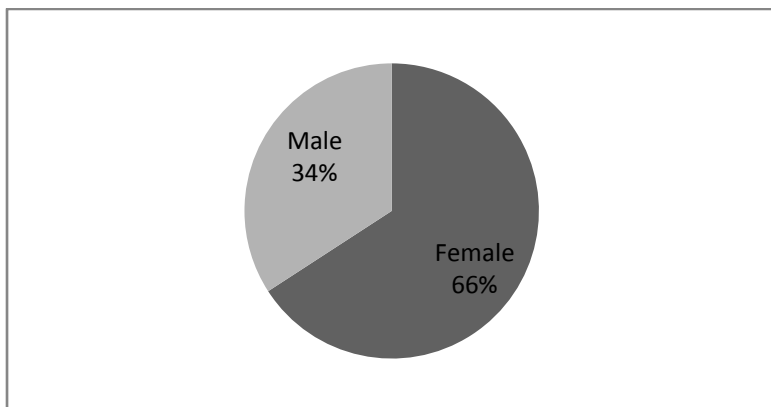
Figure 3: Gender of the Respondents

4.2.3 Education level of respondents

Information gathered from the respondents indicated that, majority of the respondents had average education. Level of education is believed to contribute to the ability to learn and acquire various skills necessary for agricultural production. More than half (52%) of the respondents had not proceeded beyond primary school education as shown in figure 4. These results are comparable with those of beekeeping groups in Mwingi district where 54.5 % of group members attained primary education (Musyoka,2008) Normally, when farmers are in groups, those with more education usually support those with less education in terms of technological advancement.

Figure 4: Education Level of respondents

4.2.4 Land Size Owned by respondents.

Land size owned by the individual households reflects access to land, an important production resource for increasing agricultural production. Within the farming community, normally farmers hire in/out land from/to others so as to meet their requirements. Table 6 reveal that majority of farmers 94 (79.7 %) farmers occupied less than three acres of land for use in agricultural production. These results are consistent with an inter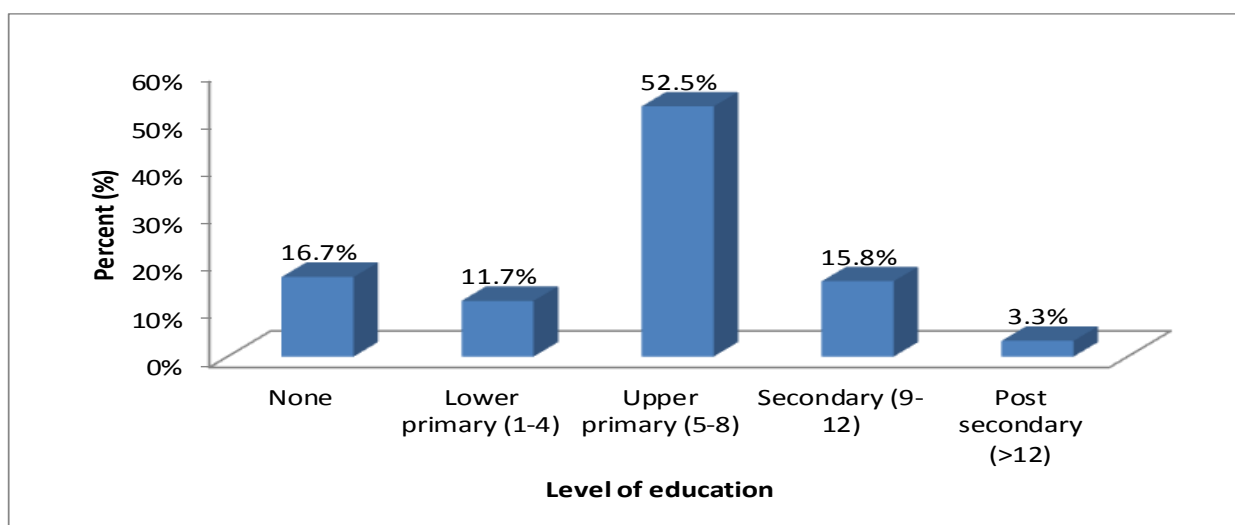nal impact assessment survey conducted by NALEP (2007) that indicated that majority of famers involved in the programme (71.8%) owned between 1 to 5 acres of land, and only a few (9.3%) owned more than 11 acres of land, reflecting some success in targeting land-resource poor farmers within the FAA membership.

Table 6: Land Size Owned by Respondents

Acreage	Frequency	Percent
1 Acre	42	35.0
2-3 Acres	52	43.3
4-5 Acres	19	15.8
6-7 Acres	1	.8
Over 7 Acres	4	3.3
Total	118	98.3

4.2.5 Land Tenure of the Respondents

Majority of the respondents were on freehold land tenure system as shown in Figure 5. Within the study area, many of the farmers purchased their land while they were members of land buying companies immediately after independence and this land is then passed on to their children.
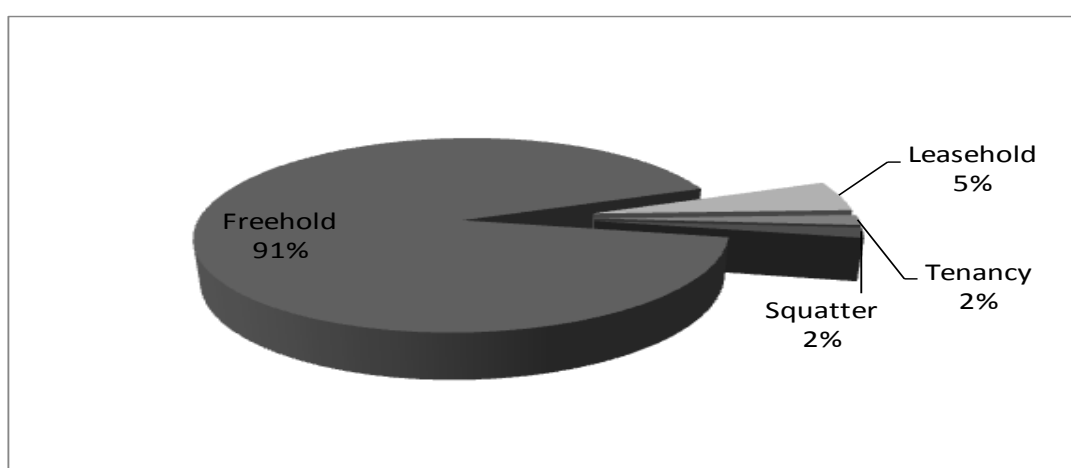

