# Assessing Success Factors of Partnership Building and Rural Institutions Development amongst Smallholder Systems in East Africa

**By**

**Verrah Akinyi Otiende**
**Reg.No: Ag 332 – 1953/2010**

**Department of Horticulture**

**A dissertation submitted in partial fulfilment for the Degree of Master of Science in Research Methods in the Jomo Kenyatta University of Agriculture and Technology**

**2013**

# DECLARATION

## Candidate

This is my original work and has not been presented for the award of a degree in any University or any other award

Verrah Akinyi Otiende

Signature..... Date.....

## Supervisors

We confirm that the candidate carried out this work under our supervision

Dr Anthony Waititu
Statistics and Actuarial science department
Faculty of science
Jomo Kenyatta University (JKUAT)

Signature..... Date.....

Dr Joseph Tanui
Landcare Unit – East Africa Region
World Agroforestry Centre (ICRAF)

Signature..... Date.....

# DEDICATION

I dedicate this work to my husband David and daughter Mitchelle.

# ACKNOWLEDGEMENTS

I acknowledge the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM) and the World Agroforestry Centre (ICRAF) for jointly funding my research work and ensuring all the financial logistics were in place and timely for a successful study. I am grateful to Dr Joseph Tanui, Eastern Africa Region - ICRAF for facilitating this support at ICRAF during the research period. I also owe the success of this work to him for supervision and guidance throughout the study period. I owe much thanks to Dr Anthony Waititu, Department of Statistics and Actuarial Sciences, Jomo Kenyatta University of Agriculture and Technology (JKUAT) for supervising this work and his leading role in facilitating the academic requirements of this study at Jomo Kenyatta University. I thank my supervisors for their timely responses and being ready to discuss with me the work at frequent intervals. I thank Mrs Rose Onyango, the ICRAF EA regional administrator for hosting me at the centre during the study period. Through her facilitation, the centre supported my work by providing me with office space and access rights to the resources that were useful for desktop research, field materials and equipment. I thank Mrs Hellen Ochieng, the capacity development specialist at ICRAF for organising my graduate fellowship contract and taking me through the induction process of the centre. I also thank "Strengthening Rural Institutions" (SRI) project team for the support they gave me during the study period. I acknowledge the support of the community members from both Embu and Kapchorwa. They allowed me time to discuss with them freely. I acknowledge the support of my family during the period. Above all, I thank God for the opportunity, strength, and protection throughout the study period.

# TABLE OF CONTENTS

# LIST OF TABLES

# LIST OF FIGURES

# LIST OF APPENDICES

# ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| AHI | African Highland Initiative |
| CBO | Community based organizations |
| EA | Eastern Africa |
| FDA | Focal development Area |
| ICRAF | International Centre for research in Agroforestry |
| IFAD | International Fund for agricultural research |
| INRM | Integrated Natural Resource Management |
| IP | Innovation Platform |
| IUCN | International Union for the Conservation of Nature |
| JKUAT | Jomo Kenyatta University of Agriculture and Technology |
| KADLACC | Kapchorwa District Landcare Chapter |
| KaWRUA | Kapingazi Water Resource Users association |
| KFS | Kenya Forest Service |
| KMO | Kaiser Meyer Olkin |
| LG | Local government |
| MERECP | Mount Elgon Ecosystem Regional Program |
| MKEPP | Mount Kenya East pilot project on natural resource management |
| NAADS | National Agricultural Advisory services |
| NEMA | National Environmental Management Authority |
| NGO | Non – Governmental Organizations |
| NRM | Natural resource management |
| NUD*IST | Non-numerical Unstructured Data Indexing, Searching and Theorizing |
| NVIVO | NUD*IST Value In Value Out |

| | |
|---|---|
| PMC | Project Management Committees |
| RUFORUM | Regional Universities Forum for capacity building in agriculture |
| SPSS | Social Package for the Social Sciences |
| SRI | Strengthening Rural Institutions |
| UWA | Uganda Wildlife Authority |
| WRMA | Water Resource Management Authority |
| WRUA | Water Resource Users Association |

# ABSTRACT

The nature and form of collective action varies. It is contextually specific and may change over time. It arises when individuals jointly tackle constraints, make decisions and achieve outcomes with mutual benefit. Strong and vibrant smallholder groups do provide opportunities to the community to play a role in rural development and benefit from it. However, most of those groups do not have the capacity and ability to individually influence rural development. Linking groups across levels therefore, facilitates access to combined knowledge and leverages complementary assets. While there is emerging evidence of linkages amongst groups and associations that transcend individual group activities, more systematic information is needed on across level linkages, their reasons for success and possibilities for designing supportive policies. The main objective of this study was to examine factors which influence successful linkages among the smallholder groups. The study involved two already existing smallholder platforms in Embu county of Kenya and Kapchorwa district of Uganda. These platforms serves as multi-stakeholder linkages of smallholder groups, the local government as well as development partners with shared values of sustainability, stewardship, local ownership and involvement, profitability, adaptability and volunteerism. Focus group discussions (FGD) were conducted to obtain in-depth information on members' perception on the network performance. A five-level likert scale survey questionnaire was administered to sixty eight groups from the two platforms to quantify their perception on the networks' successes in terms of sustainable performance and benefits. Principal component analysis was used to extract indicators which define the dimensions that influenced the performance of the platforms. Weighting of the selected indicators was done using their factor loading values. Multiple regression analysis was used to fit the model of successful linkages. The results indicate that members' ownership, motivation, and leaders' commitment, skills and motives are the critical factors that have enabled the success and sustainability of these two platforms. The findings of this study are important for developing strategies for strengthening smallholder platforms through capacity development and information sharing

# CHAPTER ONE

# INTRODUCTION

## 1.1 Background

Collective action is defined as voluntary action taken by a group of individuals, who invest time and energy to pursue shared objectives and achieve common interests and goals (Olson, 1999; Meinzen-Dick and Di Gregorio, 2004; Markelova *et al.,* 2009). Working collaboratively to achieve sustainable improvements in rural poverty reduction and management of natural resources is a key objective for most smallholder groups (Narayan *et al.,* 2000; Uphoff *et al.,* 1999). It increases the groups' power and helps members to recognize connections between their individual issues. According to Lourenzani and Silva (2010), working collectively allows the acquisition of resources or capabilities that could hardly be achieved individually and also enables the participating agents the acquisition of valuable competencies. Bingen *et al.* (2003) argues that smallholder organizations provide important platforms for capacity building, information and innovation in rural agricultural settings. Markelova *et al.* (2009) consider smallholder organizations as institutional solutions to overcoming market failures and high transaction costs associated with market exchange in developing countries.

As groups begin to form relationships with other groups, they find that most issues are interrelated and are invariably linked to socio-economic issues. Lourenzani and Silva (2006) argue that smallholder groups, individually, depending on the characteristics of their units have demonstrated inability to meeting the growing market and technology demands, therefore cooperation between groups can ease funding or development of their capacities. Bebbington (2004) states that smallholder groups do benefit most from working collectively to protect and manage their resources. He further states that

smallholder groups provide an interface between the research and extension mandates and helps to understand the production and living conditions of the smallholders, to strengthen their accountability, and to generate farming system-specific practices. Poteete and Ostrom (2003) explain that collective action takes various forms including development of local institutions, resource mobilization, coordination of activities and information sharing. Oakerson (1992) further states that the purpose of collective action depends on which institutional level (operational, collective choice or constitutional level) and which social unit (individual, group, community, or intra-community)

According to Grossman and Hanlon (2011), smallholder groups are present in many facets of economic and social life, and in countries of all income levels. Smallholder groups range from common interest groups, seed growers associations, women's associations/clubs, micro-credit groups and cooperative societies to camp committees all of which have their own characteristics with specific objectives and services offered to the target households. These groups are either homogeneous or heterogeneous. Homogeneous groups are supportive groups of members with similar experience, values and have a higher internal cohesion because it is easier to know and monitor other members (Coulter *et al.,* 1999). Heterogeneous groups are competitive groups of members with diverse levels of education, values, knowledge and can achieve economies of scale, which is an advantage in marketing (Springfellow *et al.,* 1997). Both homogeneous and heterogeneous groups play different but complementary roles in rural societies. Whereas homogeneous groups are more inclusive, heterogeneous groups are more effective at moving the poor upward and potentially out of poverty (Uphoff and Krishna, 1999). Linking homogeneous and heterogeneous groups is important because of the impact it has on household livelihood strategies and as well as individual group

performance and outcomes. Some of the benefits of the linkage include: access to assets, sources of income, reduced vulnerability, mitigating adverse consequences of economic policies, civil strife and other external shocks. Members provide a lot of organizing ideas and resources through communication and networking with other organizations, hence forming partnerships, linkages and coalitions that make individual groups stronger. The ubiquity and growing importance of the linkages call for a better understanding of the critical factors that determine their effectiveness. The study therefore intends to provide recommendations on how to support smallholder groups with better networks and greater opportunities for innovation.

## 1.2 Statement of the problem

The success of any sustainable development programme is determined largely by the local-level solutions derived from community initiatives. Strong and vibrant smallholder organizations can provide opportunities to the community to effectively play a role in rural development and benefit from it. However, identifying and promoting authentic smallholder organizations that can empower a smallholder system is a big challenge. There is a need to design and support institutions at more than one level, with attention on power structure and interactions across scale from the local level up. More systematic information is needed on cross scale linkages, their reasons for success and the design of supportive policies. The study is motivated by the need to understand the critical factors of successful cross-scale institutional linkages. The findings are important in informing policy development for effective collaboration within local level organizations, designing sustainable local development initiatives and giving insights on factors for fostering collective action.

## 1.3 Justification

There is increasing evidence that local level organizations offer one way for smallholders to participate in rural development more effectively (Markelova *et al.,* 2009). Most of these evidences have been evaluated based on increase in household income, access to higher value markets and therefore greater income for smallholder farmers, growth of market opportunities (Warning and Key, 2002; Winter *et al,* 2005; Saigenji and Zeller, 2009). Acting collectively, smallholders achieve reduced transaction costs in accessing inputs and outputs, obtain necessary market information, secure access to new technologies and tap into high value markets among other benefits (Stockbridge *et al.,* 2003). Research in natural resource management has already demonstrated the advantages of collective action for technology adoption which ensures efficient, equitable and sustainable use of resources (Meinzen-Dick *et al.,* 2002). There is need to broaden the understanding of the attributes and perceptions that matter for successful and effective partnerships, linkages and coalitions amongst smallholder systems. The underlying purpose of this research is to understand the critical factors for successful partnership building and rural institutional linkages. This study is embedded within the broader research implemented by ICRAF, "Enabling rural transformation and grassroots institutional building for sustainable land management and increased income and food security" The results of the study will feed into the broader research that aims at building a process of strengthening rural grass-roots institutions to enable them act as effective interlocutors in natural resource management policy at local, meso and national level as well as adopt sustainable land management practices.

## 1.4 Research Objectives

### 1.4.1 General objective

To assess factors leading to successful and sustainable institutional linkages among smallholder groups

### 1.4.2 Specific objectives

i. To determine the factors that significantly influence successful and sustainable linkages across levels of local organizations
ii. To examine outcomes of institutional linkages against the backdrop of power relations
iii. To determine how the smallholder groups benefit in their own organizational growth and development from cross-scale institutional linkages.

## 1.5 Research questions

i. Which factors significantly influence successful and sustainable linkages across levels of local institutions?
ii. What are some of the outcomes of institutional linkages against the backdrop of power relations?
iii. How do the smallholder groups benefit in their own organizational growth and development from cross-scale institutional linkages?

# CHAPTER TWO

# LITERATURE REVIEW

## 2.1 Smallholder systems and collective action

Smallholder organizations are membership-based associations created by producers to provide services to their members (Matchaya, 2010). They differ from service non-governmental organizations, which provide services to producers but are not necessarily based on membership (Alsop *et al.,* 1996). In all rural societies, these types of organizations have an inward-oriented or 'bonding' function to facilitate collective action, mitigate the uncertainties of agricultural production and regulate relationships within the groups (Swanson, 2006). The forms these organizations take are very diverse. They exist for different purposes and everybody in the community is inherently a member of the groupings (Matchaya, 2004).

Smallholder groups can achieve economies of scale that overcome the high transaction costs that individual farmers usually face (Shepherd, 2007; Temu, 2009). Smallholder participation in associational activities is seen as a key indication of a socially healthy, engaged and equal society. Social capital is also credited with facilitating rural development (Anderson and Bell, 2003). It refers to social assets, either with respect to the source of investment or with the goods or services produced (Reimer, 2002), and can be treated either as stock (institutions) or flow (collective action) components as it encompasses the key features of trust and cooperation (Korsching *et al.,* 2001). The idea of smallholder systems and collective action is not new and continues to be advocated for by several policy makers, donors and practitioners as a valid development strategy, especially for sub-Saharan Africa (Bernard and Spielman, 2009; Toenniessen *et al.,* 2008).

## 2.2 Rural institutions development

In rural development, especially in agriculture and natural resource management, working with smallholder groups has become a popular strategy for most development organizations. Werhane *et al*. (2010) initiate their argument with an overview of the extent and distribution of poverty by pointing out that the poor are experts in the forces and processes that bind them into poverty and that they must be full partners in pursuing any solutions. It is widely acknowledged that the involvement of smallholders into rural development initiatives can contribute to higher productivity and income growth, which in turn can enhance food security, poverty reduction efforts and overall economic growth (Springfellow *et al*, 1997; Srinath *et al*, 2000, p. 558; Fafchamps, 2005; Barrett, 2008; Bernard and Spielman, 2009). Rural development programmes attempt to reconfigure structures of governance by emphasizing the development of rural areas' capacity to support themselves. This is done through capacity building, community based initiatives and partnerships which are considered as part of the solutions for poverty alleviation (Ray, 2000; Buller, 2000; Shortall, 1994).

## 2.3 Partnership building

Partnerships are modes of cooperation in which social actors involved share similar or compatible interests or objectives, as well as relevant strategies for which they put together required resources (Hounkonnu, 2002). Partnerships are also considered to be instruments for accelerating organizational learning and for coordinating communities of practice such as scientists, extension educators and smallholders (Samii *et al.,* 2002). Amudavi (2003) argues that as much as partnerships may not be a panacea for all the possible institutional problems, they provide strong leverage for improvement in institutional performance. As there is increasing realization of challenges ranging from

conventional approaches to agricultural and rural development, and growing demands for change, many individuals and organizations are working towards developing alternatives, through changes in practices, technology transfer processes, and policies (Pretty, 1995). These efforts have fused into formation of partnerships and collaborations for technology transfer process, which encompass more collaborative relations between external actors and smallholders, and new forms of interaction and learning (Amudavi, 2003).

As partnerships provide for local needs, they also facilitate the provision of services including; access to complementary capabilities, specialized skills, new suppliers and markets, coordination, and public support (Berman and West, 1995; Scott 2004; Carayannis *et al.,* 2000). Such provisions may be beyond the capacity of individual organizations. Through partnerships, organizations may enhance ownership and setting up of common goals and objectives, thus achieving economies of scale (Castillo, 1997). Partnerships are also important for building organizational capacity because they help develop leadership, build networks through stakeholder relationships, as well as share information, expertise, and resources (Halseth and Ryser, 2007) These therefore enable social actors to capitalize on the comparative advantage of each other hence increasing the efficiency of their roles (Zeigler and Hossain, 1995).

Partnerships lead to increased awareness about similar services in other places, access to educational opportunities, shared workloads, access to additional volunteer resources, and collaborative problem solving and decision-making (Deakin, 2004; O'Toole and Burdess, 2004; Pongsiri, 2002; Scott, 2004) thereby addressing complex needs by enabling communities establish links with external knowledge and resource sources

(Fesenmaier and Contractor, 2001). Partnerships also improve the legitimacy of the smallholder organizations which help to influence other community members through their pooled influence (Osborne and Murray, 2000). Partnerships provide a broader knowledge which ensures that rural and smallholder decision-makers get an equal opportunity to be better informed about possible options and choices (Halseth and Ryser, 2007). Increased knowledge can promote sustainable benefits to the local community such as self-reliance, self-determination, self-management and assertive form of self-organization (Kibwana, 2000); reduces information asymmetry among the partners and enhances joint creation of new knowledge (Koza and Lewin, 2000), which delivers local solutions to local problems and promotes social cohesion (Uphoff, 1996).

