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The influence of organizational arrangements on effectiveness of collective action: Findings from a study of farmer groups in the East African Highlands

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Farmer groups are important socioeconomic safety nets for rural communities in sub-Saharan Africa. They provide mutual support to farmers through collective action to enhance improvement of livelihoods. These groups have been increasing in number in the post liberalization period in East Africa. However, it is not clear how these groups' organizational arrangements have been changing over time, and the contribution of these changes on effectiveness of collective action. This study, therefore investigates the various organizational changes in groups and how these changes influence effectiveness of collective action of farmer groups in East Africa. Data were collected from 195 farmer groups in Kenya and Uganda through a structured questionnaire survey, supplemented by focus group discussions. Results show that changes in leadership and governance structures were more important in influencing effectiveness of groups. These include having a considerable number of leadership positions, introducing clear leadership tenure, having committees in groups, holding frequent committee meetings and putting in place more enforcement mechanisms for regulating group conduct. This study proposes adoption of effective leadership and governance structures by farmer groups to enhance effectiveness of collective action.

Key words: Organizational structures, organizational changes, small-holder farmers, farmer groups, group objectives.

INTRODUCTION

Agriculture is a large employer and big contributor of GDP in sub-Saharan Africa. Majority of the population in the region are small-holder farmers who reside in rural areas and depend mainly on agriculture for their livelihood (Saliu et al., 2009). However, small-holder farmers still grapple with challenges of low agricultural production and income (Salami et al., 2010). Farmer groups are important vehicles through which farmers can

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organize themselves to access agricultural services and address constraints that hinder agricultural productivity and income (Adong et al., 2013; Salau et al., 2014). Farmers can also benefit socially and economically through collective activities within the groups (Ates and Terin, 2011; Fischer and Qaim, 2012; Ayinde and Torimiro, 2014).

The number of farmer groups in sub-Saharan Africa has progressively increased, following adoption of structural adjustment programs. The programs were put forward by International Monetary Fund (IMF) and the World Bank in the 1980 and 1990s (Economic Commission for Africa, 2014). These programs, which also resulted to economic liberalization, reduced governments' control of cooperatives in the region (Temu, 2009). The withdrawal of government regulatory powers in cooperatives led to mismanagement and widespread corruption (Donovan et al., 2008). As a result farmers pulled out from these cooperatives and formed farmer-driven grass root groups (Temu, 2009).

Farmer-driven groups are nonetheless faced with managerial challenges in the current liberalized economy (Shiferaw et al., 2011). This is because farmers were not well prepared to take over the role of managing groups after retreat by the governments (Abaru et al., 2006). Moreover, the recent market volatility has negatively affected performance of most groups (Onumah et al., 2010). As a result, these groups have not been able to compete effectively with large market forces (Markelova et al., 2009). While some groups have survived the liberalization squall and have continued to perform well, others have been unfavorably affected (Wanyama, 2009). Groups that are poorly organized have experienced more adverse impacts, hence hindering their success (Abaru et al., 2006).

In the liberalized economy, farmer groups have taken on different organizational structures. Which include leadership, governance, functional and social structures (Ampaire et al., 2013; Barham and Chitemi, 2009). These structures change with time. The changes are influenced by both internal and external factors (Paumgarten et al., 2012). Resulting to variation in arrangements across different groups (Odindo, 2009). Despite the various structural changes, improvement of production or income remains fundamental for farmer groups.

Improvement of members' livelihood is dependent on capacity of groups to attain their goals. However, not all groups have the ability to meet their objectives effectively. According to Shiferaw et al. (2006), poor organizational arrangements is the major inhibiting factor for the success of groups, while effective organizational arrangements enable groups to successfully meet their objectives (Paumgarten et al., 2012). The challenge therefore is fostering appropriate changes in organizational arrangements, to enhance effectiveness of groups.