Figure 5: Land Tenure of the Respondents

4.2.6 Land Hire

More than half of the respondents (54.6 %) indicated that they hired in land for additional cropping to complement their small parcels as shown in figure 6. For those who hired in land, it was mostly used for growing maize and beans on it. Response on land use was that 30.0% used itfor intercropping of maize and beans while 10.8% used it exclusively for growing maize.
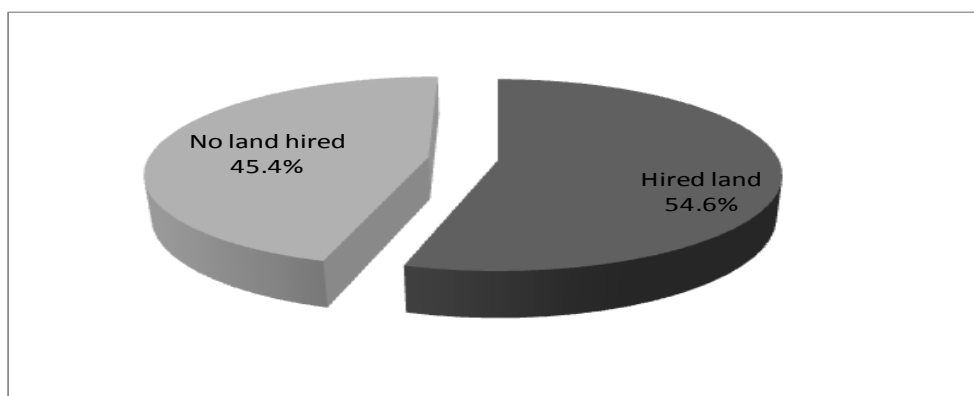
Figure 6: Land Hire for the Respondents

4.2.7 Main Enterprises for the various CIGs

Farmer groups within the study area were involved in a diversity of enterprises. Many of the respondents reported to be practicing maize production (19.2 %) and dairy (14.2%) as the main enterprises as indicated in Table 7. The choice of these enterprises was due to their suitability within the District as well the farmers' preferences. Other enterprises of choice included food crops, horticulture, livestock as well as non-farm based enterprises. The diversity of enterprises chosen by the farmer-groups is indicative of the great opportunities available that would be further developed into viable commercial undertakings to improve income of the poor farming households.

Table 7: Main enterprises for the CIGs

	Frequency	Percent
Goat rearing	9	7.5
Fish farming	1	0.8
Land buying	16	13.3
Horticulture	7	5.8
Poultry keeping	8	6.7
Weaving baskets	2	1.7
Necklaces	4	3.3
Maize production	23	19.2
Potato production	7	5.8
Brick making	1	0.8
Dairy farming	17	14.2

Merry go round	25	20.9
Total	120	100.0

4.2.8 CIG membership

The CIGs that were sampled for this study indicated a membership of between 11 and 40 farmers with majority (9 CIGs) having between 20-29 members representing 56.7% as indicated in Figure 7. For purposes of group management, this size of group was considered more effective as compared to very large groups.
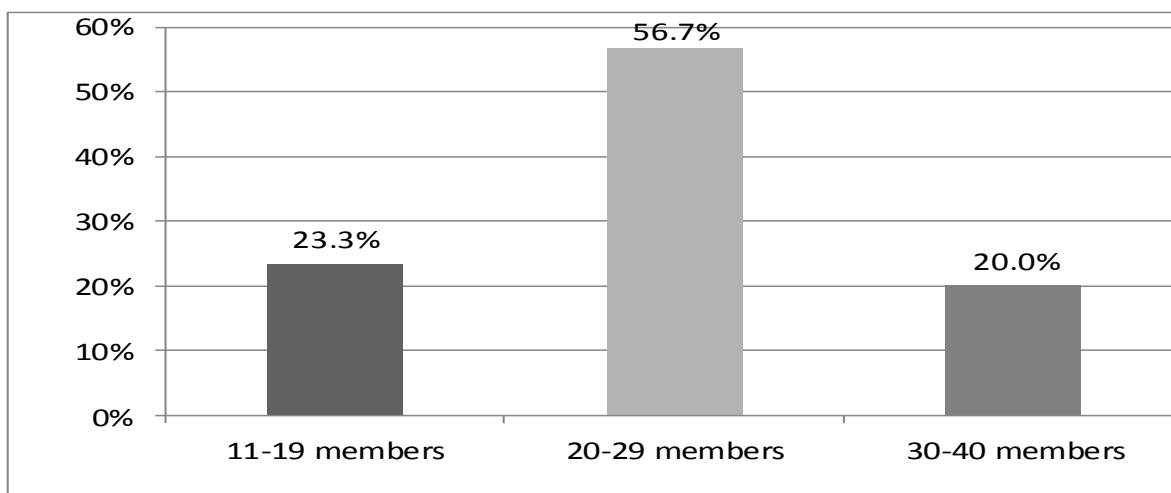
Figure 7: CIG membership

4.2.9 Age of the various CIGs

More than half of the CIGs (56 %) were less than 6 years old. They were formed towards the end of the NALEP phase I period as shown in Table 8.This observation is comparable to a report by NALEP (2007) on internal assessment that indicated that most of the farmer-groups (82.7%) had been in existence for two years by end of 2005. This is attributed to the fact that mobilization for the formation of these groups took some time before they were actually formed.

Table 8: Age of the CIGs

Age of CIG	Frequency	Percent
Less than 6 yrs	67	56.3
6-8 yrs	21	17.6
9-10 yrs	15	12.6
Over 10 yrs	16	13.4
Total	120	100.0