Partnership building is a core function for external actors working effectively in a network of innovation stakeholders. In a rural context, geographic isolation and the diseconomies of scale can make partnership building very attractive in order to maintain services (Asthana *et al.*, 2002). Within the context of global economic restructuring, rural places are considered to be more vulnerable than their urban counterparts (Halseth and Ryser, 2007). One of the causes can be identified in their economies which are less diversified and are affected by corporate public policy decision-makers in distant urban centres (Apedaile, 2004). Local government, and other public and private bodies, can facilitate the building of partnerships and networks by sponsoring public meetings, workshops, community forums, local committees or local advisory boards (Scott, 2004), and by developing policy that encourages collaborative decision-making (Van der Voort and Meijs, 2004). Local level organizations have felt encouraged by government policies to pursue partnership arrangements that require them to engage in activities considered

beyond their capability, scope or responsibility (McDonald and Warburton, 2003; Deolalikar et al., 2002).

Previous research suggests that partnerships are easy to maintain if there are sufficient human resources, reliable communication infrastructure, clearly defined common goals, and trust to conduct partnership activities (Asthana *et al*., 2002; McDonald and Warburton, 2003; Milbourne *et al*., 2003). Local networks and relationships can provide a foundation upon which linking social capital through non-local partnerships can be developed (Halseth and Ryser, 2007)

Bache (2010) argues that the most prominent effect of partnership building across different levels has been the development of regional structures in even the most centralized states. He further states that in terms of horizontal effects, the partnership instrument has generally advanced cross-sectorial engagement and interdependence in the structural policy process. Therefore, as much as research suggests that partnership has promoted a general shift towards multi-level governance, the nature and significance of these shifts vary greatly according to differences between (and sometimes within) domestic arenas.

## 2.4 Institutional linkages and smallholder platforms

Smallholder platforms are networks whose members are the smallholder groups and stakeholders from other organizations. These platforms are formed to represent the interest of their member organizations (Joe, 1995). Whereas relationships may play a role in certain situations, like smallholder groups each having specific tasks or specializations, linkages are the most common norm in most social networks (Belderbos *et al.*, 2009). There is increasing evidence in literature that a group's involvement in

inter-group linkages is important for its economic and innovative performance (Hagedoorn, 1993; Powell *et al.,* 1996; Ahuja, 2000; Owen-Smith and Powell, 2004). Institutional linkages enable organizations to access and combine external knowledge and to leverage complementary assets (Hagedoorn and Schakenraad, 1994; Powell *et al.,* 1996; Das and Teng, 2000). Institutional linkages are created in response to member organizations' needs in order to achieve a purpose. The purpose is usually to strengthen member organizations by acquiring resources, representing their interests in higher level decision making processes, or providing services which all of the members are interested in, but which they cannot individually provide (Ahuja, 2000). Institutional linkages encompass: multiple smallholder groups with varying expectations; greater distance between the problem the platforms focuses on and the felt needs of the member organizations; greater access to resources; greater access to markets; political processes and decision-makers among others. Carroll (1992) reiterates that the smallholder platforms that are most successful in their mission of supporting their member organizations are those that work with existing groups which had already acquired internal cohesion and external legitimacy.

Vertical and horizontal collaboration serve different strategic purposes, which carry varying implications for a group's strategic propensity to be engaged in each type of collaboration. Whereas vertical inter-group relations are seen as spanning differentiated organizations that combine symbiotically to achieve collective ends, horizontal inter-group relations span similar organizations that combine interdependently to achieve collective ends (Baum and Ingram, 2002; Tidd *et al.,* 2005). Vertical collaboration is generally considered to be particularly well suited for deepening existing competences (Tripsas, 1997; Brown and Eisenhardt, 1995). In this way, vertical collaboration offers

room for the build-up and strengthening of competitive advantage in core domains, such as new product innovations, reduced development time and efficiency gains. However, it is considered to be less well suited for the creation of new, state-of-the-art technology (Tidd *et al.,* 2005). For that purpose, horizontal collaborations are likely to be better equipped given their general focus on pre-competitive development of far-from-market technology with wider application potential (Hagedoorn, 2002; Belderbos *et al.,* 2006; Tether, 2002; Miotti and Sachwald, 2003).

There has been a growing body of literature on platforms that looks more broadly at their role not only in connecting and managing interfaces between multiple actors, but also in performing numerous functions in dynamic innovation processes (Klerkx *et al.,* 2009). Much has been written on the theory of innovation platforms (Hirvonen, 2009; Klerkx *et al.,* 2009) and the need for stakeholder collaboration (Critchley et al., 2006), less is known about how innovation platforms operate in practice and what they (can or cannot) achieve. Not much is known about the conditions under which these platforms trigger change. Learning how to build links and to encourage interaction between farmers, public research, advisory services, development organizations and the private sector is still a key challenge for operationalizing the innovation platforms (Sanginga *et al.,* 2009). While, most studies on platforms tend to focus on issues of platform formation, governance and management(Tenywa *et al.,* 2011), there has been little focus on understanding the functions of platforms as arenas for shaping the innovation processes and particularly their role as boundary spanning or intermediary actors (Klerkx *et al.,* 2010).

Analysis of linkages involves not only identifying which organizations and actors are linked with one another, but also identifying the reasons for those linkages and whether the linkages are beneficial or not. It also explores the conditions under which these linkages succeed in producing institutional outcomes favorable even to the poor.

# CHAPTER THREE

# METHODOLOGY

## 3.1 Study area

The study was conducted in two sites; Embu County situated on the eastern highlands of Kenya and Kapchorwa district situated on the eastern highlands of Uganda. These platforms are functional and have been considered successful in influencing collective action amongst smallholder systems.

### 3.1.1 Embu County – Kenya

Embu County occupies a total area of 708 Km2. It is along the slopes of Mt. Kenya forest which covers an estimated 230 Km2 of Embu. The rest of the area is under subsistence agriculture with agroforestry being widely practiced in many parts as a means of soil and water conservation to ensure sustainable land use. The predominant land use system in Embu is natural forest, tea and coffee in the upper midland zones, mixed small-scale cultivation of food crops, dairy cattle rearing as well as semi-extensive livestock production. Kapingazi river catchment with an area of 61.23 Km2 is part of the larger upper Tana River Catchment. It originates from Irangi forest (Gaciigi) downstream to Ngomano where it drains into river Rupingazi at the lower parts of Embu Town. It is located entirely within Embu district with major towns and settlements, such as Kianjokoma, Manyatta, Kiriari, and Kairuri which are located on the east and west boundaries of the catchment. Central parts of the catchment are mostly in agricultural and homestead use. Kapingazi river catchment area has a riparian platform comprising of diverse smallholder groups who benefit from the river. The platform was formed in 2004 as a sponsored initiative, its formation was mainly donor influenced and funded by the International Fund for Agricultural Development (IFAD) through the Mount Kenya East

Pilot Project on Natural Resource Management (MKEPP). As a way of facilitating community collective action and promoting participatory and sustainable local resource management, MKEPP delineated the catchment into five umbrella units called Focal Development Areas (FDA). The delineation criterion took into consideration the following; infrastructure, access to safe water, extent to environmental degradation, vulnerability to land degradation, presence of other development partners, food security, intervention areas where maximum benefit could be realized quickly, and existence of community organized groups. The main aim of the platform is to promote environmental conservation and improved agricultural practices through training and support to the smallholder groups in the catchment area.

### 3.1.2 Kapchorwa district - Uganda

Kapchorwa District is named after Kapchorwa, the main municipal, administrative and commercial center of the district, where the district headquarters are located. It is approximately 65 kilometers northeast of Mbale, the nearest large city. Subsistence agriculture is the main economic activity in Kapchorwa District. Crops grown include; millet, potatoes, beans, cotton, coffee, passion fruits, onions amongst others. Animal husbandry is also practiced; the livestock domesticated are mainly cattle, goats and chicken. In Kapchorwa District, an indigenous platform of smallholder groups was formed with a shared vision for integrated Natural Resource Management (INRM) - the Kapchorwa District Landcare Chapter (KADLACC). It serves as a multi-stakeholder platform for smallholder groups with shared values of sustainability, stewardship, local ownership and involvement, profitability, adaptability and volunteerism. The formation of KADLACC in 2003 was a culmination of three years of collective action and collaborative effort between farmer groups, Non-Governmental Organizations (NGOs),

local government, research and conservation organizations, and individual community members. KADLACC therefore is a district level innovation platform for linking livelihoods and conservation though strategies for increased access, control and stewardship of the elements of production among community members, including the vulnerable, poor and disadvantaged.

### 3.2 Materials and tools

The study had the following materials and tools: a) Audio recording device for recording the key informants interview and focus group discussions so as to have a more complete and accurate record for transcription into relevant information; b) Guide questions for key informant interview (appendix VI); c) Guide questions for Focus Group Discussions (appendix VII); c) Consent forms used by participants to confirm their approval for participating in the discussion and confidentiality of the information shared (appendix VIII); d) Evaluation forms for the participants to evaluate the discussion process (appendix IX); e) Sign-in sheets for participants registration (appendix X); f) Survey questionnaires for gathering quantitative data (appendix XI); and g) Note book for note taking.

### 3.3 Study design and data collection

The study was based on a case study research design of the two networks that are functional and have been considered successful in influencing collective action amongst smallholder systems. The main data used for analysis was obtained from primary sources through key informants' interview, focus group discussions with smallholder groups within each network and questionnaire surveys with groups within each network.

From each network, three community level networks were selected which represented the high-level, mid-level and low-level altitude areas. In Embu the community level networks are referred to as FDA. In Kapchorwa they are referred to as parish level IP. All these community level networks subscribe to the overall network together with other community level networks. Details of each of the data collection methods, data types and specific survey design are described in the relevant sections below.

### 3.3.1 Key informants interview

The study commenced with an exploratory phase which was mainly qualitative. Two key informant interviews were conducted – one for each site. The interview involved project managers and local government officials working for the project. This interview was done for rapid assessment and to gather information about the networks on characterization and performance of the groups involved within the network.

### 3.3.2 Focus group discussions

For each community level network in each site, three sessions of focus group discussions were conducted. The number of participants in each session was 9 persons. The three sessions consisted of: (1) three women groups; (2) three mixed groups; and (3) Project management Committees (PMCs). The groups that participated in the focus group discussion were selected randomly from a baseline data on group characterization that had been collected before the study. The focus group discussion was a way of learning about opinions, views, attitudes, and experiences of the groups on collective action within their networks. Key open-ended discussion questions were used.

### 3.3.3 Questionnaire survey

To obtain quantitative data, a questionnaire survey was administered to the groups in each network. It was developed using the information gathered from the focus group discussions with the aim of capturing interviewees' perception of critical factors for successful and sustainable networks. Selection of the groups was based on a two-stage stratified sampling procedure with a simple random sampling of groups after the second stage of stratification. A list of 159 groups for the two platforms was used to select groups that participated in the survey. Of the 159 groups, 84 were from Embu and 75 from Kapchorwa. In the first stratum, the selection was based on focal development areas for Embu and innovation platforms for Kapchorwa. The second stage of stratification was on group typology with consideration on mixed groups and women group. Using the random number generator, 68 groups were selected – 36 groups from Embu and 32 groups from Kapchorwa. Out of the 36 sampled groups from Embu, 8 were women group and twenty eight were mixed groups. Of the 32 sampled groups from Kapchorwa, 16 were women groups and the other 16 were mixed groups. The number of interviewees was three representatives per group and included 2 officials and 1 ordinary member. Answers to questions were based on consensus among interviewees. The sampled groups that participated in the survey were categorised into six functionalities, including: livestock groups – groups rearing dairy cows, goats, sheep, pigs, poultry, rabbit and other farm animals; crop farming groups – groups practising horticultural crops, banana farming, maize, cereals, fruit trees, tubers amongst other crops; user groups – water user groups and forest user groups; financial group – merry go round, table banking, and village SACCOs; conservation groups – waterway management groups, contour management groups, environment management groups; and commodity group –

collectively identify markets and sell their produce, e.g. marketing groups and trading groups. These groups were in three levels of groups advancement based on functionalities they carried out collectively. “Single” meant a group is practising only one activity, “Dual” implied that the group is practising up to two activities collectively, and “Multiple” meant that the group is practising three or more activities collectively.Table 1 shows the dimensions/ variables that were used to evaluate how successful the groups felt their network was in influencing and sustaining collective action. The dimensions were gathered from literature as factors that influence successful linkages of smallholder groups.

**Table 1: Dimensions for assessing successful networks**

| Dimensions | Critical aspects | Elements of success | Elements of sustainability |
|---|---|---|---|
| **Ownership (Castillo, 1997; Matchaya, 2010)** | • Members identification<br>• Services offered to members | • The network is created in response to common needs felt by affiliated groups<br>• The network defines its purpose in relation to members' needs<br>• Represents common interests in the group levels<br>• The network provides resources or services to the groups involved | • Develops a circle of mutual support between affiliated organizations<br>• Integrates but does not subordinate affiliated groups<br>• Supports and facilitates planning processes and institutional strengthening in the groups involved |
| **Member motivation (Zeigler & Hossain, 1995; Halseth & Ryser, 2007)** | • Multiple interests | • Status consensus<br>• Positive progress toward group goals<br>• Freedom to participate | • A sustainable network develops strategies, which permit simultaneous strengthening of the network and the groups involved, without threatening affiliated organizations |
| **Financial sustainability (Shepherd, 2007; Temu, 2009)** | • Cost of services<br>• Economy of mutual incentives<br>• Group investment into the network | • Records and accounts<br>• Level of transparency<br>• Awareness about interventions and access to resources<br>• Level of group contribution to projects within the network | • Economic sustainability is due to the support of affiliated organizations and to income generating processes controlled by the network<br>• The network uses efficient resource management systems.<br>• Network objectives are achieved at a reasonable cost |
| **Leaders commitment, skills and motives (Scott, 2004; Van der Voort & Meijs, 2004)** | • Distinguishing between leaders and owners | • Leadership styles (Authoritarian approach/ consensus approach) | • Leaders are motivated, skilled and committed to achieving the network's purpose<br>• Leaders represent the collective interests of the owners |

| | | | |
|---|---|---|---|
| **Leadership processes (McDonald & Warburton, 2003; Deolalikar, et al., 2002)** | • Leadership<br>• Participation<br>• Autonomy<br>• Communication and ownership | • Has the respect of its members and other organizations.<br>• Has the ability to bring together member organizations.<br>• Maintains communication with state and private institutions, and negotiates concrete yet flexible agreements which meet the goals of both parties. | • The network uses participation, transparency and communication processes to secure the legitimacy.<br>• Have transparent processes for changing leaders.<br>• Exercises democratic and participatory leadership.<br>• Has a structure of vertical participation that guarantees the flow of information, access to decision-making and distribution of benefits between the network and its members.<br>• Has well enlightened members. |
| **Organizational learning (Anderson & Bell, 2003; Amudavi, 2003)** | • Institutional memory<br>• Planning and group management | • Planning group activities<br>• Handling conflicts<br>• Meeting and information management<br>• Problem solving skill<br>• Overall performance | • A sustainable network has the ability to learn, evolve and gradually change. It can identify and develop the skills required to meet the demands which it generates itself. |
| **Networking (Carroll, 1992)** | • Clear strategic vision<br>• Flexibility | • Horizontal linkages within the network<br>• Vertical linkages within the network | • Uses outside support to further its strategic plan and negotiates agreements with collaborators to reach common interests.<br>• Defines roles which integrate each party's responsibilities and commitments into a shared work plan. Develops alliances with related social or productive sectors.<br>• Is active in centers of political and economic power, when appropriate to its objectives.<br>• Is flexible enough to meet the needs of its partners, yet preserve its own autonomy. |

## 3.4 Data analysis

### 3.4.1 Analysis of Qualitative information

Qualitative data that was gathered from key informants' interviews and focus group discussions was transcribed into the word processing document. The transcribed data was analyzed using the NVIVO 10 software - qualitative data analysis software designed to aid users in handling non-numerical and unstructured data. The process of analysis involved classifying, sorting and arranging the qualitative information into codes. The coded information was linked to meaningful analytical categories called nodes which were used for searching, retrieving and cross tabulating the data

### 3.4.2 Analysis of Quantitative information

Quantitative information was entered into the excel spreadsheet and analysis was done using Statistical Package for the Social Sciences (SPSS) version 16. The variables that were included were assessed through a 5 level likert rating scale. The scale was ordinal with the following description for the scale values; 1 – totally disagree, 2 – disagree, 3 – not sure, 4 – agree, and 5 – totally agree. The statistical process of analyzing the likert scale data involved; a) Unidimensionality analysis; b) Principal factor analysis, c) Reliability analysis, d) Weighting of the dimensional scores, e) Multiple Regression Analysis, details of each of the data analysis processes are described in the relevant sections below.