Previous studies have focused on temporal as opposed to organizational changes in groups. Thereby, missing key lessons on the appropriate organizational arrangements that needs to be incorporated to enhance effectiveness in groups (Hellin et al., 2009). There is therefore need to establish changes experienced by groups and the impacts of these changes. This study aims to understand the organizational changes that groups experience and the extent to which the changes influence effectiveness of collective action. In order to achieve the research objectives, this study was guided by the following research questions:

(1) What are some of the organizational changes that groups experience?
(2) To what extent do groups' organizational arrangements influence effectiveness of collective action?

Conceptual framework

Organizational arrangements of groups have been identified to include: group size; group age; gender composition; wealth endowment of members; age of members; education level of members; internal rules and regulations; enforcement mechanisms for regulating group conduct; frequency of meetings; number of executive committee; presence of additional committees (besides the executive committees); use of record books; number of activities undertaken by a group and changes in group activities overtime (Place et al., 2004; Davis et al., 2004; Barham and Chitemi 2009; Gyau et al., 2011; Ampaire et al., 2013).
Different scholars have assessed the effectiveness of collective action differently. According to Place et al. (2004), effectiveness of groups can be measured in many ways, because groups engage in various activities. Moreover benefits from groups are diverse and realized at different levels such as household/individual, group level and at supra level such as community. Shiferaw et al. (2006) argues that, depending with the problem under study, certain indicators can be identified as proxies to measure the degree of effectiveness of groups in attaining their stated objectives.

Based on literature review, a conceptual framework was developed. The groups' organizational arrangements were conceptualized to include social structure, leadership structure, governance structure and group functions. Effectiveness of collective action was measured by the ability of groups to meet objectives. The conceptual framework is as shown in Figure 1.

MATERIALS AND METHODS

Study area

Kapchorwa district, Uganda

The study was undertaken in 6 sub-counties in Kapchorwa district: Kaptanya, Tegeres, Chema, Kawowo, Sipi and Kapchorwa town council. The district is located in the eastern region of Uganda, on