4.3 Findingsabout the Research Objectives

4.3.1 Level of CIG Performance.

The performance of that various CIGs sampled were analyzed based of the criteria set out in order to determine how they performed. A group performance index (GPI) was calculated and CIGs rated as low, medium or high in terms of their performance. Figure 11 shows the various levels of performance. In a range of 0-2.4, the study showed that 57.1 % of the CIGs studied had high performance while 25.2 % and 17.6 % had medium and low performance respectively.
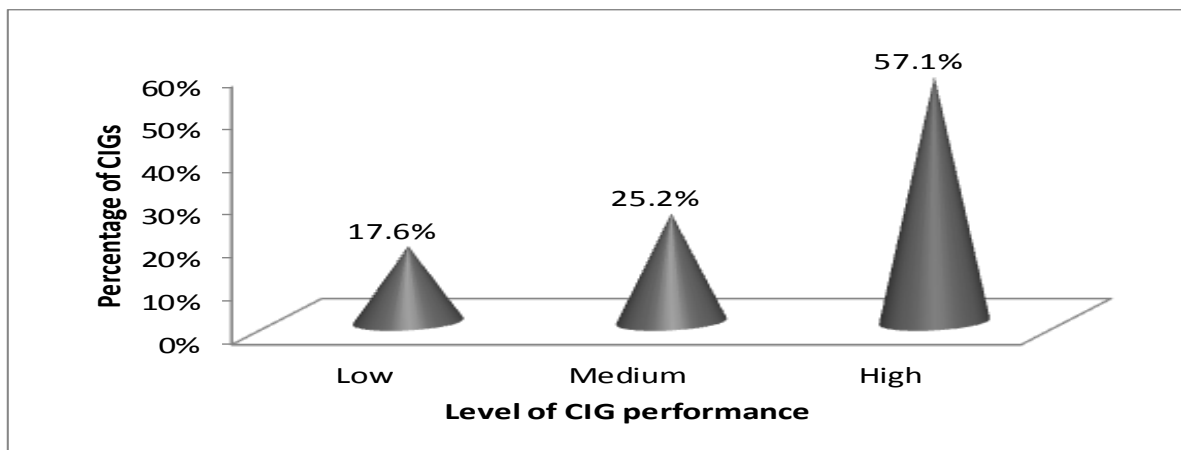
Figure 8: Levels of CIG Performance

The study was also able to rate the 15 CIGs that were assessed during this research in terms of their individual performance. Figure 12 shows how the various CIGs performed. The individual CIGs performed differently as a result of various institutional factors. The more successful CIGs are those that have higher levels of group cohesion, exhibit better group management skills and their members are more empowered.
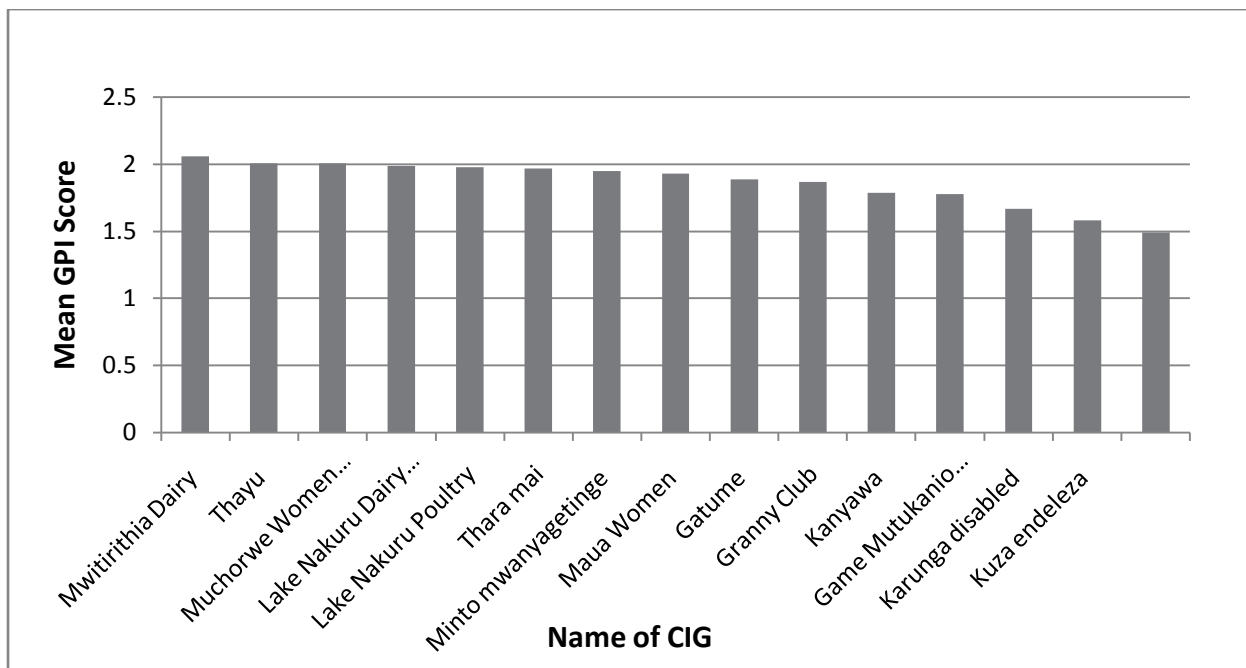
Figure 9:Individual CIG performance

4.3.2Objective One:Determine the influence of access to agricultural credit on the performance of CIGs of smallholder farmers in Gilgil Division of Naivasha District.

This objective aimed to establish the extent to which access to agricultural credit contribute to performance of CIGs among the smallholder farmers in Gilgil Division, Naivasha District. The attributes of credit that were investigated were availability, affordability and adequacy. This was compared to the performance of CIGs. The results indicated in table 9 show that there was a significant positive (ρ = 0.6124, P value= 0.001), relationship between the level of access to agricultural credit and performance of CIGs. This implies that part of the success of CIG performance among respondents were attributable to the availability of loans/grants. Since the correlation value is positive, it implies that most respondents who had received loans recorded a high CIG performance index and vice versa. This result is consistent with a similar study conducted by NALEP that showed that lack of credit accounted for 30 % of the reasons for non-adoption of agricultural innovations (NALEP, 2007). This same study identified the need for effective strategies to improving access to credits and farm inputs to be more urgent in Western, Eastern and Rift Valley than in Nyanza and Central provinces. In a panel study by TAMPA (2004) showed that households that received credit for maize produced a higher production averaging 7.65 bags per acre compared to 6.5 bags per acre for households that did not receive credit (Kibaara, 2006).

Table 9: Cross Tabulation of availability of loans and performance of CIGs

Availability	Performance of CIGs							
of Credit	Low		Medium		High		Total	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Did not receive credit	23	19.2	10	8.3	29	24.2	62	51.7
Received credit	3	2.5	18	15	37	30.8	58	48.3
Total	**26**	**21.7**	**28**	**23.3**	**66**	**55**	**120**	**100.0**

χ^2= 13.962   df =2   P value=0.001   Spearman rho;ρ=0.6124.

4.3.3 Adequacy of Credit.

In terms of adequacy of the loans received, respondents who participated (58) indicated they received loans ranging fromKshs. 1,000 to Kshs.30, 000 (79.3 %) while a small number (20.7%) received overKshs. 30,000 as indicated in table 10. Given that the enterprises were mainly small scale growing of maize and dairy keeping, this amount would be adequate to support the necessary production inputs required.