#### 3.4.2.1 Unidimensionality analysis

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity were used to determine unidimensionality of the indicators from which factors for structure detection were to be extracted. The KMO statistic indicated the proportion of variance in the variables that was as a result of the underlying indicators, high values

(greater than 0.5 close to 1.0) implied that factor analysis was useful with the data (Kaiser, 1974). Bartlett's test of sphericity statistic tested the hypothesis that the correlation matrix was an identity matrix, which would indicate that variables were unrelated and therefore unsuitable for structure detection, small values (less than 0.05 of the significance level) indicated that a factor analysis was useful with the data (Bartlett, 1950). These analyses were carried out in order to maximize the confidence that the resulting scales were valid for factor analysis (De. Vasu, 2002; Kidder, 1981)

#### 3.4.2.2 Principal component analysis

Principal component analysis was done to reduce the number of indicators in each variable into a set of significant indicators (Pett *et al.*, 2003). Indicators were retained by evaluating their construct validity and examining their structure or relationships within each variable. Process of factor extraction was based on the four key concepts of principal component analysis which were: a) Communalities; b) Pattern of factor loading; c) Explained variance; d) Factor rotation. The process was done separately for each site. The concepts are explained in details as follows;

**a) Communalities**

Communalities represent the proportion of the variance in the original variable that is accounted for by its indicator scores. For this study, the factor solution was considered when it explained at least 0.50 of each indicator variance; this implies that the communality value for each indicator was 0.50 or higher. In cases where the communalities were less than 0.50, the indicators were removed from the next iteration of the principal component analysis. The iteration was done until the communalities were satisfactory (0.50 or above) for all the indicators.

**b) Pattern of factor loading**

The pattern of factor loading was examined to identify if there are any indicators with complex structures. This was done by checking each indicator and identifying the ones with high loading (0.40 or greater) on more than one component (Hotelling, 1988). Indicators having complex structure were removed from the analysis and the extraction procedure was repeated. Indicators that loaded on only one component were described as having simple structures

**c) Explained variance**

Once the communalities satisfied the ">0.50" requirement and the factor loading did not have a complex structure the percentage of cumulative variance for each extracted component after rotation was obtained. Cumulative variance of 60% and above was considered adequate for the explained variation

**d) Factor rotation**

Factor rotation was done where more than one component were extracted. The main aim of factor rotation was to simplify and clarify the data structure. Factor rotation maximizes high item loading and minimizes low item loading, therefore producing a more interpretable and simplified solution. Factor loadings were used in weighting the scores of the likert scale.

### 3.4.2.3 Reliability analysis

The test for reliability was done using the Cronbach's alpha criterion, which explored the convergent validity and reliability of the indicators within each variable (Cronbach, 1951). Each variable with an alpha statistic greater than or equal to 0.6 was considered to have internal consistency of the indicators combined in the variable (Kidder, 1981). Testing for reliability was considered as a complementary procedure for assessing

whether each indicator in respect to the others reliably measured the variable under investigation. In situations where the alpha value was small, the "Cronbach's alpha if item deleted" column suggested which indicator to be removed so as to improve the internal consistency of the indicators. This ensured consistency amongst the indicators with the operating assumption being that if a set of indicators measured the same variable, then the responses to these indicators were correlated beyond the possible by random error or systematic error in the question design (Kidder, 1981).

### 3.4.2.4 Weighting of the likert scale data

The rationale behind weighting the scales was to moderate the problem of combining scores that are not equivalent. To ensure the contribution of each indicator was equivalent, each indicator scores was multiplied by its factor loading coefficient (appendix II). The weighted values for the variables were then obtained by summing the weighted indicator values for each variable. For this study, there were seven variables; therefore each weighted variable score was calculated as follows:

$$V_i = S_i * F_i$$

$$DS_j = \sum_{i}^{6} V_i$$

Where:

$S_i$ = Score of $i^{th}$ indicator

$F_i$ = Factor loading of $i^{th}$ indicator

$V_i$ = Weighted score for $i^{th}$ indicator

$DS_j$ = $j^{th}$ variable score

**j** = Variable, j = 1, 2, ..., 7

### 3.4.2.5. Multiple Regression Analysis

Multiple regression analysis was used to test the effects of the independent variables on the single dependent variable. The regression procedure is useful for modeling the relationship between a scale dependent variable and one or more scale independent variables (Draper and Smith, 1981; Weisberg, 1985). For this study, the process of regression analysis was based on the following concepts: a) Testing for sufficiency of sample size and level of measurement; b) Test for normality of the dependent variable; c) Test for linearity between the dependent and independent variables; d) Stepwise regression; e) Detection of Outliers; f) Assumption of independence of errors; g) Multicollinearity; h) Validation analysis; i) Overall relationship between dependent variable and independent variables. The concepts are explained in details as follows:

**a) Testing for sufficiency of sample size and level of measurement**

For this study, the ratio of valid cases to independent variables approach was used to determine if the sample size was sufficient enough to run the multiple regression analysis. The requirement for the minimum ratio of cases to independent variables was set at 5:1 which is the standard ratio. The preferred ratio of cases to independent variables was 50:1. If the sample size satisfied the minimum ratio but did not meet the preferred ratio then the data was subjected to validation analysis. Variables used in this study were checked if they satisfied this requirement.

**b) Test for normality of the dependent variable**

If the data satisfied the level of measurement and sample size requirement, then the next step was to check if the data conformed to the assumptions of multiple

regression; normality, linearity, and homoscedasticity. For this study all the variables were scale variables therefore only two assumptions were tested which are normality and linearity. For normality, Shapiro-Wilk statistic was used to determine if the dependent variable was normally distributed. Insignificant test (p-value > 0.05) meant that the actual data for the dependent variable fit the curve well (Shapiro and Wilk, 1965).

**c) Test for linearity between the dependent and independent variables**

Bivariate correlation analysis was used to determine if the relationship between the dependent variable and the independent variable was significant. Pearson product-moment correlation coefficient was used to reflect the degree of linear relationship between the dependent and independent variables. The correlation coefficients were tested for significance at 0.01; correlation coefficient values that had p-values less than 0.01 implied a significant linear relationship between the dependent and independent variables that were tested

**d) Stepwise regression**

Stepwise regression was used to find the most tightfisted set of predictors that were most effective in predicting the dependent variable. Predictors were entered according to their statistical contribution in explaining the variation. This regression approach uses the statistical criterion of maximizing the $r^2$ of the included predictors, one at a time (Velleman and Welsch, 1981). For this study the dependent variable "Successful linkages" was obtained as an aggregate of two variables which were used to measure it, these were "Organizational learning" and "Networking". The expression of the fitted model was as follows

$$\hat{Y} = \boldsymbol{b_0} + \boldsymbol{b_1 x_1} + \boldsymbol{b_2 x_2} + \cdots + \boldsymbol{b_5 x_5}$$

Where:

$\hat{\mathbf{Y}}$ = the dependent variable (Successful linkages)

$\boldsymbol{x}$ = the independent variables

$\boldsymbol{b}$ = the coefficient estimates

**e) Detection of Outliers**

Detection of outliers was done by computing standardized residuals for each case. Residual statistics output displayed the range of values within the standardized residuals. As a rule of thumb, a range of -3 to +3 was considered, and standardized residual values out of this range were declared outliers (Beckman and Cook, 1983).

**f) Assumption of independence of errors**

Multiple regression assumes that residual errors are independent and there is no serial correlation. Durbin Watson statistic was used to test for the presence of serial correlation among residuals. The values range from 0 to 4, and the residuals were not correlated if the statistic was approximately 2. The acceptable range is 1.50 – 2.50 (Durbin and Watson, 1971)

**g) Multicollinearity**

Using the stepwise regression, variable that displayed multicollinearity were not included in the model. Collinearity diagnostics was carried out using the tolerance value. In the analysis, examination of tolerance was done on the

excluded variables table. If the tolerance values for all the excluded independent variables were greater than 0.10, then multicollinearity was not a problem (Kutner *et al.*, 2004).

**h) Validation analysis**

Since the sample size met only the minimum requirement for the multiple regression analysis but did not meet the preferred ratio, a validation analysis was carried out. The validation was to check that the regression model for the 75% sample replicates the pattern of statistical significance found on the full data set. A 75% cross validation was conducted. A random number seed was defined. Uniform function, ***"RV.UNIFORM (0, 1)"***, was used to generate random decimal numbers from a uniform distribution with a minimum of 0 and maximum of 1. A new variable, ***"split variable",*** was computed whereby the random numbers were compared to 0.75. If the numbers were less than or equal to 0.75, then the value of the formula was 1 (which is SPSS equivalent to true), otherwise the formula returned a 0 (SPSS equivalent to false). From the validation analysis, the following statistic was compared between the validation sample and the full data set: $r^2$ value, Durbin Watson statistic, independent variables that were fitted in both models, and range of standardized residuals.

**i) Overall relationship between dependent variable and independent variables**

From the stepwise regression analysis that was performed, the best predictors of the dependent variables were identified. This was confirmed using the results from the ANOVA table that displayed the significant relationship between the independent variables and the dependent variable. The coefficient of association, r, was checked to see if the correlation between the dependent variables and the

independent variable was weak, moderate or strong. The rule of thumb as stated by Norusis (2004) was: $|r| < 0.20$ was very weak; $0.20 \leq |r| \leq 0.40$ was weak; $0.40 \leq |r| \leq 0.60$ was moderate; $0.60 \leq |r| \leq 0.80$ was strong; and $|r| > 0.80$ was very strong. The coefficient of determination, $r^2$, was used to interpret the goodness of fit of the fitted regression model. It calculated the proportion of variability in the data that was explained by the fitted model (Pierce and Schafer, 1986). An $r^2$ near 1.0 indicated that the regression line fitted the data well, while $r^2$ closer to 0 indicated that the regression line did not fit the data very well. The coefficient of determination was the overall measure of the usefulness of the multiple regression analysis in fitting the model.

# CHAPTER FOUR

# RESULTS

## 4.1 General information on group formation activities and growth

Smallholder groups in Embu indicated their main group functionality was in livestock farming (21/36 groups) and finance (17/36 groups). Smallholder groups in Kapchorwa indicated their main group functionality was in crop farming (22/32 groups) and conservation (19/32 groups). Figure 1 displays the group functionality per site against the number of groups

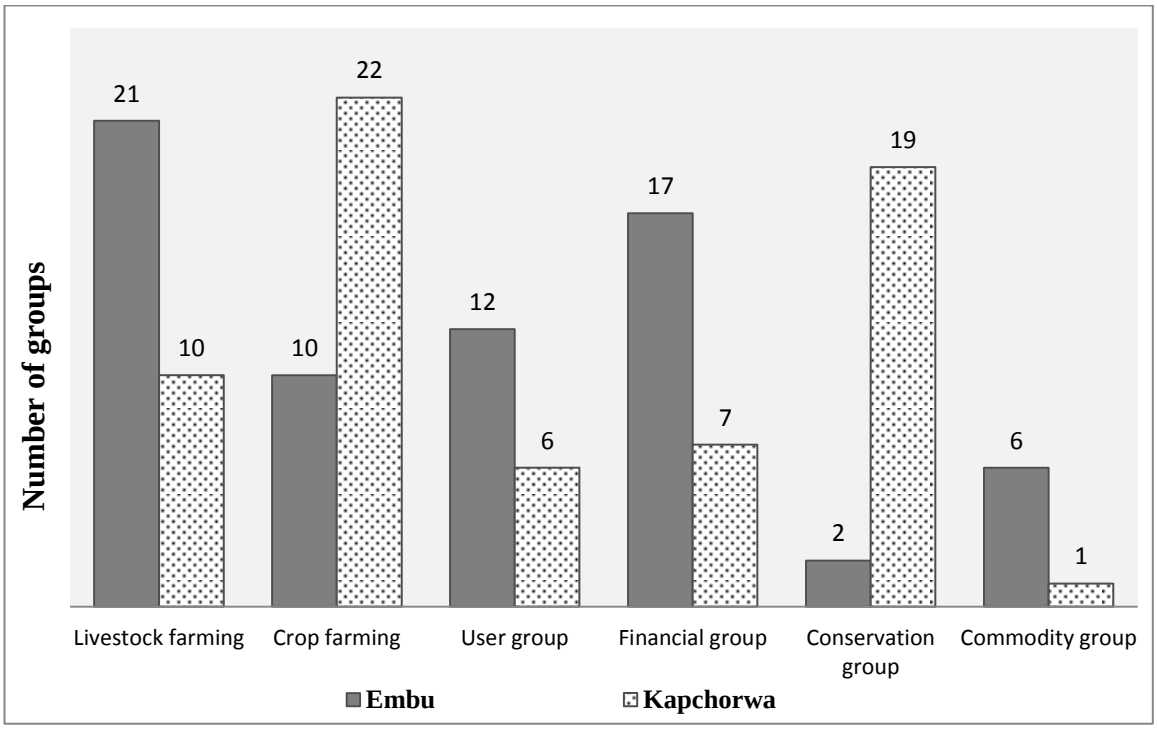


**Figure 1: Group functionality based on site**

Considering membership growth for the years the groups have been existing (Figure 2), Embu site had 19 out of 36 groups that showed decrease in group membership and 14 out of 36 indicating increase in group membership. In Kapchorwa district, 3 out of 32

groups indicated decrease in group membership while 20 out of 32 groups experienced increased membership.

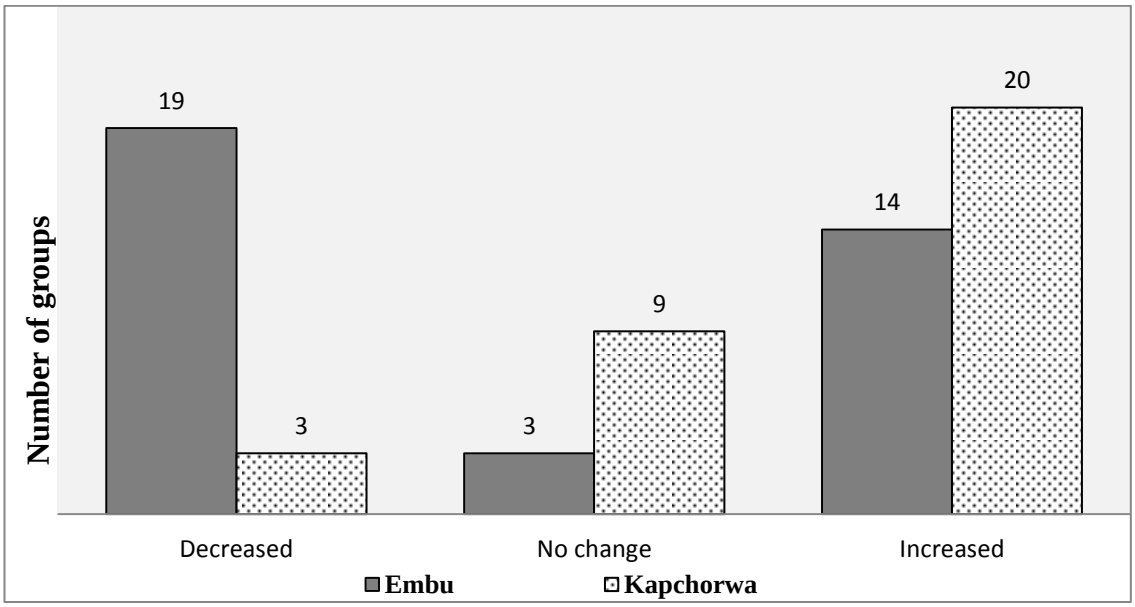


**Figure 2: Membership growth trend over the years the groups have been existing**

Figure 3 below displays number of members that left or joined the groups within the network, groups in Embu had 13 out of 36 groups losing more than 5 members and 11 out of 36 groups adding more than 5 members. Kapchorwa had 1 out of 32 groups losing more than 5 members and 18 out of 32 groups gaining more than 5 members

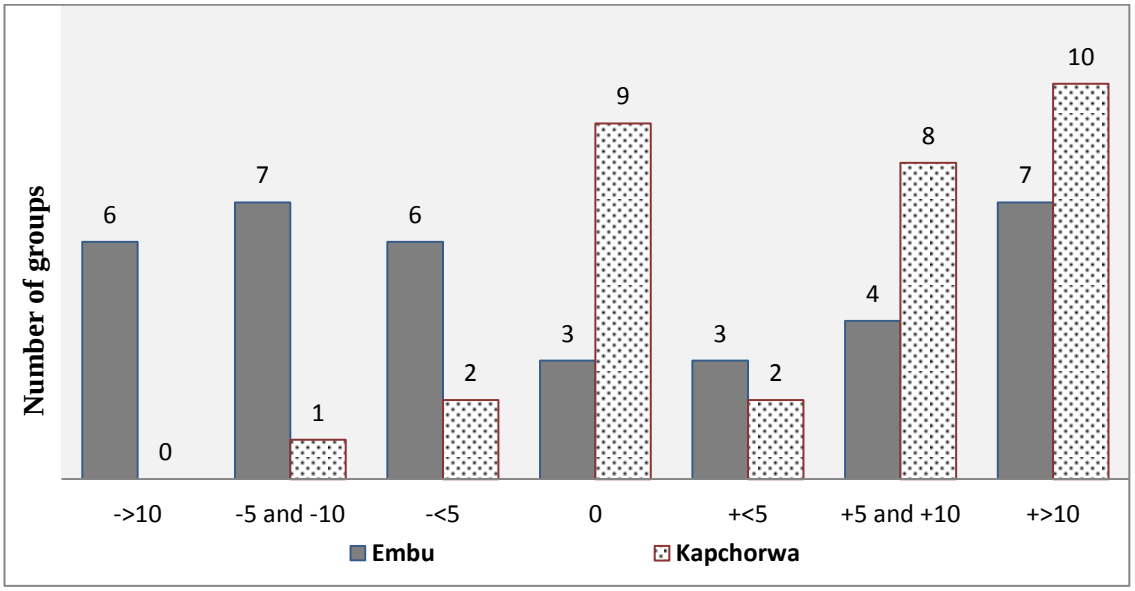


**Figure 3: Range of decrease and increase of group membership**

A proportion of 7 out of 14 groups in Embu and 14 out of 20 groups in Kapchorwa which indicated increased membership were formed between 6 – 10 years ago (Figure 4)

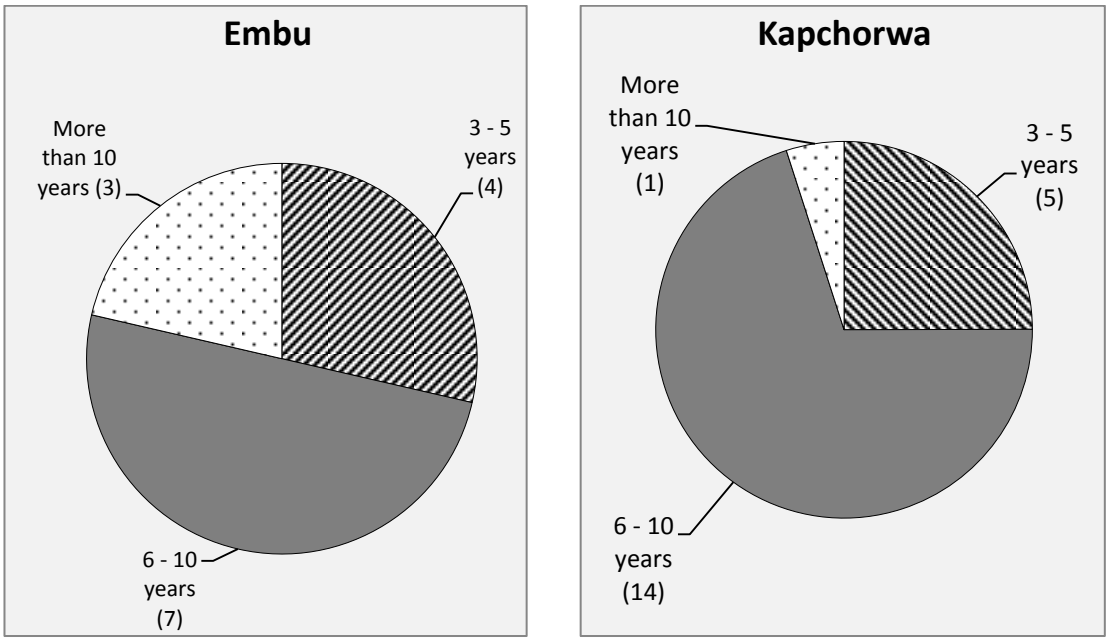


**Figure 4: Pie chart showing the range of years with the highest membership growth**

Twenty five groups out of the sixty eight that participated in the survey practised only one activity collectively. Code F had the majority of groups at 36%. Code A had the fewest groups at 8% (Table 2).

**Table 2: Single level of group functionality**

| Code | Activity | Count |
|---|---|---|
| A | Commodity group | 2 (8%) |
| B | Financial group | 3 (12%) |
| C | Conservation group | 3 (12%) |
| D | Crop farming | 4 (16%) |
| E | User group | 4 (16%) |
| F | Livestock rearing | 9 (36%) |
| | **Total** | **25 (100%)** |

Twenty three groups out of the sixty eight practised two activities collectively. Code I was the activity combination with the majority of groups at 31%. Codes A, B, C, and D had activity combination with the lowest number of groups at 4% (Table 3)

**Table 3: Dual level of group functionality**

| Code | Activity Combination | Count |
|---|---|---|
| A | Crop + Financial | 1 (4%) |
| B | Financial + Commodity | 1 (4%) |
| C | Financial + Conservation | 1 (4%) |
| D | Livestock + Commodity | 1 (4%) |
| E | User + Financial | 2 (9%) |
| F | Livestock + Crop | 3 (13%) |
| G | Livestock + Financial | 3 (13%) |
| H | Livestock + User | 4 (18%) |
| I | Crop + Conservation | 7 (31%) |
| | **Total** | **23(100%)** |

Twenty groups out of the sixty eight groups were at advanced level of group functionality, practising 3–4 activities collectively. Code M had the majority of the groups at 20%. Codes A, B, C, D, E, F, G, H, I had activity combination with the lowest number of groups at 5%. These activity combinations had crop farming, livestock rearing and user groups as part of their activities (Table 4)

**Table 4: Multiple level of group functionality**

| Code | Activity Combination | Count |
|---|---|---|
| A | Crop + Financial + Commodity | 1 (5%) |
| B | Crop + User + Conservation | 1 (5%) |
| C | Crop + User + Financial | 1 (5%) |
| D | Livestock + Crop + Conservation + User | 1 (5%) |
| E | Livestock + Crop + Commodity | 1 (5%) |
| F | Livestock + Crop + Conservation + Financial | 1 (5%) |

| | | |
|---|---|---|
| G | Livestock + User + Financial | 1 (5%) |
| H | User + Financial + Commodity | 1 (5%) |
| I | User + Financial + Conservation | 1 (5%) |
| J | Livestock + Crop + Conservation | 2 (10%) |
| K | Livestock + Crop + User | 2 (10%) |
| L | Livestock + Crop + Financial | 3 (15%) |
| M | Crop + Financial + Conservation | 4 (20%) |
| | **Total** | **20 (100%)** |

Figure 5 compares the percentage of group levels based on functionality whereby 36% of the groups that practised only one activity collectively were engaged in livestock farming/ rearing. About 24% of groups which engaged into two activities indicated livestock farming and crop farming as part of their activities and 28% of the groups that practised multiple activities had crop farming as one of their activities.

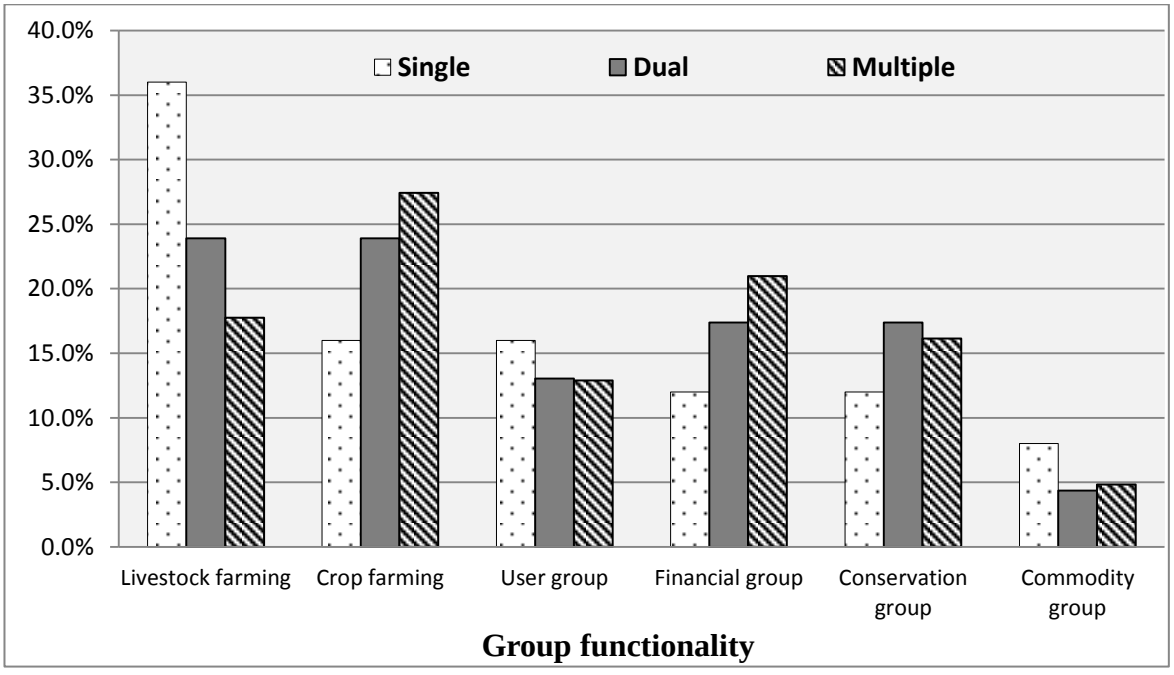


**Figure 5: Percentage of group level based on functionality**

Figure 6 displays the level of group functionality based on group typology, Single level of group functionality had 23 out of the 25 to be mixed groups, and multiple level of group functionality had 11 out of 20 groups to be women groups

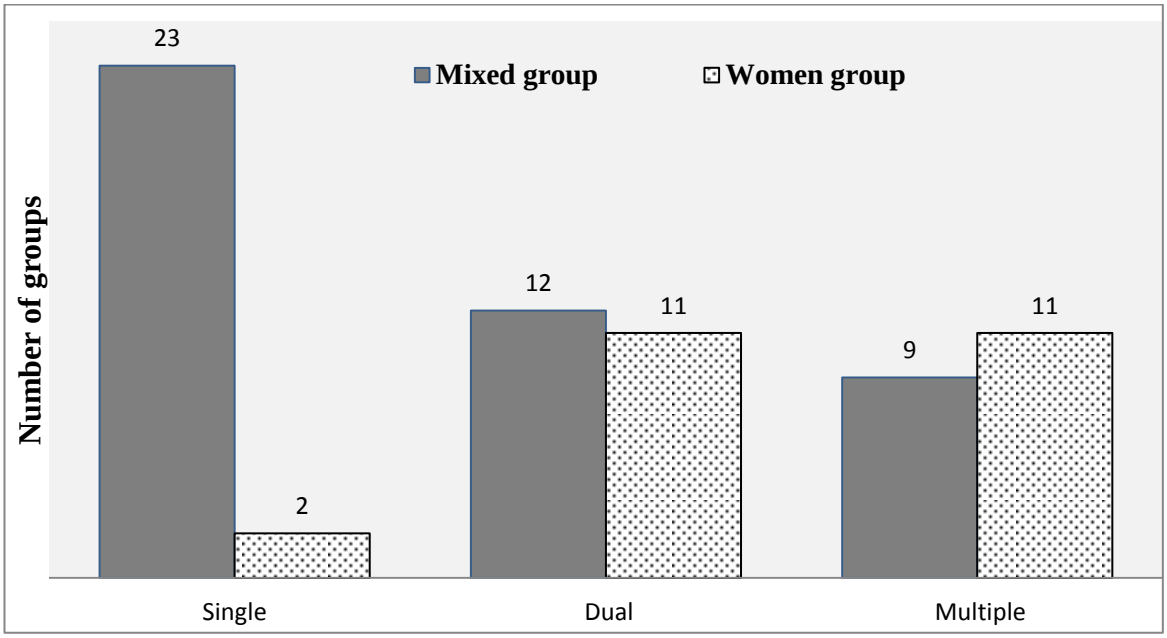


**Figure 6: Level of group functionality based on group typology**

At site level, Kapchorwa had 12 out of 32 groups under single level of group functionality, and 11 out of 32 groups at multiple level of group functionality. In Embu, 14 out of 36 groups were under dual level of group functionality, and 13 out of 32 groups were under single level of group functionality (Figure 7).