Table 10: Adequacy of Credit

Loan amount	Frequency	Percent
Kshs 1000-10,000	21	36.3
Kshs 10001-20000	14	24.1
Kshs 20001-30000	11	18.9
Over Kshs 30000	12	20.7
Total	**58**	**100**

4.3.4 Requirements for Accessing Loans

In terms of loan access, only 13percent of the 120 farmers could get loans without providing some form of collateral. Many of the respondents needed either a guarantor (55.6%) orcollateral (18.5%) to access the loans as shown in Figure 10. This poses a potential challenge to the implementation of farming initiatives as a business since it discourages many farmers who may not have collateral from accessing agricultural loans from lending institutions. This scenario therefore leads to reduction in the farmers' ability to exploit all the enterprises at their disposal.
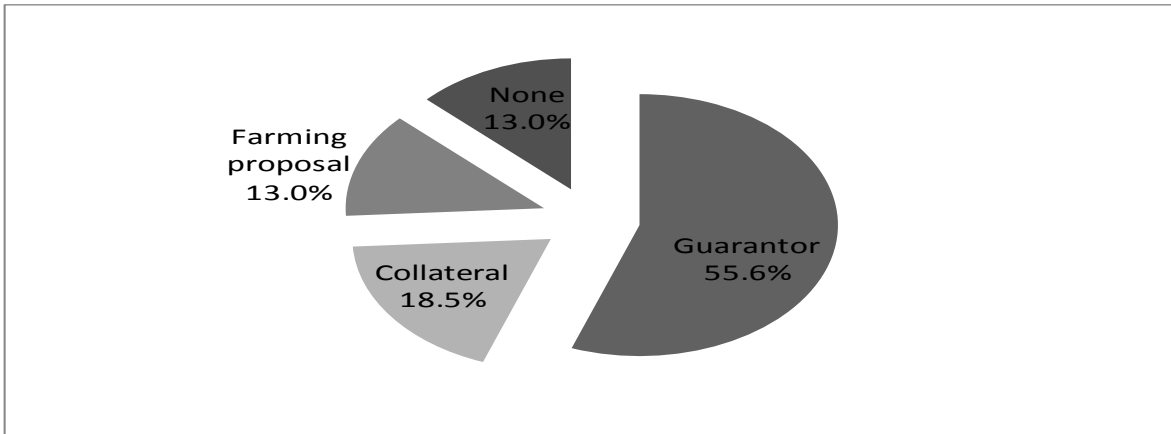
Figure 10: Requirements for accessing a loan

4.3.5 Testing Hypothesis One

Hypothesis one states that access to agricultural credit does not significantly influence the performance of CIGs of smallholder farmers in Gilgil division of Naivasha District. This hypothesis relates to objective one that has been discussed above. This hypothesis was tested at 5% level of significance. A Chi-square test was done to determine significant associations between the independent variables and the categories of CIG performance. A chi-square value of 13.962 was observed with 2 degrees of freedom with a p value of 0.001 was also obtained. Since the p-value =0.001 is less than the level of significance α=0.05 (χ^2 =13.962 >$\chi^2_{(critical)}$ = 5.99) we reject Ho$_1$ and conclude that there is evidence at α=0.05 to suggest that access to agricultural credit does significantly influence the performance of CIGs of smallholder farmers in Gilgil Division of Naivasha District. Further a spearman's Correlation Coefficient Rho=0.2124 whose Z-value=2.3214 with a p-value= 0.0203 was obtained indicating that there is a low but significant linear positive relationship between access to agricultural credit and CIG performance (0.21). These results are consistent with other literature (world bank,2003) that state that access to agricultural credit is an important aspect in determining success of farm enterprises by small holder farmers.

4.4 Objective Two: Determine the influence of access to commodity markets on the performance of CIGs of smallholder farmers in Gilgil Division of Naivasha District.

This objective aimed to establish the extent to which access to commodity markets contributed to performance of CIGs among the smallholder farmers in Gilgil Division, Naivasha District. The attributes of access to commodity markets investigated were adequacy and timeliness. This was compared to the performance of CIGs.

4.4.1 Access to commodity markets

The results indicated (as shown in Table 11) that there was a significant positive relationship($\rho=0.467$, P $=0.02$, $\chi^2 = 25.8$,) between access to commodity markets and performance of CIGs. This implies that success in CIG performance among respondents was attributed to timeliness and adequacy to commodity markets. Since the correlation value is positive, it implies that most respondents who had timely access to adequate commodity markets recorded a high CIG performance index and vice versa.

Table 11: Cross Tabulation of access to commodity markets and Performance of CIGs

Access to commodity markets	Performance of CIGs							
	Low		Medium		High		Total	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Market not available	16	13.3	16	13.3	14	11.7	46	38.3
Market available	7	5.8	14	11.7	53	44.2	74	61.7
Total	**23**	**19.1**	**30**	**25**	**67**	**55.9**	**120**	**100.0**

$\chi^2 = 25.87$ df=2,   P value=0.02   Spearman correlation coefficient =0.467

4.4.2 Availability of Commodity market

The study found out that there is a positive and significant (P=0.045) relationship between availability of commodity markets and performance of CIGs ($\rho=0.64$). More so, the study found out that majority of the farmers (75.5 %) sold their produce to brokers and not directly into the end markets as shown in Figure 11. This indicates that the farmers end up losing part of the value for their produce as this is earned by the brokers. This is a common practice among the farming communities where the farmers find it easier to sell their produce through brokers and not directly into the end market.
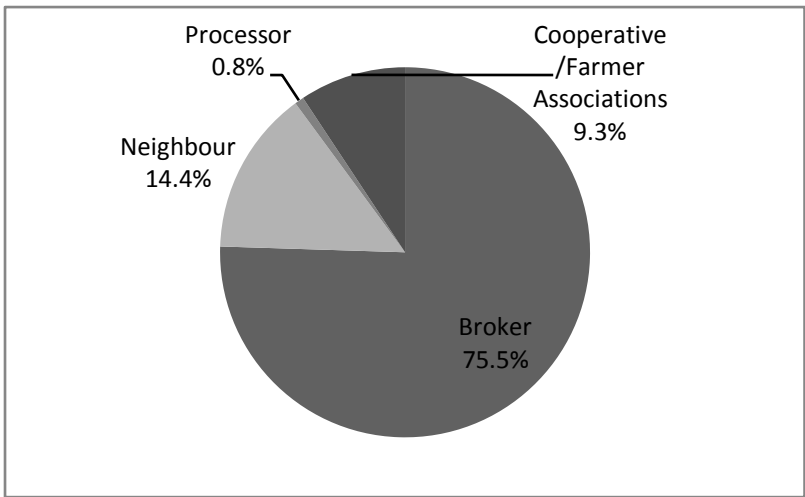
Figure 11: Source of markets for farm produce for CIG members

With regard to markets, the study found out that 72 CIG members (60.7%) had readily available markets for their commodities as shown in table 12.The study found out that this availability of market was because most of what is produced is consumed within the District. The few famers who do not have a readily available market for their produce then resort to store the produce or sometimes sell at lower prices. These results are comparable to a similar study that was conducted for honey producers in Mwingi District that showed that those farmers who were not in producer groups and hence did not have ready markets sold their produce at lower prices

(Musyoka, 2008).These results are also consistent with similar studies that have demonstrated that Public investment in agricultural extension is likely to foster adoption of improved technologies provided that output markets exist (Cunguara&Darnhofer, 2011).