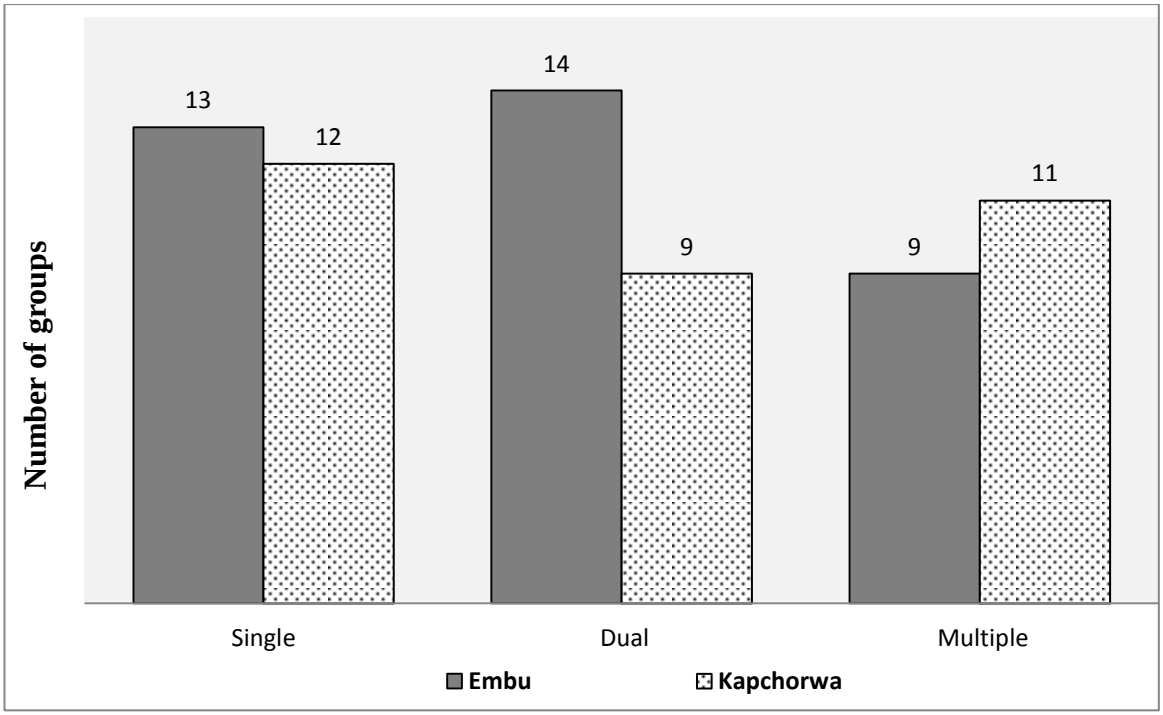


**Figure 7: Level of group functionality per site**

## 4.2 Statistical tests

The KMO measure of sampling adequacy and Bartlett's test of sphericity indicated that factor analysis was useful with the data that was collected (appendix I). The KMO statistic was greater than 0.5 for all the dimensions in both sites. The Bartlett's test of sphericity was significant (p value < 0.05) for all the dimensions in both sites. The cumulative variance gave the percentage of explained variation of each variable per site (appendix III). The lowest percentage being 60.2787% which was greater than 60% therefore was considered adequate percentage of the explained variation. The Cronbach's alpha value displayed values greater than 0.6 for all the variables in both sites. The trend of alpha when items were deleted was decreasing for most of the variables (appendix V)

The test for sufficiency of sample size indicated a ratio of approximately14:1. All the variables that were fitted into the model were scale variables. Test for normality of the dependent variable showed that the variable was normally distributed (Shapiro-Wilk = 0.267). Test for linearity displayed that the correlation was significant (Sig. (2 tailed) < 0.01) which implied a perfect linear relationship between the dependent and independent variables that were tested. Standardized residual values (Minimum = -2.5991, Maximum = 1.8414) indicated there were no outliers in the data. In testing for the assumptions of independence of errors, Durbin Watson statistic = 1.765 confirmed that there was no serial correlation among residuals. This implied that the residual errors were independent. Collinearity diagnostics showed that the minimum tolerance values for all the excluded independent dimensions were greater than 0.10, therefore multicollinearity was not a problem.

## 4.3 Factors that influenced the networks' success and sustainability

The five independent dimensions that were fitted in the model were; Ownership, Motivation, Leaders commitment & motives, Financial stability, and Leadership processes. Both the "Enter" and "Stepwise" approaches were used to fit the model. The constant was not significant for either approaches; not including it in the model raised the value of $R^2$. The p-value for ANOVA indicated that the combined effect of all the dimensions fitted was significant for both approaches (Table 5).

**Table 5: Model summary for the two approaches**

| Model Summary | | | | | |
|---|---|---|---|---|---|
| | **Model** | **No. of independent variables included** | **R** | **R Square** | **p-value for ANOVA** |
| Model with constant included | 1 | 5 | 0.76001 | 0.57762 | 1.5604E-10 |
| | 2 | 3 | 0.75940 | 0.57669 | 5.6006E-12 |
| Model without constant included | 1 | 5 | 0.98630 | 0.98521 | 2.7880E-57 |
| | 2 | 3 | 0.99312 | 0.98629 | 3.1638E-46 |

The "Enter" approach (Table 6) showed that two out of the five dimensions, were not significant. This implied that as much as the combined effect of the five dimensions was significant, the two dimensions could not individually explain the dependent variable. Table 6 below gives the summary of the model.

**Table 6: Estimated values of the variables fitted in the model using the Enter approach**

| **Model** | **Unstandardized Coefficients** | | **Standardized Coefficients** | **t** | **Sig.** |
|---|---|---|---|---|---|
| | **B** | **Std. Error** | **Beta** | | |
| Ownership | 0.4399 | 0.1889 | 0.2870 | 2.3289 | 0.0231 |
| Motivation | 0.8329 | 0.1712 | 0.3907 | 4.8666 | 7.948E-06 |
| Financial stability | 0.0433 | 0.2284 | 0.0267 | 0.1893 | 0.8504 |
| Leaders commitment skills and motives | 0.6285 | 0.1345 | 0.3251 | 4.6739 | 1.604E-05 |
| Leadership processes | 0.0003 | 0.1647 | 0.0002 | 0.0016 | 0.9987 |
| ***Dependent variable:*** | ***Successful linkages*** | | | | |

From stepwise approach (Table 7), three independent variables were fitted into the model; motivation, ownership, and leaders commitment skills and motives. The three independent variables were significant (p-value < 0.001).

**Table 7: Estimated values of the variables fitted in the model using the stepwise approach**

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| Motivation | 0.8364 | 0.1492 | 0.3924 | 5.6070 | 4.531E-07 |
| Ownership | 0.4767 | 0.0426 | 0.3110 | 11.1876 | 8.500E-17 |
| Leaders commitment skills and motives | 0.6314 | 0.1308 | 0.3266 | 4.8283 | 8.717E-06 |
| ***Dependent variable:*** | ***Successful linkages*** | | | | |

The overall relationship between the dependent variable and the independent variables within the model (***Successful linkages = 0.8364*Motivation + 0.4767*Ownership + 0.6314*Leaders commitment)*** indicated that the correlation between the variables was statistically significant and the regression line fitted the model well ($|r| = 0.993$; $r^2 = 0.986$; p-value < 0.001).

## 4.4 Positive outcomes of the networks against the backdrop of power relations

Indicators of positive outcomes against the backdrop of power relations were prepared based on the perceptions of the groups. Most of them were chosen in conformity with the design principles for collective action to sustain (Ostrom, 1990). Twelve common indicators were tested for significance difference between the two sites (appendix IV). From the t-test analysis, indicators that were significantly different were obtained. Table 8 shows indicators that were incorporated into the analysis, both the significant and not-significant.

**Table 8: Indicators for assessing power relations within the networks**

| Indicator | Description |
|---|---|
| O3 | The network represents common interests in the group levels [a] |
| O5 | Through the network the groups have been able to develop a circle of mutual support [a] |
| O6 | The network supports and facilitates planning processes and institutional strengthening with the groups involved [a] |
| M3 | The network carries out its activities and functions based on interests of the member organizations [a] |
| M4 | Responds to real and felt needs of member organizations [a] |
| LM2 | Leaders represent the collective interests of the owners [a] |
| LM5 | The network ensures workload is distributed adequately amongst the leaders [a] |
| F1 | The network maintains records and accounts [a] |
| F2 | The network enhances transparency to the smallholder member groups [a] |
| LP3 | Maintains communication and negotiates concrete yet flexible agreements which meet the goals of both parties [b] |
| LP4 | Have transparent processes for changing leaders [a] |
| LP5 | Exercises democratic and participatory leadership [b] |
| Significance level = 95% | [a] Significant [b] Not significant |

From the t-test analysis, the network in Kapchorwa dstrict had potentially higher levels of institutional success as compared to the network in Embu County. Indicators that displayed significant difference were plotted on line graphs with down bars to display the mean difference. Figure 8 below displays the mean difference between the two sites. It was much greater for LM5 (Mean diff. = 1.1445) and relatively smaller for O6 (Mean diff. = 0.3221)

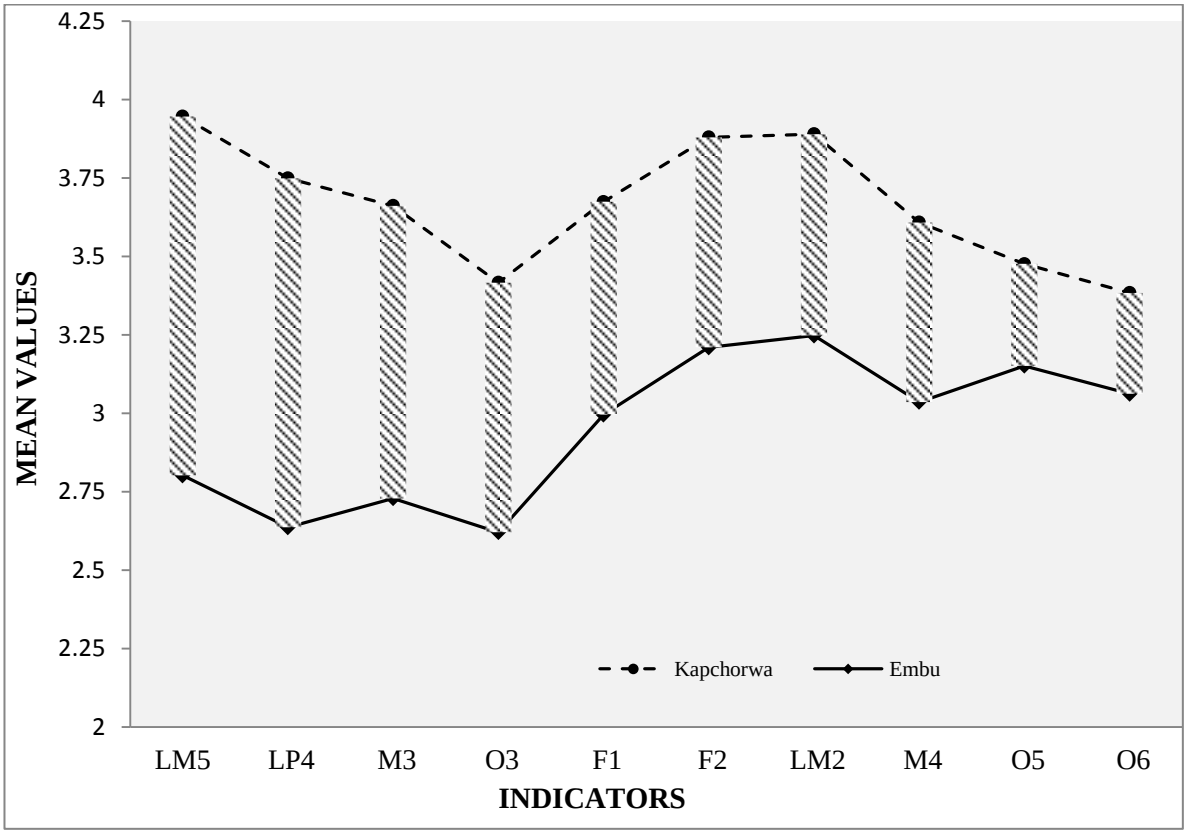


**Figure 8: Down bars displaying mean difference between sites**

## 4.5 Benefits of the network to the organizational growth of the member groups

Groups that participated in the survey indicated benefits that they had gotten as a result of their network. These benefits included accessing inputs and outputs; clear communication strategies that enhanced participation, improved income, improved nutrition, increased farm production, secure access to new technologies as well as efficient, equitable and sustainable use of resources. Table 9 displays some of the responses. The inductive categories show the classification of responses to the open ended questions. The values in brackets are the number of FGD sessions that the responses were mentioned. The participants' responses are the responses that were mentioned more than six times.

**Table 9: Categorization of responses to the open ended questions**

| Inductive categories | Participant responses (n = 18) |
|---|---|
| Improved livelihood | 1. We have seen our income from farming activities increase because we have been practicing better farming systems using the skills we obtained from the trainings we have gone. We are able to support our families comfortably (10)<br>2. At household level we have increased farm produce, both crops and animal products where we get surplus to sell. This has helped us pay school fees for our children (10)<br>3. We have been able to get manure from our improved breed which we have used in our farms so as to improve soil fertility which has also improved the yield of coffee and bananas(9)<br>4. The Napier grass we use for controlling soil erosion also helps as animal feed, which has improved the health of our animals and they produce very healthy offspring (7)<br>5. Some of the community members have been involved in the unskilled labor for the project activities which we consider as job creation opportunity (6) |
| Learning approaches | 1. We have gone for exchange tours to other districts and seen what other smallholder groups practice (10)<br>2. They called us for meetings where we were trained and we gained more knowledge and skills then we return to our groups and train other group members (10)<br>3. We have been able to compare and learn from one another and have seen on the ground how implementation of the initiatives has assisted the groups to move on. (9) |
| Participation | 1. We feel nice working together with one another and our families are very comfortable, happy and supportive with us being in these groups (9)<br>2. We have acquired knowledge and skills on how to dig trenches and site contours for controlling soil erosion. We invest most of our time and assets to the maximum as well as get capacity building from our stakeholders. They have ensure that groups are involved in as many seminars as possible that will help them grow and improve their group performance (7) |

| | |
|---|---|
| Positive progress towards group goals | 1. The network has implemented worthy activities like irrigation, planting of trees, tree nursery management as well as ways of improving food production, which have really benefitted the groups as well as the community (14)<br>2. The network facilitated trainings which equipped us with knowledge and skills on conservation including digging trenches, harvesting water and planting trees (8)<br>3. Follow-ups with the groups involved in the project are done after every three months. These follow-ups help to know if the group members who attended the trainings shared with other group members and if the implementation is being done in the right way (8)<br>4. We have recruited new members from the community into our groups because they were happy with the activities we are doing collectively and they have also seen the benefits (7)<br>5. We as one of the founder groups are initiators of conservation by laws that we are now trying to scale out to cover the whole district since it succeeded in our area of operation (4) |

# CHAPTER FIVE

# DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

## 5.1 Smallholder groups in Embu

In Embu majority of the groups in the network are mainly engaged in livestock rearing and financial activities. As a common practise by the groups, improved dairy livestock were mostly reared because of the immediate benefits like milk, manure and ready market, as well as the ease and cost effectiveness of managing them. Financial groups were also very common because the groups could easily lend the members money as loans to help them in buying farm inputs and other needs like paying school fees, which is repaid with affordable interest rates over a given period of time. These finding agrees with that of Shepherd (2007) and Temu (2009); where they argue that collectively, smallholder groups can achieve economies of scale in their production activities and command better market access. According to Anderson and Bell (2003), smallholders' engagement into associational activities is a key indication of a socially healthy and equal society.

Majority of the groups within the network were at dual level of group functionality. From the groups that participated in the study, membership growth over the years the groups have been in existence was mostly with the groups that had been in existence for between 6 – 10 years. Information gathered during the focus group discussions indicated that membership growth was experienced largely when the groups were already involved in the network activities. This implied that by joining the network the groups became visible and other community members became interested and joined the groups. Therefore the network influenced the building of organizational capacities of the member

groups through coordination and access to complementary capabilities (Berman and West, 1995).

## 5.2 Smallholder groups in Kapchorwa

In Kapchorwa the groups within the network were mainly engaged in crop farming and conservation practises. This is because the district is situated at the slopes of Mt. Elgon and they frequently experienced soil erosion which affected their farm produce because of unfertile soils and also led to food insecurity. For conservation they mainly practised contour siting, digging of terraces and planting of Napier grass along the contours to stabilize them. They also planted several trees species that are environmental friendly along the river beds so that their rivers do not dry off. The main crop farming practised by most groups is banana farming. The groups' benefits from the network can be broadly subdivided into production related and market related. Production related services focussed on improved access to information, inputs, and innovation for the banana crop through special technical training sessions for proper plantation establishment, maintenance and pest control. In addition, groups were introduced to improved tissue culture planting materials which are free from pests and diseases. Linking with other groups leads to shared workloads, access to additional volunteer resources and collaborative problem solving and decision-making (Deakin, 2004).

Market related services were mostly in the form of organized group market days where groups had to deliver their farm products to designated collection centers, where they were weighed, graded, bulked, and sold to wholesale traders. Castillo (1997) explains that linking with other groups enhances ownership and setting up of common goals which help to achieve economies of scale. Groups within the network are spread out into the three advancement levels of group functionality with some groups on single level,

others on dual level and others at multiple level of group functionality. Membership growth over the years the groups existed was mainly experienced when the groups were involved into the network activities. Groups that had been formed between 6 – 10 years had the highest percentage of increased membership growth. This was attributed to the fact that most of the activities performed by the network were participatory and visible, therefore community members were able to see the immediate benefits and gets interested to learn with the others therefore joining the groups. According to Osborne and Murray (2000), linking with other smallholder groups improves the legitimacy of the smallholder organizations which helps to influence other community members through their pooled influence.

### 5.3 Success factors for the networks in Embu and Kapchorwa districts

Overall, three factors indicated significant influence to the success and sustainability of the networks both networks, these were: Motivation; Ownership; Leaders commitments, motives and skills. Fafchamps (2005) explains that the involvement of the smallholder groups in organizational activities enhances the overall economic growth that their members experience. From the focus group discussions, participants mentioned that they were motivated to be in the network because they had received so much training and even support from other stakeholders through the network which had really helped their groups to grow. According to Amudavi (2003), linkages provide strong leverage for improvement in organizational performance. Samii *et al.* (2002) considers partnerships as instruments for accelerating organizational learning and coordinating the member groups involved.

Groups felt that they owned their networks since they were fully involved in implementing the network activities. The network provided unskilled labor opportunities

when required which included digging of trenches, planting of trees along the river beds, digging of wells among others. It is known that linkages enhance broader knowledge that ensures all involved member organizations get equal opportunities to be better informed about possible options and choices (Halseth and Ryser, 2007). Another reason for the confidence in their network was that the network committee members linked with other stakeholders from outside their network who came and practically trained the groups on new technologies. The groups also linked and interacted with other groups during workshops, trainings and seminars, where they got to learn from one another. During exhibitions and field days groups were able to display their products to other groups, got to see what other groups do and learnt from each other. Amudavi (2003) explains that such partnerships encompass more collaborative relations between external actors and smallholders as well as new forms of interaction and learning.

The groups felt that their networks have been successful and sustainable because of the leaders that they have in their groups. They indicated that their leaders were committed in supporting them to achieve their individual group objectives. Some of the support included training of group members on what they had been trained during the seminars, and following up to ensure that members were practicing what they have been taught and in the right way. Most commonly, positive leadership greatly facilitates internal management of the member groups as well as builds confidence with external support organizations (Paul, 1988). The leaders were considered to be having sincere motives towards their individual groups as well as the network goals; they ensured frequent meetings to update groups on the progress of the network activities, they mobilized groups so that they could develop their groups work plans which would help in prioritizing network activities for the year. Groups also mentioned that their leaders in

the network were skilled and had knowledge on group dynamics, conflict resolution, leadership skills, as well as group formation.

Looking at leadership processes over the years, most groups indicated that they had constitutions to govern leaders selection, however because the positions are voluntary and really involving, they always re-elected the same leaders they had been having in office for more than the terms they were supposed to serve. This could be attributed to the fact that there was no payment attached to being a leader of the network it was entirely voluntary service. Another reason was that most of the trainings that the networks had received were always offered to the group leaders as most of them are literate and had so much experience in practicing the network activities. Therefore member groups were not very much concerned on the leadership processes but instead they are more concerned on their leaders' commitments, skills and motives towards the network. McDonald and Warburton (2003) attribute these to trust among members to conduct partnership activities and reliable knowledge sharing between the member groups

From the study, most groups indicated that each member made regular contributions as agreed, which facilitated the running of the individual group activities. However, they mentioned that even though they received support from the network, the funding they got was not sufficient for them to achieve their individual group objectives. This did not deny them from conducting network activities collectively. Asthana *et al.* (2002) explains that partnerships are easy to maintain so long as there is sufficient human capital and clearly defined common goals.

## 5.4 Power relations and institutional outcomes

This study looked at power relations comparatively for the two networks; Embu network which is a sponsored network whose initiative for formation came from outside and was mainly donor influenced, and Kapchorwa network which is an indigenous network whose initiative for formation came from within the groups in the community. The most intriguing observation to be made was that the same combination of indicators yielded different levels of positive institutional outcomes from the two networks. These indicators displayed that Kapchorwa network was better placed than Embu network in achieving their positive institutional outcome. Sunil and Mahendra (2007) explains in their study on power relations, the possibility of the indigenous networks to achieve and sustain their institutional outcomes is higher compared to sponsored networks, despite the perpetual existence of social and economic heterogeneity. Another possible reason for the variation could have been the fact that Kapchorwa being an indigenous network had all the member groups strongly involved in evaluating the common interests and mutual support of the groups compared to the Embu network which at some point did not have a say on the facilitation planning processes and institutional strengthening. Dasgupta *et al. (2004)* explains that if the power process is clear and participatory, then all involved parties within the institutional linkages will equally capture benefits that are generated through their organizational development without undermining the potential of collective action.

The main difference between the two networks was on how each network ensured that workload was distributed adequately among the leaders. During the FGD, groups in Kapchorwa network mentioned that they ensure workload is distributed adequately among the leaders and members. However, groups in Embu indicated that mostly their

leaders are overworked with responsibilities since they carry out most of the activities by themselves. This could also be attributed to the fact that the Embu network is driven by external forces unlike the Kapchorwa network.

## 5.5 Benefits of the network to the organizational growth of the member groups

From the study, groups from both networks indicated that their networks have really benefitted them both at household level and at their individual group level. Their main benefits were broadly categorized into improved livelihood, learning approaches, participation, and positive progress towards group goals. According to Carayannis *et al.* (2000), linkages enhanced access to complementary capabilities; specialized skills and building of organizational capacities that help strengthen networks as well as stakeholder relationships.

At household level the benefits the groups have enjoyed included better access to markets and increased income from selling more farm produce, these had enabled them support their households as well as improve food security. The smallholders have been able to send their children to school because they are able to pay school fees. Access to farm inputs like manure has become much easier and cost effective because they have been able to use manure from their livestock which in return has improved soil fertility resulting in increased farm production. Some of the community members have benefitted by getting unskilled labor which has also increased their household income. These findings are in agreement with Springfellow *et al.* (1997) that involvement of smallholders into rural development initiatives helps in contributing to higher productivity and income growth, which in turn can enhance food security, poverty reduction efforts and overall economic growth

In terms of learning approaches, the groups have been able to learn through: farmer to farmer training; from other groups during exchange tours and exhibitions; through learning by doing among others. These learning approaches have motivated them because by seeing what others have been doing, the groups have been able to work as a team, better communicate, enhanced self-esteem, improved negotiation skills. During the focus group discussions, the groups mentioned that they have also been able to facilitate trainings by themselves to other group members and the community which has enabled dissemination and adoption of new technologies much faster and readily accepted. This could be attributed to the fact that the networks have well planned follow-up and monitoring systems that are participatory and involves all the group members

Members' active participation into the network activities has enabled them to acquire more skills and knowledge on conservation practices and better farming systems. Being involved in the seminars and trainings has enabled the groups to grow and improve on their individual groups' performance in terms of conflict resolutions, financial management, group dynamics, proposal writing and record keeping. Rural development programmes are focusing on enhancing the capacities of smallholders through capacity building, community based initiatives and partnerships which are part of the solutions for poverty alleviation (Ray, 2000; Shortall, 1994)

Positive progress towards group goals were based on the kind of activities implemented by the network; irrigation, planting of trees, tree nursery management as well as ways of improving food production. Frequent follow-up with the groups was also mentioned as a process of positive progress towards achieving group goals. Recruitment of new members into the member groups that enhanced membership growth was also mentioned as an indication of the groups performing well in their organization and development.

## 5.6 Conclusions

From the study, three dimensions: Motivation, Ownership, and Leaders commitment, skills and motives were found to be the most important factors that has strongly influenced the success and sustainability of the two networks. Positive outcomes of the network's performance against the backdrop of power relations were found to have a potentially higher level of institutional success in indigenous networks as compared to sponsored networks. Through the networks support, groups were able to share resources, invest in available opportunities, share information and access external support among other advantages. The findings of this study are useful in developing rural institutions strengthening frameworks which define the role of networks in training, development, and information sharing for smallholder systems.

## 5.7 Recommendations

There is need to assess how different functional aspects of groups influence the networks' performance. These will help to better quantify contributions to the groups and benefits from groups. There is also need for more in-depth study on power relations and institutional outcomes that compares organizational performance of indigenous networks and sponsored networks.

# REFERENCES


Ahuja, G. (2000). The duality of collaboration: inducements and opportunities in the formation of inter-firm linkages. *Strategic Management Journal*, 21, 31- 43.

Alsop, R.G., Khandelwal, R., Gilbert, E.H. and Farrington, J. (1996). The Human Capital Dimensions of Collaboration among Government, NGOs and Farm Families: Comparative advantage, complications and observations from an Indian case. *Agriculture and Human Values* 13(3), 3-12.

Amudavi, D. M. (2003). Advancing a Partnership Model of Extension to Support the Kenya National Agriculture and Livestock Extension Program (NALEP) in Rural Livelihood Improvement. *AIAEE proceedings of the 19th annual conference* (pp. 43-57)

Anderson, C.D. and Bell, M.M. (2003). The devil of social capital: a dilemma of American rural sociology. *In: Cloke, P. (Ed.), Country Visions. Pearson Education, Essex*, (pp. 232–244.)

Apedaile, P. (2004). The new rural economy. *In: G. Halseth and R. Halseth (Eds.), Building for success: Explorations of rural community and rural development* (pp. 111-136).

Asthana, S., Richardson, S. and Halliday, J. (2002). Partnership working in public policy provision: A framework for evaluation. *Social Policy and Administration,* 36(7), 780-795.

Bache, I. (2010). Partnership as an EU Policy Instrument: A political History. *West European Politics,* 33(1), 58-74.

Barrett, C. (2008). Smallholder market participation: Concepts and evidence from eastern and southern Africa. *Food Policy*, 33(4), 299–317.

Bartlett, M. S. (1950). Tests of significance in factor analysis. *British Journal of Psychology*, 3(2), 77-85.

Baum, J.B., and Ingram, P. (2002). Inter-organizational learning and network organization: toward a behavioral theory of the inter-firm. *In M. Augier & J.G. March (Eds.), The economics of choice, change and organization. Cheltenham: Edward Elgar*.

Bebbington A.J. (2004) 'NGOs and uneven development: geographies of development intervention', *Progress in Human Geography*, 28(6), 725-745.

Beckman, R. J., and Cook, R. D. (1983). Outliers. *Technometrics*, 25 (2), 119-149

Belderbos, R., Carree, M. and Lokshin B. (2006). Complementarity in R&D cooperation strategies. *Review of Industrial Organization*, 28, 401-426.

Belderbos, R., Gilsing, V. and Lokshin, B. (2009). Persistence of and interrelation between horizontal and vertical technology alliances.

Berman, E., & West, J. (1995). Public-private leadership and the role of non-profit organizations in local government: The case of social services. *Policy Studies Review*, 74(2), 235-246.

Bernard, T. and Spielman, D. (2009). Reaching the rural poor through producer organizations? A study of agricultural marketing cooperatives in Ethiopia. *Food Policy*, 34(1), 60–69.

Bingen, J., Serrano, A. and Howard, J. (2003). Linking farmers to markets: different approaches to human capital development. *Food Policy*, 28(4), 405-419.

Brown, S.L. and Eisenhardt, K.M. (1995). Product Development: Past Research, Present Findings, and Future Directions. *The Academy of Management Review*, 20, 343-378.

Buller, H. (2000). Re-creating rural territories: LEADER in France. *Sociologia Ruralis*, 40(2), 190–200.

Carayannis, E.G., Alexander, J. and Ioannidis (2000). Leveraging knowledge, learning, and innovation in forming strategies government-university-industry (GUI) R&D partnerships in the US, Germany, and France. *In Technovation*, 20(9), 477-488.

Carroll, T.F. (1992). Intermediary NGOs: The Supporting Link in Grassroots Development. KumarianPress

Castillo, G. T. (1997). Research Partnerships: Issues, Lessons, Results and Dreams for Sustainable Development. *Agricultural Research & Extension Network, ODI, Network Paper* No. 71.

Critchley, W., M. Verburg, and L van Veldhuizen (eds) (2006). Facilitating Multi-stakeholder Partnerships: Lessons from Prolinnova. A publication in the series on Promoting Local Innovation. IIRR, Silang, Cavite, Philippines and ETC, Leusden, The Netherlands.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika,* 16(3), 297-334.

Coulter, J., Goodland, A., Tallontire, A. and Springfellow, R., (1999). Marrying farmer cooperation and contract farming for service provision in a liberalising sub- Saharan Africa. *ODI Natural Resource Perspecitves 48.*

Dasgupta, M., Groundvoinnet, H. and Romani, M. (2004). State community synergies in community-driven development. *Journal of Development Studies* 40 (3).

Das, T. and Teng B. S. (2000). A resource-based theory of strategic alliances. *Journal of Management,* 26, 31-61.

DeVaus, D. A. (2002). Surveys in Social Research. 5th edition. *London: Routledge.*

Deakin, N. (2004). Aspects of partnership in England. *The Nonprofit Review*, 4(1), 1-7.

Deolalikar,A. B.,Brillantes,A. B. Jr.,Gaiha,R., Pernia,E. M. and Racelis, M. (2002).Poverty reduction and the role of institutions in developing Asia. *Asian Development Bank Economics and Research Department ERD Working Paper Series No*. 10 http://www.adb.org/Documents/ERD/Working_Papers/wp010.pdf

Draper, N. R., and Smith, H. (1981). Applied regression analysis, 2nd edition. *New York: John Wiley and Sons*

Durbin, J and Watson, G. S. (1971). Testing for serial correlation in least squares regression. *Biometrika,* 58, 1-19.

Fafchamps, M. (2005). Market institutions in sub-Saharan Africa. Cambridge, MA: MIT Press.

Fesenmaier, J. and Contractor, N. (2001). The evolution of Knowledge for Rural development. *Journal of the Community Development Society*, 32(1), 161-175.

Grossman, G. and Hanlon, W. W. (2011). A Theory of Leadership Selection in Small Groups - With Evidence from Ugandan Farmer Associations. *Political Science*, 1(212), 1-37.

Hagedoorn, J. (1993). Understanding the rationale of strategic technology partnering: interorganizational modes of cooperation and sectoral differences. *Strategic Management Journal*, 14, 371 – 385.

Hagedoorn, J. (2002). Inter-firm R&D partnerships: an overview of major trends and patterns since 1960. *Research Policy*, 31, 477 – 492

Hagedoorn, J. and Schakenraad, J. (1994). The effects of strategic technology alliances on company performance. *Strategic Management Journal*, 15, 291-309.

Halseth, G. and Ryser L.M. (2007). The Deployment of Partnerships by the Voluntary Sector to Address Service Needs in Rural and Small Town Canada. *International Journal of Voluntary and Nonprofit Organ,* 18, 241 – 265.

Hirvonen, M. (2009) A tourist guide to systems studies of rural innovation. LINK Policy Studies Resources on Rural Innovation Series. No. 1, LINK: Hyderabad.

Hotelling, H. (1988) Analysis of a complex of statistical variables into principal components. *Journal of Educational Psychology,* 24, 417 – 441.

Hounkonnu, D. (2002). Linking up with local dynamics: Learning to listen. *In Wheelbarrows full of frogs: Social learning in rural resource management. Leewis, C. and Pyburn, R. (eds). Koninklijke Van Gorcum: The Netherlands*

Joe, S. (1995). Second level organizations. CARE USA: PACA Regional Office

Kaiser, H. F. (1974). Little Jiffy, Mark IV. *Educational and Psychological Measurement*, 34, 111-117.

Kibwana, O.T. (2000). Clapping with two hands: joining local and external knowledge for innovation in land husbandry. *Article for Journal of Agricultural and Education Extension.*

Kidder, L. H. and Charles M. J. (1986). Research Methods in Social Relations. *5th edition. Society for the Psychological Study of Social Issues. New York: Holt, Rinehart and Winston.*

Klerkx, L., Aarts, N. & Leeuwis, C. (2010). Adaptive management in agricultural innovation systems: The interactions between innovation networks and their environment. Agricultural Systems 103(6): 390-400]

Korsching, P., El-Ghamrini, S. and Peter, G. (2001). Rural telephone companies: Offering technology innovations to enhance the economic development of communities. *Technology and Society,* 23, 79-91.