Table 12: Availability of Commodity Markets

Availability	Frequency	Percent
Not readily available	48	39.3
Readily available	72	60.7
Total	120	100.0

4.4.3 State of Farm Produce Sold(Food crops and Milk)

The study found out that many of the farmers (69.2%) who sold their produce, did so as raw produce without any value addition to it as shown in table 13. This indicates that the farmers do not reap maximum returns from their unprocessed produce.

Table 13: State of farm produce sold

	Frequency	Percent
Sold raw	83	69.2
Sold Processed	34	28.3
Did not sell	3	2.5
Total	120	100

4.4.4 Storage of Produce

The study also found out that for those who could not sell their produce immediately, stored it. Table 14 shows that a large number of farmers (95.5 %) could store the produce. This storage is done until such a time when the demand for the produce goes up which in turn means achieving better prices for the produce.

Table 14: Proportion of farmers storing their produce

Storage	Frequency	Percent
Store	40	95.5
Value addition	2	4.5
Total	42	100.0

These findingsarein line with other studies (MoA, 2007) that concluded that access to agricultural markets and related improvements in rural infrastructure and marketing institutions are essential for adoption of new technology and transformation of subsistence-oriented smallholder agriculture.

4.4.5 Testing Hypothesis Two

Hypothesis two states that access to commodity markets does not significantly influence the performance of CIGs of smallholder farmers in GilgilDivision of Naivasha District.This hypothesis relates to objective two that has been discussed above. This hypothesis was tested at 5 percent level

of significance. A Chi-square test was performed to determine whether there are significant associations between access to commodity market and CIG performance.To test this relationship,a Spearman's Correlation Coefficient (SCC) was used. This gave the magnitude, direction and significance of the postulated influence of $\rho=0.68$ indicating a fairly strong link between the variables.A chi-square value of 25.87 was observed at 2 degrees of freedom with a p value of less than 0.0001.Since the p-value =0.0001 is less than the level of significance we reject Ho_2 and conclude that there is evidence from the sampled data at $\alpha=0.05$ to suggest that access to commodity markets does significantly influence the performance of CIGs of smallholder farmers in Gilgil division of Naivasha District. Further a spearman's Correlation Coefficient R=0.467 whose Z-value=5.510with a p-value of less than 0.035was obtained indicating that there is a significant linear positive relationship between access to commodity markets and CIG performance.

4.5.0 Objective Three:Determine the influence of access to training on the performance of CIGs of smallholder farmers in Gilgil Division of Naivasha District.

This objective aimed to establish the extent to which access to training contribute to performance of CIGs among the smallholder farmers in Gilgil Division, Naivasha District. The attributes of training that were investigated were usefulness of training, applicability of skills and timeliness of training. These were compared to the performance of CIGs. The results indicated that there was no significant relationship between access to training and performance of CIGs ($\chi^2= 0.742, p=0.690,\rho= 0.0765$) This implies that the success of CIGs in terms of performance among respondents was notsignificantly attributed to the provision of training by extension providers as shown in table 15.

Table 15: Cross Tabulation of access to training and Performance of CIGs

Access to training	Performance of CIGs							
	Low		Medium		High		Total	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Did not access training	1	0.8	1	0.8	1	0.8	3	2.4
Accessed training	20	16.7	30	25	67	55.9	117	97.6
Total	**21**	**19.1**	**31**	**25**	**68**	**55.9**	**120**	**100.0**

χ^2= 0.742   df =2   P value=0.690   Spearman correlation coefficient =0.0765

4.5.1 Usefulness and applicability of Training

The study however found out that the training provided by extension providers was useful (99.2%) and applicable (96.6 %)on their farms as shown in figure 15.
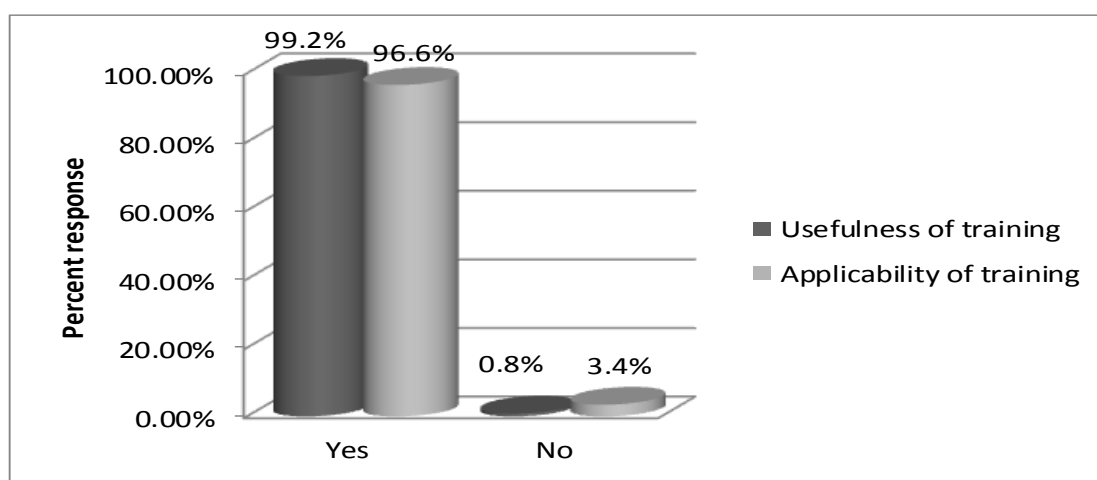
Figure 12: Usefulness and applicability of training

This finding is consistent with a similar one done in Mozambique by Cunguara and Darnhofer, (2011) and Walker *et al*., (2009), where it was found out that on average using an improved technology did not have a significant impact on the income of households in rural areas of central and southern provinces of Mozambique.