Koza, M. and Lewin, A. (2000). Managing partnerships and strategic alliances: raising the odds of success. *European Management Journal*, 18(2)

Kutner, M. H., Nachtsheim, C. J., Neter, J., and Li, W. (2004). Applied Linear Statistical Models. *4th edition. Mc Graw – Hill, Irwin.*

Lourenzani, A.E.B and Silva, A.L (2006). Colllective action involving small producers: from exclusion to inclusion in the markets. *In 44th Congress of the Brazilian Society of Rural Economy*

Lourenzani, A.E.B and Silva, A.L (2010). Systematic model of collective actions: evidences from Brazilian agribusiness. *In 5th research workshop on institutions and Organizations.*

Markelova, H., Meinzen-Dick, R., Hellin, J. and Dohrn, S. (2009). Collective action for smallholder market access. *Food Policy*, 34(1), 1–7.

Matchaya, G. C. (2004). The impact of rural producer organisations on rural livelihoods: A case of national smallholder farmers' association in Malawi: *A multiple methods approach. MA dissertation. Agricultural University of Norway, Oslo.*

Matchaya, G. C. (2010). Cooperative patronage: The National Smallholder Farmers ' Association of Malawi in Kasungu District. *Development Southern Africa*, 27(3).

McDonald, C and Warburton, J. (2003). Stability and change in nonprofit organizations: *The volunteer contribution*, 14(4), 381-399.

Meinzen-Dick, R. and Di Gregorio, M. (2004). Collective Action and Property Rights for Sustainable Development. *2020 Vision for Food, Agriculture and the Environment. Focus 11. IFPRI, Washington, DC.*

Meinzen-Dick, R., Knox, A., Place, F. and Swallow, B. (Eds.). (2002). Innovation in Natural Resource Management. *Johns Hopkins University Press, Baltimore*.

Milbourne, L., Macrae, S. and Maguire, M. (2003). Collaborative solutions or new policy problems: Exploring multi-agency partnerships in education and health work. *Journal of Education Policy*, 18(1), 19-35.

Miotti, L. and Sachwald, F. (2003). Co-operative R&D: why and with whom: and integrated framework of analysis. *Research Policy*, 32, 1481-1499.

Narayan, D., Raj, P., Kai, S., Anne, R. and Koch-Schulte, S. (2000). Voices of the Poor: Can Anyone Hear Us? *New York, N.Y.: Published for the World Bank, Oxford University Press*.

Norusis, M. (2004). SPSS 13.0 Statistical Procedures Companion. Upper Saddle-River, N.J.: Prentice Hall, Inc.

Oakerson, R. J. (1992). Analyzing the commons: A framework. In Making the commons work. Theory, practice and policy. Ed. D. W. Bromley. San Francisco, CA, U.S.A.: ICS Press.

Olson, M. (1999). The logic of collective action: The public benefits and the theory of social groups. Sao Paulo: EDUSP

Osborne, S., and Murray, V. (2000). Collaboration between non-profit organizations in the provision of social services in Canada: Working together or falling apart? *The International Journal of Public Sector Management*, 13(1), 9-18.

Ostrom, E. (1990). Governing the commons: The evolution of institutions for collective action. New York: Cambridge University Press.

O'Toole, K., and Burdess, N. (2004). New community governance in small rural towns: The Australian experience. *Journal of Rural Studies*, 20, 433-443.

Owen-Smith, J. and Powell, W. W. (2004). To Patent or Not: Faculty Decisions and Institutional Success at Technology Transfer. *Journal of Technology Transfer*, 26, 99-114.

Paul, S. (1988). Governments and grassroots organizations: From co-existence to collaboration. *In J.P. Lewis (ed). Strengthening the poor: What have we learned?*

Pett, M.A., Lackey, N.R. and Sullivan, J.J. (2003) Making Sense of Factor Analysis: The use of factor analysis for instrument development in health care research. California: Sage Publications

Pierce, D. A., and Schafer, D. W. (1986). Residuals in generalized linear models. *Journal of the American Statistical Association,* 81, 977-986.

Pongsiri, N. (2002). Regulation and public-private partnerships. *The International Journal of Public Sector Management*, 15(1), 487-495.

Poteete, A. and Ostrom, E. (2003). In pursuit of comparable concepts and data about collective action. *CAPRi working paper 29. Washington DC: International Food Policy Research Institute.* http://www.capri.cgiar.org/pdf/capriwp29.pdf

Powell, W., Koput, K and Smith-Doerr, L. (1996). Inter-organizational collaboration and the locus of innovation: networks of learning in biotechnology. *Administrative Science Quarterly*, 41, 116-145.

Pretty, J. (1995). Regenerating Agriculture: Policies and Practices for Sustainability and Self-Reliance. *Earthscan, London.*

Ray, C. (2000). The EU LEADER programme: rural development laboratory. *Sociologia Ruralis* 40 (2), 163–172.

Reimer, B. (2002). A sample frame for rural Canada: Design and evaluation. *Regional Studies*, 36(5), 845-859.

Saigenji, Y. and Zeller, M. (2009) Effect of contract farming on productivity and income of smallholders: The case of tea production in north-western Vietnam. *Contributed Paper prepared for presentation at the International Association of Agricultural Economists Conference; 16–22 August, Beijing, China.*

Samii, R., Van Wassenhove, L.N. and Bhattacharya, S. (2002). An Innovative Public-Private Partnership: New Approach to Development. *World Development*, 30(6), 991-1008.

Sanginga, P.C., A. Waters-Bayer, S. Kaaria, J. Njuki and C. Wettashina (2009). Innovation Africa: Beyond Rhetoric to Praxis. In: Sanginga, P. et al. (eds), Innovation Africa: enriching farmers' livelihoods. Earthscan, London, pp 374-386.

Scott, M. (2004). Building institutional capacity in rural Northern Ireland: The role of partnership governance in the LEADER II programme. *Journal of Rural Studies*, 20, 49-59.

Shapiro, S. S., Wilk, M. B. (1965). An analysis of variance test for normality (complete samples). *Biometrika* 52(3-4), 591–611.

Shepherd, A. W. (2007). Approaches to linking producers to markets: A review of experiences to date (Agricultural Management, Marketing and Finance Occasional Paper 13). *Rome: Food and Agriculture Organization of the United Nations.*

Shortall, S. (1994). The Irish rural development paradigm – an exploratory analysis. *Economic and Social Review* 25 (3), 233–261.

Srinath, K., Sridhar, M., Kartha, P.N.R. and Mohanan, A.N. (2000) Group farming for sustainable aquaculture. *Ocean & Coastal Management*, 43, 557–571.

Stockbridge, M., Dorward, A. and Kydd, J.(2003). Farmer Organizations for Market Access: Learning from Success. *Briefing Paper. Wye College, University of London, UK*.

Springfellow, R., Coulter, J., Lucey, T., McKone, C. and Hussain, A., (1997). Improving the access of smallholder to agricultural services in Sub-Saharan Africa: Farmer cooperation and the role of the donor community. *ODI Natural Resource Perspectives 20*

Sunil, R. and Mahendra, B. (2007). Power relations and institutional outcomes: A case of pastureland development in semi-arid Rajasthan. *Ecological economics, 62, 360-372.*

Swanson, B. (2006). Extension strategies for poverty alleviation: Lessons from China and India. *Journal of Agricultural Education and Extension*, 12, 285–299.

Temu, A. (2009). Institutional changes and transaction costs: Exchange arrangements in Tanzania's coffee market. In J. Kirsten, A. Dorward, C. Poulton, and N. Vink (Eds.), Institutional economics perspectives on African agricultural development (pp. 227–244). *Washington, DC: International Food Policy Research Institute.*

Tenywa, M. M., Rao, K., Tukahirwa, J. B., Buruchara, R., Adekunle, A., A.,, Mugabe, J., Wanjiku, C., Mutabazi, S., Fungo, B., Kashaija, N. I., Pali, P., Mapatano, S., Ngaboyisonga, C., Farrow, A., Njuki, J. & Abenakyo, A. (2011). Agricultural Innovation Platform As a Tool for Development Oriented Research: Lessons and Challenges in the Formation and Operationalization. Learning Publics Journal of Agriculture and Environmental Studies 2(1): 117-146.

Tether, B. (2002). Who co-operates for innovation, and why: an empirical analysis. *Research Policy*, 31, 947-967.

Tidd, J., Bessant, J. and Pavitt. K. (2005). Managing innovation: Integrating technological, market and organizational change, *Chichester: John Wiley & Sons*.

Toenniessen, G., Adesina, A. and DeVries, J. (2008). Building an alliance for a green revolution in Africa. *Annals of the New York Academy of Sciences*, 1136, 233–242.

Tripsas, M. (1997). Unravelling the process of creative destruction complementary assets and incumbent survival in the typesetter industry. *Strategic Management Journal*, 18, 119 – 142

Uphoff, N. and Krishna, A. (1999) Mapping and Measuring Social Capital: A Conceptual and Empirical Study of Collective Action for Conserving and Developing Watersheds in Rajasthan, India. *Social Capital Initiative WP Series No.13. Washington, D.C.: World Bank.*

Uphoff, N. (1996). Collaboration as an Alternative to Projects: Cornell Experience with University-NGO-Government Networking. *Journal of Agriculture, Food, and Human Values Society,* 13(2).

Van der Voort, J. and Meijs, L. (2004). Partnerships in perspective: About sustainable relationships between companies and voluntary organizations. *The Nonprofit Review*, 4(1), 9-18.

Velleman, P. F., and Welsch, R. E. (1981). Efficient computing of regression diagnostics. *American Statistician,* 35, 234-242.

Warning, M. and Key, N. (2002). The social performance and distributional consequences of contract farming: An equilibrium analysis of the Arachide de Bouche program in Senegal. *World Development* 30(2), 255–263.

Weisberg, S. (1985) Applied Linear Regression, 2nd edition. *New York: John Wiley and Sons*

Werhane, P. H., Kelley, S. P., Hartman, L. P. and Moberg, D. J. (2010). Alleviating poverty through profitable partnerships: Globalization, markets, and economic well-being. *New York: Routledge Taylor & Francis Group.*

Winter, P., Simmons, P. and Patrick, I. (2005) Evaluation of a hybrid seed contract between smallholders and a multinational company in East Java, Indonesia. *Journal of Development Studies* 41, 62–89.

Zeigler, R.S. and Hossain, M. (1995). Goals and Objectives of the Rain fed Lowland Rice Research Consortium. *In K.T. Ingram (ed). Rainfed lowland rice: Agricultural research for high-risk environments. Manila, Philippines: International Rice Research Institute.*

## Appendix I: KMO and Bartlett's test statistics

| Dimension | Site | Items | KMO measure of sampling adequacy | Bartlett's test of sphericity - Sig. |
|---|---|---|---|---|
| Ownership | Embu | 3 | 0.644 | 0.000 |
| | Kapchorwa | 5 | 0.869 | 0.000 |
| Motivation | Embu | 4 | 0.702 | 0.000 |
| | Kapchorwa | 5 | 0.500 | 0.011 |
| Financial stability | Embu | 3 | 0.707 | 0.000 |
| | Kapchorwa | 4 | 0.515 | 0.000 |
| Leaders skills and motives | Embu | 4 | 0.627 | 0.000 |
| | Kapchorwa | 2 | 0.500 | 0.000 |
| Leadership processes | Embu | 3 | 0.676 | 0.000 |
| | Kapchorwa | 6 | 0.666 | 0.000 |
| Organizational learning | Embu | 3 | 0.675 | 0.000 |
| | Kapchorwa | 3 | 0.699 | 0.000 |
| Networking | Embu | 5 | 0.600 | 0.000 |
| | Kapchorwa | 2 | 0.500 | 0.000 |

## Appendix II: Factor loading values

| ABBREVIATION | MEANING |
|---|---|
| E | Embu |
| K | Kapchorwa |
| O | Ownership |
| M | Motivation |
| F | Financial stability |
| LM | Leaders motives |
| LP | Leadership processes |
| OL | Organizational growth |
| N | Networking |
| 1,2,3,4,5,6 | Indicator numbers |

| CODE | FACTOR LOADING | CODE | FACTOR LOADING |
|---|---|---|---|
| EO1 | 0.000 | KO1 | 0.829 |
| EO2 | 0.000 | KO2 | 0.000 |
| EO3 | 0.743 | KO3 | 0.841 |
| EO4 | 0.000 | KO4 | 0.826 |
| EO5 | 0.853 | KO5 | 0.818 |
| EO6 | 0.793 | KO6 | 0.846 |
| EM1 | 0.000 | KM1 | 0.000 |
| EM2 | 0.000 | KM2 | 0.000 |
| EM3 | 0.750 | KM3 | 0.849 |
| EM4 | 0.828 | KM4 | 0.849 |
| EM5 | 0.793 | KM5 | 0.000 |
| EM6 | 0.731 | KM6 | 0.000 |
| EF1 | 0.836 | KF1 | 0.963 |
| EF2 | 0.871 | KF2 | 0.955 |
| EF3 | 0.840 | KF3 | 0.000 |
| EF4 | 0.000 | KF4 | 0.893 |
| EF5 | 0.000 | KF5 | 0.904 |
| EF6 | 0.000 | KF6 | 0.000 |
| ELM1 | 0.819 | KLM1 | 0.000 |
| ELM2 | 0.790 | KLM2 | 0.902 |
| ELM3 | 0.000 | KLM3 | 0.000 |
| ELM4 | 0.000 | KLM4 | 0.000 |
| ELM5 | 0.788 | KLM5 | 0.902 |
| ELM6 | 0.784 | KLM6 | 0.000 |
| ELP1 | 0.000 | KLP1 | 0.878 |

| | | | |
|---|---|---|---|
| ELP2 | 0.000 | KLP2 | 0.898 |
| ELP3 | 0.789 | KLP3 | 0.747 |
| ELP4 | 0.791 | KLP4 | 0.839 |
| ELP5 | 0.801 | KLP5 | 0.771 |
| ELP6 | 0.000 | KLP6 | 0.816 |
| EOL1 | 0.799 | KOL1 | 0.885 |
| EOL2 | 0.000 | KOL2 | 0.880 |
| EOL3 | 0.830 | KOL3 | 0.000 |
| EOL4 | 0.000 | KOL4 | 0.000 |
| EOL5 | 0.779 | KOL5 | 0.810 |
| EOL6 | 0.000 | KOL6 | 0.000 |
| EN1 | 0.786 | KN1 | 0.000 |
| EN2 | 0.812 | KN2 | 0.928 |
| EN3 | 0.000 | KN3 | 0.928 |
| EN4 | 0.802 | KN4 | 0.000 |
| EN5 | 0.871 | KN5 | 0.000 |
| EN6 | 0.899 | KN6 | 0.000 |

## Appendix III: Cumulative Variance

| Dimension | Site | Cumulative variance |
|---|---|---|
| Ownership | Embu | 63.6299 |
| | Kapchorwa | 69.2430 |
| Motivation | Embu | 60.2787 |
| | Kapchorwa | 72.1240 |
| Financial stability | Embu | 72.0910 |
| | Kapchorwa | 87.2965 |
| Leaders skills and motives | Embu | 63.2519 |
| | Kapchorwa | 81.2880 |
| Leadership processes | Embu | 63.0250 |
| | Kapchorwa | 72.8582 |
| Organizational learning | Embu | 64.4490 |
| | Kapchorwa | 73.7500 |
| Networking | Embu | 72.6030 |
| | Kapchorwa | 86.0920 |

## Appendix IV: Indicators selected for each variable per site

| VARIABLE | SITE | NUMBER OF INDICATORS | INDICATORS SELECTED | COMMON INDICATORS |
|---|---|---|---|---|
| Ownership | Embu | 3 | 3,5,6 | 3,5,6 |
| | Kapchorwa | 5 | 1,3,4,5,6 | |
| Motivation | Embu | 4 | 3,4,5,6 | 3,4 |
| | Kapchorwa | 2 | 3,4 | |
| Financial stability | Embu | 3 | 1,2,3 | 1,2 |
| | Kapchorwa | 4 | 1,2,4,5 | |
| Leaders Motives | Embu | 4 | 1,2,5,6 | 2,5 |
| | Kapchorwa | 2 | 2,5 | |
| Leadership processes | Embu | 3 | 3,4,5 | 3,4,5 |
| | Kapchorwa | 6 | 1,2,3,4,5,6 | |
| Organizational growth | Embu | 3 | 1,3,5 | 1,5 |
| | Kapchorwa | 3 | 1,2,5 | |
| Networking | Embu | 5 | 1,2,4,5,6 | 2 |
| | Kapchorwa | 2 | 2,3 | |