4.5.2 Testing Hypothesis Three

Hypothesis three states that: Access to training does not significantly influence the performance of CIGs of smallholder farmers in Gilgil division of Naivasha District. This hypothesis was also tested

at 5% level of significance. A Chi-square test was done to determine strength of associations between the independent variables and the categories of CIG performance.A chi-square value of 0.742 was observed at 2 degrees of freedom with a p value of 0.690.Since the p-value =0.690 is greater than the level of significance we fail to reject Ho_3 and conclude that there is no evidence at $\alpha=0.05$ to suggest that access to training does significantly influence the performance of CIGs of smallholder farmers in Gilgil division of Naivasha District.Further a spearman's Correlation Coefficient R=0.0765 whose Z-value=1.0070 with a p-value=0.3139 was obtained indicating that there is a no significant linear positive relationship between access to agricultural training and CIG performance. These results while indicating that agricultural training is useful, show that unless other types of institutional capacity building is done, farmer groups will not perform well just because they have been trained on various technologies as was the case with NALEP Phase one.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter focuses on the summary of major findings of the study, the conclusions reached, recommendations to be implemented and the areas that require further research.

5.2 Summaryof Findings

Various institutional factors play a role in determining the success of CIGs. NALEP was designed to facilitate some of these institutional factors which include access to agricultural credit, commodity markets, and training among others so as to improve the performance of CIGs. In spite of this, the performance of CIGs in NALEP focal areas within GilgilDivision has, however, remained low. Whereas previous studies done elsewhere had shown that there were associations between various institutional factors it was unclear which of these factors most strongly contributed to performance of CIGs. This study sought to determine the influence of three selected institutional factors on the performance of these CIGs with respect to the level of enterprise development, level of group cohesion, group leadership skills and level of farmer empowerment. The study used a causal comparative survey design with *ex-post-facto* approach. In total 120 small holder farmers were selected and interviewed across three focal areas in Gilgil Division where NALEP was implemented. The target population of the study was all the farmers in the SFAA CIGs within Gilgil Division.

With respect to the characteristics of the respondents, the study found out that majority of the farmers in this study area were middle aged, CIGs tended to have more female members as compared to men. The study also showed that over half of the respondents had upper primary school level of education and owned between 1-3 acres of land for their production. The study showed that 91 % of these farmers held freehold titles with the rest occupying the land as squatters, on leasehold or tenancy arrangements. Due to the limited land parcels available 54.6 percent of the farmers hired land that was mainly used to produce food crops (maize and beans). Farmers in the study area engaged in a wide range of enterprises that included horticulture, staple food production, dairy production as well as other non-farm enterprises like brick making and weaving. Many of the CIGs hadan average membership of 20-29, manyof them (56.3 %) having been formed in 2005.

The following key findings emanated from this research:

i) With respect to access to agricultural credit the study demonstrated that there existed a significant positive relationship between access to agricultural credit and performance of CIGs. This is in tandem with various other reports that relate to this subject. The ASDS 2010-2020 for example stipulates that to increase agricultural productivity and improve farming as a business, farmers need access to inputs and credit (GoK, 2010).

ii) With respect to access to commodity markets the study demonstrated that access to commodity markets contributes positively to the success of farmer groups and is the most important institutional factor among the three that were considered in this study. Farmers normally produce crops and livestock and livestock products for both consumption and sale. For those sold, they require markets that are both available and accessible. The study showed that these markets play a key role in the success of producer groups especially for small holder farmers.

iii) With respect to agricultural training, the study demonstrated that there is no significant relationship between access to training and CIG performance. While agricultural training provides farmers with information about cropping practices, optimal input use, high yielding varieties and other technologies, provision of this training alone will not facilitate the producer groups to be either successful or sustainable. This therefore calls for a shift away from just providing training on agricultural technologies to supporting farmers especially those in groups with the development of managerial skills, thus facilitating a shift to more efficient methods of production (Birkhaueuser*et al*., 1991).

5.3 Conclusions

Based on the findings of this study as summarized above, this study confirms that farmers groups are an important community structure that can be used by extension agents to bring positive change within the small holder farmers. A number of institutional factors however determine how these farmer groups will perform. The study confirms that access to commodity markets for agricultural produce and access to agricultural credit are key factors that determine the success of these farmer groups. The results of the study indicate that access to agricultural training does significantly determine how the farmer groups perform. As a result of these findings, the researcher draws the following conclusions;

i) Accessibility to agricultural credit to finance farm operations improves farm productivity especially for smallholder farmers. Farmers require capital in order to invest in farm inputs-fertilizer, seed and equipment as well as storage and post harvest handling.

ii) Accessibility to commodity markets plays a role in facilitating farmer groups earn income from the sale of their farm produce. The low performance of farmer organizations is associated in part with limited support to commodity market participation that determines how much incomes small holder farmers can make from the sale of their produce. Farmers join CIGs partly because they can be able to sell their produce through collective marketing which in a sense would help them to increase their earnings.

iii) Provision of agricultural training alone does not significantly contribute to the success of a farmer organization. This is especially so if the type of agricultural training provided largely focuses on the transfer of agricultural technologies.

5.4 Recommendations

In view of the findings from the study, the author offers the following recommendations:

i) There is need for the Ministry of Agriculture to design and deliver conducivecredit packages suitable for small holder farmers to enable them engage in farming as a business. These credit packages can be delivered through specific farmer friendly lending agencies including commercial banks as well as tailor made financial institutions.These packages must be designed in consultation with the farmers and the credit provider with the extension agents providing the link. These packages should be focused to the needs of various farmer groups across the country.

ii) In view of the fact that access to commodity markets is of critical importance to the survival and sustainability of farmer groups, it is important that NALEP through SFAA improves extensionservice provision so that a market led approach can be an in-built model for the extension service providers.The Ministry of Agriculture and all other organizations delivering extension services like NGOs and private companies need to develop and deliver this market led model. This will not only mean increased incomes for the smallholder farmers but will also help the country to realize food security since famers will be able to produce what is required in the market. Further, this will stabilize agricultural commodity prices within the country and the region.

iii) While the findings rejected the hypothesis on training it may have been due to how it is designed and or implemented. Agricultural technology transfer is important from the findings of other studies, it may be necessary that the Ministry of Agriculture together with all the other Ministries that provide extension services together with other NALEP like programmes re- evaluate how the training is conducted. There is need to put more efforts in aspects of capacity building especially with respect to governance, group dynamics, financial

management, resource mobilization and creation of market linkages as these will improve their managerial capabilities hence contributing to the success of these groups.

5.5 Suggestions for Further Research

From the findings of this research, and in the course of this study, a number of issues emerged that were not part of the purpose of this study and the researcher recommends that further research needs to be done on these areas. These include;

i)   This study focused on CIGs whose formation was facilitated by NALEP. A similar research that focuses on other smallholder farmer groups across the country in needed to investigate the extent to which institutional factors including those that were not part of this study influence their performance and particularly on the reasons for their creation and sustainability. This will further help inform policy on agricultural extension going forward.

ii) From the results of this study, access to commodity markets made the greatest contribution to total performance of CIGs. A further study be done to investigate the different forms of commodity marketing strategies that farmers can adopt to achieve improvement inthe performance of farmer groups among small holder famers.

iii) From the results of this study, access to agricultural credit also made a contribution to total performance of CIGs. A further study be done to determine the different forms of agricultural credit (farm inputs, cash, equipment or a combination) that have the greatest contribution to performance of farmer groups among small holder famers.

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APPENDIX A: QUESTIONNAIRE

Topic: "Influence of selected institutional factors on performance of Common Interest Groups (CIGs) of small holder farmers in Gilgil Division, Naivasha, Kenya."

Interviewer's name_____ **date**_____

You have been selected among other small holder's farmers to assist in providing information on the performance of Common Interest Groups (CIGs) in this area for educational research purposes. Please provide responses to the following items as directed.

SECTION A:
Farmer personal characteristics
1. Age of respondent in the years

Below 20 years   ☐   1

21 – 30 years   ☐   2

31 – 40 years   ☐   3

41 – 50 years   ☐   4

Above 51 years   ☐   5

2. Gender of respondent: Female ☐ 1   Male ☐ 2

3. What is your marital status (tick appropriately)

Married ☐ 1 Single ☐ 2   Divorced ☐ 3   Widowed ☐ 4

4. What is your educational level (in years) spent in school?

None (0)   ☐   1

Lower primary (1-4)   ☐   2

Upper primary (5-8)   ☐   3

Secondary (9 – 12)   ☐   4

Post secondary (> 12)   ☐   5

SECTION B: Social economic factors

5. How much land do you occupy ?

☐

1 acre		1
2-3 acres	☐	2
4-5 acres	☐	3
6-7 acres	☐	4
Over7 acres	☐	5

6. What is the land tenure for the land you occupy ?

Freehold	☐	1
Leasehold	☐	2
Tenancy	☐	3
Squatter	☐	4

7. Dou you hire any land ?

Yes ☐ 1   No ☐ 2

If yes, what do you grow on the hired land ?..

SECTION C: Common Interest Group (CIG)

8. What is the major enterprise for your CIG now?…………………………………..

9. What were the enterprises when you started the CIG ?...

10. What were the reasons for the change of enterprise to current one ? Tick appropriate box

Lack of Credit	In- availability of markets for produce	Lack of training	Insufficient technology

11. How many members does your CIG have ?<10.......11-19.......20-29........30-40.......... > 40….

12. How old is your CIG ?< 6 Year…….. 6-8 Years…….. 9-10 Years……….

Over10Years……..

13. (a) Does your CIG get support from any other service providers other than NALEP ?

Yes ☐ 1   No ☐ 2

(b)If yes, list them and the areas and the extent of their collaboration.

Stakeholder/service provider.	Area Collaboration.	Extent of collaboration.

		1 2 3 4 5
		1 2 3 4 5
		1 2 3 4 5
		1 2 3 4 5
		1 2 3 4 5

Key: 1=None,2 = Low, 3 =Medium, 4 = High ,5 Very high

14. (a) Has there been an increase in production levels of your major enterprise since you joined the CIG

Yes ☐ 1   No ☐   2

(b)If yes, state the production level before joining the CIG and after joining it.

Produce	Old production level	New production level	% Increase
Maize			
Milk			
Potatoes			
Other			
Other			

Institutional factors

15. Agricultural Credit
    a) Did you get any loan or credit for use in agricultural production ?

Yes ☐ 1   No ☐   2

(b) If yes, state the source of the loan/ credit

………………………………………………………………………………………….
(Commercial bank, Group members, Micro-finance institution, AFC, NGOs)

c) How much loan/credit did you get in Kshs ?

1,000-10,000   ☐

10,001-20,000   ☐

20,001- 30,000   ☐

Over 30,000 ☐

d) What do you require to be able to get a loan from a lending institution ?(circle one)

1= Guarantor;   2= Collateral;   3= Farming Proposal   4= None

16. Commodity Markets

   a) What did you sell from your farm ? ………………………..

   b) What quantity did you sell per year ? …………………………

   c) What price per unit ?...

   d) To whom did you sell ? Please circle appropriately.

    1=Neighbour;   2= Broker;   3= Co-operative/ Farmers Association   4= Processor

   e) How available are the markets ?

    1=Readily available;   2= Not readily available;

   f) When your produce is ready, can you sell it on time as raw produce ?

     Yes ☐   1   No ☐   2

    If no, what else can you do to the produce ?

     Store ☐ 1   Value addition ☐ 2

   g) What challenges if any do you face in marketing of your produce ?

   ………………………………………………………………………………………………….

   ………………………………………………………………………………………………….

17. Training

   a) Who provided agricultural training to you ?

    1= Neighbour;   2= NGO;   3= Ministry Staff   4= Processor/buyer;   5= None

   b) Was the training useful to you ?

     Yes ☐   1   No ☐   2

   c) Can the training you received be applied on your farm ?

     Yes ☐   1   No ☐   2

   d) State how the training helped you ?

   ………………………………………………………………………..

18. Common Interest Group Cohesion. Please indicate the suitable level for the following set of
   questions as they relate to your CIG.

Topic	1	2
Attendance to meetings	High	Low
Regularity of group meetings	Regular	Irregular
Sharing of ideas	High	Low
Sharing of resources	High	Low
How members express themselves	Open	Reserved
Level of personal relationships	High	Low
Members knowledge of group plans	Adequate	Inadequate
Level of social interactions	High	Low

Group Leadership and farmer empowerment. How could you rate the following aspects of your CIG. Please tick the most appropriate box.

Topic	1	2
Conflict resolution within the group	Good	Not good
Management of group finances	Good	Not good
Group governance	Good	Not good
Group has written constitution guiding them	Yes	No
Gender intergration	High	Low
Members ability to learn and implement new technologies	High	Low

19. Conflict resolution within the group. How could you rate the following aspects of your CIG. Please tick the most appropriate box.

Topic	Yes =1	No =2
Group members easily talk about any conflict within the group		
Group has laid down procedures to solve conflicts		
Members respect the decisions reached out of conflicts		
Conflicts arising from elections are solved as per constitution		

20. Group finances. The following statements relate to how the finances of your CIG are managed. Please state the extent to which you agree or disagree.