## Appendix V: Cronbach's alpha for reliability test

| Dimension | Site | Cronbach's alpha value | Trend of alpha value when items are deleted | | |
|---|---|---|---|---|---|
| | | | Number of items | Decreased | Increased |
| Ownership | Embu | 0.712 | 3 | 3 | 0 |
| | Kapchorwa | 0.884 | 5 | 5 | 0 |
| Motivation | Embu | 0.779 | 4 | 4 | 0 |
| | Kapchorwa | 0.613 | 2 | 2 | 0 |
| Financial stability | Embu | 0.783 | 3 | 3 | 0 |
| | Kapchorwa | 0.694 | 4 | 3 | 1 |
| Leaders skills and motives | Embu | 0.77 | 4 | 4 | 0 |
| | Kapchorwa | 0.77 | 2 | 2 | 0 |
| Leadership processes | Embu | 0.68 | 3 | 3 | 0 |
| | Kapchorwa | 0.769 | 6 | 5 | 1 |
| Organizational learning | Embu | 0.718 | 3 | 3 | 0 |
| | Kapchorwa | 0.791 | 3 | 2 | 1 |
| Networking | Embu | 0.617 | 5 | 4 | 1 |
| | Kapchorwa | 0.838 | 2 | 2 | 0 |

## Appendix VI: Guide questions for Key informants interview

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY
*Setting trends in Higher Education, Research and Innovation*

World Agroforestry Centre
TRANSFORMING LIVES AND LANDSCAPES

**KEY INFORMANT INTERVIEW – GUIDE QUESTIONS**

**Respondents: Focal Development Area Leaders & Project Monitoring Committee**

a) How did the network come about? What prompted the formation of the network?

b) How is the network organized, what are the requirements for joining the network?

c) Are there any rules/ regulations/ policy/ constitutions that govern the network? What measures are taken to ensure that the member groups are guided well enough to enforce these rules/ regulations/ policy/ constitutions?

d) Are there defined ways in which the network plans activities?

e) How does it ensure that all member groups participate in planning the activities?

f) How does the network promote participation?

g) How does it ensure satisfaction amongst member groups?

h) What factors make the network successful (self-perceived positive qualities)?

i) Describe the type of partnerships the network engages with?

j) At what level do the partners participate?

k) Describe the networks' modes of information dissemination and communication to the member groups?

## Appendix VII: Guide questions for focus group discussion

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY
*Setting trends in Higher Education, Research and Innovation*

World Agroforestry Centre
TRANSFORMING LIVES AND LANDSCAPES

**FOCUS GROUP DISCUSSION – GUIDE QUESTIONS**

**Respondents: Representatives from Groups**

a) What are the reasons why the network was formed?
b) How does the network develop plans for the simultaneous strengthening of the network itself and the groups involved
c) How does the network ensure positive progress towards group goals?
d) How does the network ensure transparency of records and accounts?
e) How does the network create awareness about interventions and access of resources to the groups involved?
f) What are the levels of groups' contribution to projects within the network?
g) How are leaders selected within the network?
h) What leadership personalities are given a priority?
i) How would you explain the leadership style within the network?
j) Are the leaders motivated, skilled and committed to achieving the network's purpose?
k) From your own evaluation of groups within the network, do leaders represent the collective interests of the groups?
l) How does the network ensure transparent processes for changing leaders?
m) Does the network have a structure of vertical participation that guarantees
    i. The flow of information
    ii. Access to decision-making
    iii. Distribution of benefits between the network and its members.
n) How does the network plan and manage group activities? Are there regular planning activities such as planning meetings?
o) How does the network ensure flexibility to meet the needs of it's partners, yet preserve it's own autonomy?
p) Does the network define roles which integrate each party's responsibilities and commitments into a shared work plan?

## Appendix VIII: Consent form

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY
*Setting trends in Higher Education, Research and Innovation*

World Agroforestry Centre
TRANSFORMING LIVES AND LANDSCAPES

# Consent Form: Focus Groups Discussions

## *ASSESSING SUCCESS FACTORS OF PARTNERSHIP BUILDING AND RURAL INSTITUTIONS DEVELOPMENT*

I am a student in the Department of Horticulture at Jomo Kenyatta University and graduate fellow at the World Agroforestry Centre (ICRAF). As part of my Masters' dissertation, I am conducting research under the supervision of Dr. Anthony Waititu, a senior lecturer at JKUAT and. Dr. Joseph Tanui, an institutional economist and associate scientist at ICRAF I am inviting you to participate in my study. The purpose of the study is to examine the critical factors that define a successful and sustainable network

This study involves interacting with smallholder groups within the network through FGD and surveys in order to understand the importance of the network to the group in terms of organizational growth and performance. This discussion will enable participants share, learn, understand and brainstorm on the network performance and growth. Each FGD is expected to take approximately 2 hours.

There are no anticipated physical risks to participants. Focus group members will be asked to keep the information provided in the groups confidential however if some of the questions asked may make you uncomfortable or upset. You are always free to decline to answer any question.

A potential benefit of participating in this evaluation for you could be having an opportunity to describe your experience with this Project with others who have shared the experience. Additionally, the opportunity to connect with other groups and share similar and divergent experiences may help clarify and validate your experiences within this Project. The benefits to society would be based on establishing a clearer understanding of the experiences faced by network members and some of the obstacles and benefits of being a member of such a community based network. This information can help the current network be more effective, and may provide guidance through lessons learned for future networks addressing similar issues. **Your participation is completely voluntary. You may withdraw from this discussion at any time without penalty.**

All information obtained in this study will be kept strictly **confidential.** All identifying information will be removed from the collected materials. All findings used in any written reports or publications which result from this evaluation project will be reported in aggregate form with no identifying information. It is, however useful to use direct quotes to more clearly capture the meanings in reporting the findings from this form of evaluation. You will be asked at the end of the interview or focus group if there is anything you said which you do not want included as a quote, and we will ensure that they are not used.

**Authorization**

With regards to being quoted, please tick next to any of the statements that you agree with:

| | |
|---|---|
| | I agree to be quoted directly. |
| | I agree to be quoted directly if my name is not published (I remain anonymous). |
| | I agree to be quoted directly if a made-up name (pseudonym) is used. |
| | I agree that the researchers may publish documents that contain quotations by me. |

**By signing this consent form, you are indicating that you fully understand the above information and agree to participate in this study. Once again, we thank you for taking time out of your busy schedule to participate in this evaluation process.**

**Participant's signature:** _____

**Date:** _____

**Researcher's signature:** _____

**Date:** _____

(If you have any questions about this study, please contact Verrah Akinyi Otiende – Graduate fellow at ICRAF, +254724506942, V.Otiende@cgiar.org Dr. Anthony Waititu – Senior Lecturer, Department of Statistics and Actuarial Sciences at JKUAT, +254733247403, agwaititu@yahoo.com and Dr. Joseph Tanui – Institutional Economist and associate scientist at ICRAF, +254721316866, J.Tanui@cgiar.org)

## Appendix IX: Evaluation form

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY
*Setting trends in Higher Education, Research and Innovation*

World Agroforestry Centre
TRANSFORMING LIVES AND LANDSCAPES

### Evaluation Form for Focus Group Discussion

### Date: _____

***Please complete and return at the end of the discussion***

| **Beside each of the following statements please place a tick in the appropriate box.** | **Yes** | **No** | **Not Sure** |
|---|---|---|---|
| The focus group was better than I expected | | | |
| The topics discussed were interesting | | | |
| The questions were easy to understand | | | |
| I enjoyed discussing this topic with other participants | | | |
| We were given enough time for discussion | | | |
| The facilitators encouraged participation | | | |
| I got a chance to have my say | | | |
| I felt that I was listened to | | | |
| A focus group is a good way of consulting with group members | | | |
| I would participate in another focus group | | | |

**Please tick the response you agree with:**

| | | | | |
|---|---|---|---|---|
| Overall, the focus group was | ☐ Great | ☐ Good | ☐ OK | ☐ Poor |
| The facilitators were | ☐ Great | ☐ Good | ☐ OK | ☐ Boring |

Was there something you think we should have discussed but didn't?

Any other comments (*E.g. what you liked or didn't like; how the group could be improved*)

*Thank you for your participation!*

## Appendix X: Sign-in sheet for FGD

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY

*Setting trends in Higher Education, Research and Innovation*

World Agroforestry Centre

TRANSFORMING LIVES AND LANDSCAPES

**FOCUS GROUP DISCUSSION (FGD) Sign-In Sheet**

| | | | |
|---|---|---|---|
| **Project:** | | **Meeting Date:** | |
| **Facilitator:** | | **Place/Room:** | |
| **Site:** | **FGD No.:** | **Start time:** | **End time:** |

| Sn. | Name | Gender | Group Name | Title | Phone |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

## Appendix XI: Survey Questionnaire

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY
*Setting trends in Higher Education, Research and Innovation*

World Agroforestry Centre
TRANSFORMING LIVES AND LANDSCAPES

# *ASSESSING SUCCESS FACTORS OF PARTNERSHIP BUILDING AND RURAL INSTITUTIONS DEVELOPMENTAMONGST SMALLHOLDER SYSTEMS*

Hello, my name is **VERRAH AKINYI OTIENDE**. I am a student in the Department of Horticulture at Jomo Kenyatta University (JKUAT) and graduate fellow at the World Agroforestry Centre (ICRAF). I am inviting you to participate in my study. The purpose of the study is to examine the critical factors that define a successful and sustainable network. This study involves interacting with smallholder groups within the network through surveys in order to understand the importance of the network to the group in terms of organizational growth and performance. This discussion will enable participants share, learn, understand and brainstorm on the network performance and growth. The interview may take about 30 minutes to 1 hour and participation in it is voluntary.

All information obtained in this study will be kept confidential. All findings used in any written reports or publications which result from this evaluation project will be reported in aggregate form with no identifying information.

Have you been surveyed previously for a rural institutions project? ☐ Yes ☐ No

**(If yes then explain that this survey is aiming to collect additional information to the previous questionnaire)**

**Section A: General Information**

Site; _____

Questionnaire Number: _____ Date of Interview: _____

Group Name (please write full name): _____

Group Location (please indicate the IP): _____

Year Group started: _____

Number of members at initiation of the group: _____

Number of members currently: _____

What is the group typology?

☐ Mixed group ☐ Women group ☐ Men group

Is it a youth group?

☐ Yes ☐ No

What level does the group work on?

What are your group's key functionalities / activities?

☐ Livestock

☐ Crop

☐ User group include water user group, forest user group

☐ Financial group are lending / borrowing groups like SACCOs, table banking

☐ Conservation group like waterway management, climate change

☐ Commodity group are groups meant for produce marketing and trading

**Section B: Please tick**

**A. Ownership - The owners decide, and can change, the purpose of the organization. In order for the organization to be sustainable, they must be satisfied with its performance over time.**

| SNo | Indicators | Strongly disagree | Disagree | Not sure | Agree | Strongly Agree |
|---|---|---|---|---|---|---|
| i. | The network was created in response to common needs felt by affiliated groups | | | | | |
| ii. | The network provides resources and services to the groups involved | | | | | |
| iii. | The network represents common interests in the group levels. | | | | | |
| iv. | The network integrates but does not subordinate affiliated organizations. | | | | | |
| v. | Through the network the groups have been able to develop a circle of mutual support | | | | | |
| vi. | The network supports and facilitates planning processes and institutional strengthening for the groups involved. | | | | | |

**B. Member motivation - Members are motivated by satisfaction of their needs met in a cost-effective manner.**

| SNo | Indicators | Strongly disagree | Disagree | Not sure | Agree | Strongly Agree |
|---|---|---|---|---|---|---|
| i. | Positive progress/ commitment toward group goals | | | | | |
| ii. | The network encourages freedom to participation and member satisfaction | | | | | |
| iii. | The network carries out functions in defense of interests of member organizations. | | | | | |
| iv. | Responds to real and felt needs of member organizations. | | | | | |
| v. | Provides relevant services and presents concrete achievements. | | | | | |
| vi. | Accepts external support in response to its institutional priorities. | | | | | |

**C. Financial sustainability – The network produces services that are sufficiently valued, through time, so that new resources become available to continue producing.**

| SNo | Indicators | Strongly disagree | Disagree | Not sure | Agree | Strongly Agree |
|---|---|---|---|---|---|---|
| i. | The network maintains records and accounts | | | | | |
| ii. | The network enhances transparency to its member organizations | | | | | |
| iii. | The network creates awareness about interventions and access to resources | | | | | |
| iv. | The network develops productive activities that subsidize some services | | | | | |
| v. | The network ensures that program results are achieved at a reasonable cost. | | | | | |
| vi. | Offer services for which members are willing to pay the actual cost; | | | | | |

**D. Leader Commitments skills and Motives (Personal Qualities) - Good leadership facilitates internal management and builds confidence with external support organizations.**

| SNo | Indicators | Strongly disagree | Disagree | Not sure | Agree | Strongly Agree |
|---|---|---|---|---|---|---|
| i. | Leaders are motivated, skilled and committed to achieving the network's purpose. | | | | | |
| ii. | Leaders represent the collective interests of the owners | | | | | |
| iii. | The leaders within the network are adequately trained to serve the collective interests of the owners | | | | | |
| iv. | The network adequately support and promote leaders | | | | | |
| v. | The network ensures workload is distributed adequately amongst the leaders | | | | | |
| vi. | The network has well educated and democratic leaders | | | | | |

**E. Leadership processes – Processes should involve the appropriate people, at the appropriate time, sharing appropriate information in the appropriate way, both internally and externally.**

| SNo | Indicators | Strongly disagree | Disagree | Not sure | Agree | Strongly Agree |
|---|---|---|---|---|---|---|
| i. | Has the respect of its members and other organizations | | | | | |
| ii. | Has the ability to bring together member organizations | | | | | |
| iii. | Maintains communication and negotiates concrete yet flexible agreements which meet the goals of both parties. | | | | | |
| iv. | Have transparent processes for changing leaders | | | | | |
| v. | Exercises democratic and participatory leadership. | | | | | |
| vi. | Has a structure that guarantees the flow of information, access to decision-making and distribution of benefits to its members. | | | | | |

**F. Organizational learning - A sustainable organization has the ability to learn, evolve and gradually change. It can identify and develop the skills required to meet the demands which it generates itself.**

| SNo | Indicators | Strongly disagree | Disagree | Not sure | Agree | Strongly Agree |
|---|---|---|---|---|---|---|
| i. | Incorporate the members' perspectives into planning of group activities | | | | | |
| ii. | All groups understand how the network is genuinely committed to achieving the vision. | | | | | |
| iii. | Documentation and transmission of best practices and lessons learnt | | | | | |
| iv. | Institutional strengthening, and facilitation of planning processes | | | | | |
| v. | Ensures all members benefit from trainings and participatory activities organized | | | | | |
| vi. | Handling conflicts and problem solving skills | | | | | |

**G. Networking - involves working with outside organizations and people to further the organization's objectives.**

| SNo | Indicators | Strongly disagree | Disagree | Not sure | Agree | Strongly Agree |
|---|---|---|---|---|---|---|
| i. | Uses outside support to further its strategic plan | | | | | |
| ii. | Negotiates agreements with collaborators to reach common interests of both the affiliated member groups and the collaborators | | | | | |
| iii. | Defines roles which integrate each party's responsibilities and commitments into a shared work plan. | | | | | |
| iv. | Develops alliances with related social or productive sectors | | | | | |
| v. | Is flexible enough to meet the needs of its partners, yet preserve its own autonomy | | | | | |
| vi. | The network ensures strategic placement in the operating context, especially in production and marketing processes | | | | | |