Key: SA – Strongly Agree; A – Agree; U – Undecided; D – Disagree; SD – Strongly Disagree

Topic	SA	A	U	D	SD
As members, we keep group funds in a bank account					
As members we are updated regularly on the state of finances					
As members we trust our leaders on money issues					
Our group finances are used for intended purposes					

21. What could you say are the benefits of being a member of a CIG ?

a) ………………………………………………………………………………

b) ………………………………………………………………………………

c) ………………………………………………………………………………

d) ………………………………………………………………………………

APPENDIX B: NAKURU COUNTY ADMINISTRATIVE BOUNDARIES[1]

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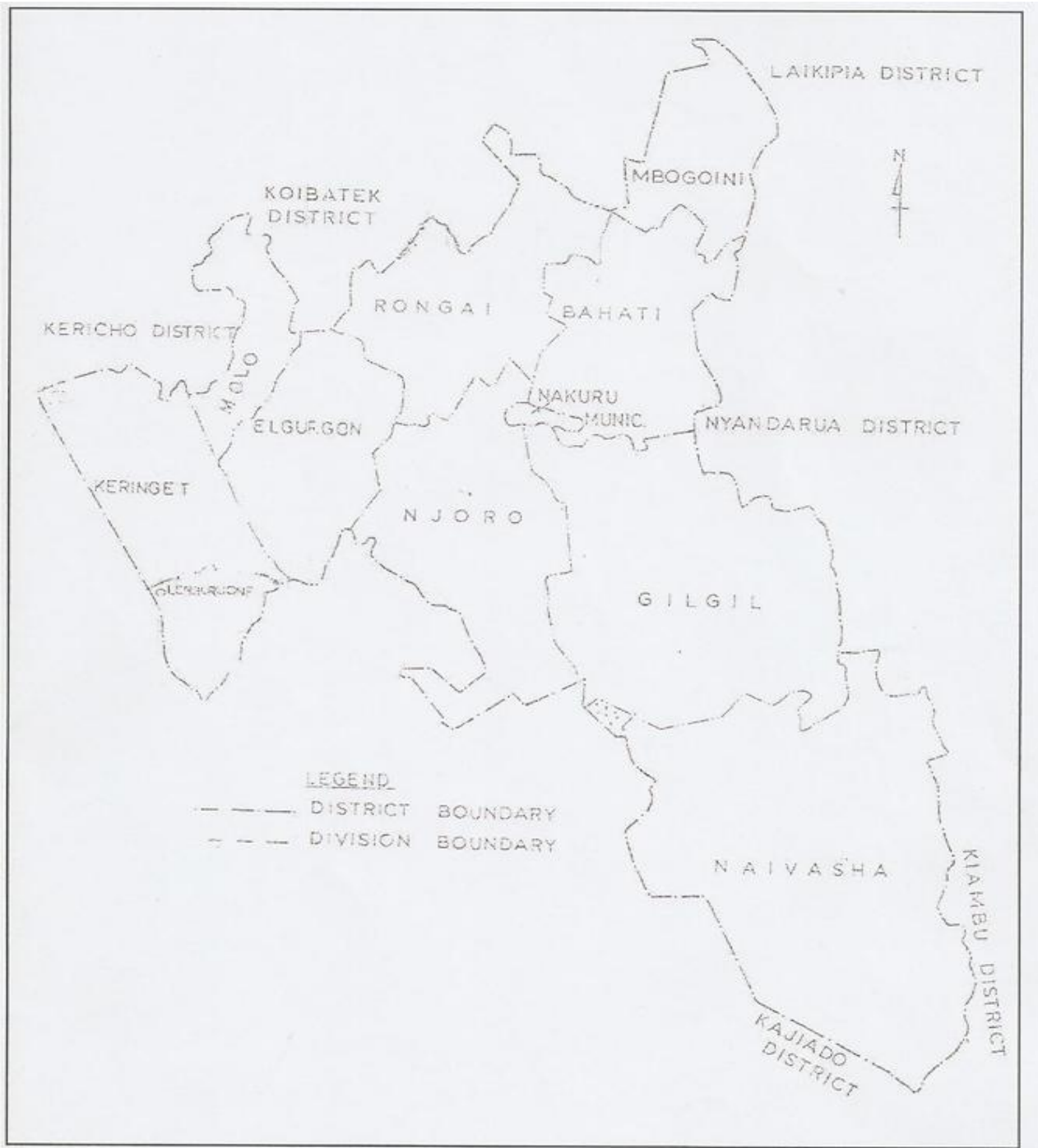
[1]GilgilDivision was curved out of NaivashaDistrict and is being elevated to District status.

APPENDIX C: RESEARCH AUTHORIZATION LETTER

REPUBLIC OF KENYA

NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

Telegrams: "SCIENCETECH", Nairobi
Telephone: 254-020-241349, 2213102
254-020-310571, 2213123.
Fax: 254-020-2213215, 318245, 318249
When replying please quote

P.O. Box 30623-00100
NAIROBI-KENYA
Website: www.ncst.go.ke

Our Ref: **NCST/RRI/12/1/AS-011/20/5**

Date: 26th May, 2011

Hosea Machuki
Egerton University
P.O Box 536
EGERTON- NJORO

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on "**Influence of selected institutional factors on performance of common interest groups (CIGs) of small holder farmers in Gilgil division, Naivasha district, Kenya** " I am pleased to inform you that you have been authorized to undertake research in **Naivasha District** for a period ending *31st July, 2011*.

You are advised to report to **the District Commissioner and the District Education Officer of Naivasha District** before embarking on the research project.

On completion of the research, you are expected to submit **one hard copy and one soft copy** of the research report/thesis to our office.
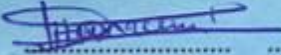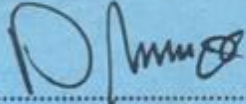
P. N NYAKUNDI
FOR: SECRETARY/CEO

Copy to:

The District Commissioner
Naivasha District

The District Education Officer

APPENDIX D: RESEARCH CLEARANCE PERMIT[2]

PAGE 2

THIS IS TO CERTIFY THAT:
Prof./Dr./Mr./Mrs./Miss. HOSEA MACHUKI

of (Address) EGERTON UNIVESITY
BOX 536 NJORO

has been permitted to conduct research in ....
....Location,
NAIVASHA ....District,
RIFTVALLEY ....Province,
on the topic INFLUENCE OF SELECTED
INSTITUTIONAL FACTORS ON
PERFORMANCE OF COMMON INTEREST
GROUPS (CIGs) OF SMALL HOLDER
FARMERS IN GILGIL DIVISION,
NAIVASHA DISTRICT, KENYA.
for a period ending............31ST JULY, 20....11....

PAGE 3

NCST/RRI/1/AS-011/20
Research Permit No.......................
Date of issue... 26/5/2011
Fee received... KSHS.1000

Applicant's
Signature

Secretary
National Council for
Science and Technology

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[2]Gilgil Division was curved out of Naivasha District to become GilgilDistrict and was sub-divided into Elementaita and Gilgil Divisions.