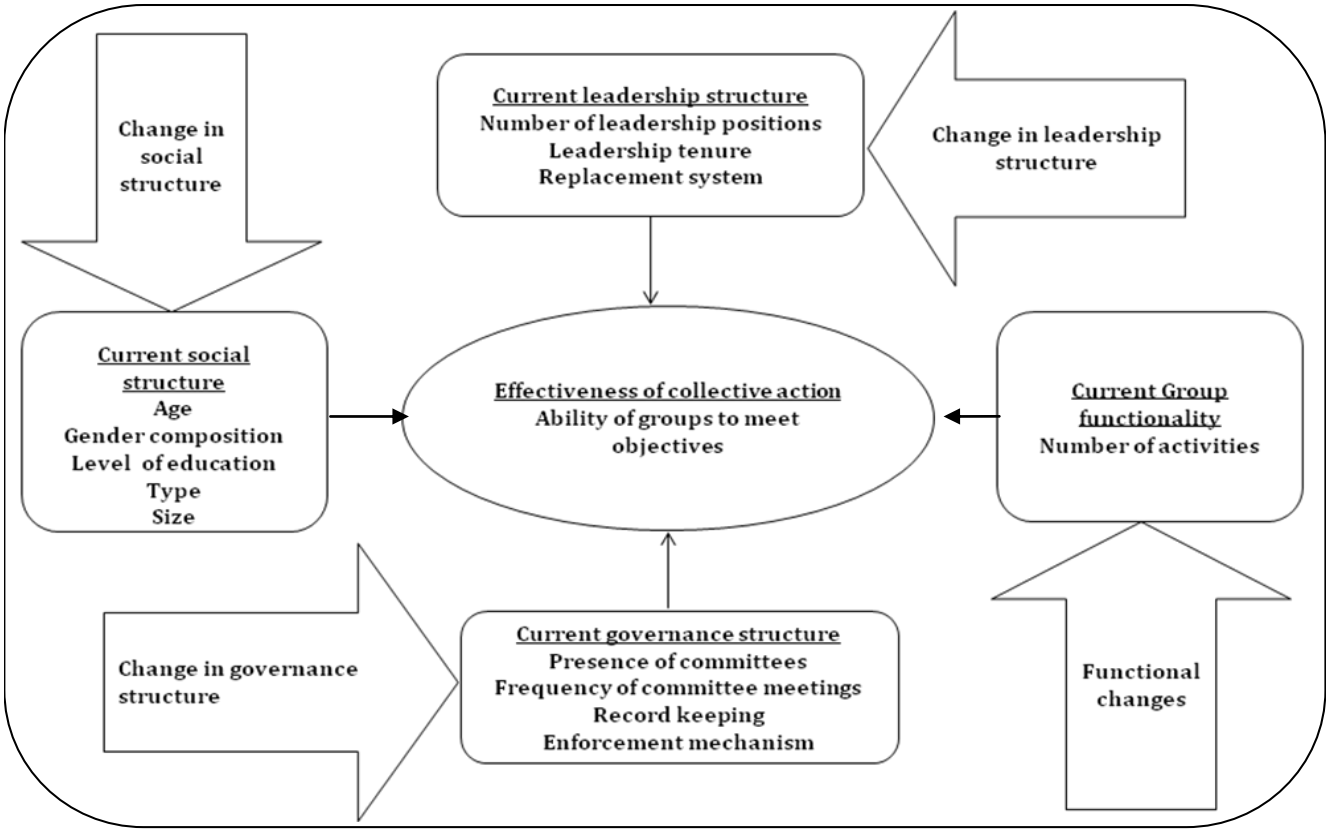

Figure 1. Conceptual framework.

the slopes of Mount Elgon in a mountainous forested ecosystem. It borders Kenya and covers an area of 354.6 km (Ministry of Water and Environment, 2010). The district is characterized by a mixed rain fed crop-livestock system, dominated by small and medium scale farmers. Coffee is the main cash crop, while maize and beans are the main food crops (UNDP and BCPR, 2013). The district has an average population of 104,580, average number of households are 21,652, average household size is 4.8 and population growth rate is at 2.85 (Uganda Bureau of statistics, 2014). The population that lives below the poverty line is at 35.5% (Uganda Bureau of statistics, 2011).

Bungoma county, Kenya

The study was conducted in four sub-counties of Bungoma county: Bumula, Tongaren, Kanduyi and Webuye East. The county is located in Western Kenya along the border with Uganda (Kenya Open Data Survey, 2014). Agriculture is the major occupation and source of income that drives the economy of the county. The major crops grown are maize, beans and sugar canes. The main livestock breeds include cattle, sheep and goats (Agricultural Sector Development Support Programme, 2014). The county has an average population of 1,630,934, covers a surface area of 3593 km^2, the population density is 454 per km^2 and 52.9% of the population live below the poverty line (Commission on Revenue Allocation, 2011). Majority of the households have an average of 4 to 6 members (KNBS and SID, 2013), population growth rate is at 3% and land sizes average 1.5 acres (Shames et al., 2015).

Sampling procedures and Data collection

Sampling was based on the baseline survey conducted by the IFAD funded Strengthening Rural Institutions Project led by World Agroforestry Centre (ICRAF) between 2011 and 2014. The total population of groups in each site were stratified based on the gender composition of the farmer groups (Men, women, mixed) and group location. A total of 195 groups were selected randomly across each stratum over the two study sites. Specifically, 85 groups were selected in Bungoma county and 110 groups in Kapchorwa district. Data were collected using questionnaires, supplemented by focus group discussions. The data collected aimed to identify the structural changes in groups and the extent to which structural arrangements influence effectiveness of collective action.

Data analysis

Chi-square test (χ^2) was utilized to establish whether there is an association between organizational arrangements in groups (independent variables) with the effectiveness of the groups (dependent variable). Additionally, analysis of variance (ANOVA) was used to assess significant differences in group size (number of members) and group age across farmer groups at different levels of effectiveness (dependent variable). Effectiveness of groups (dependent variable) was measured by the ability of the groups to meet their objectives. The ability to meet group objectives was evaluated on a 5 point Likert scale in which 1 = non-achievement, whereas 5 = achievement of group objectives in totality. The midpoint of the scale was three and all scores above three were

Table 1. Continuous variables.

Description	Unit	Min	Max	Mean	SD
Group age	Years	1	32	7.71	5.092
Group size	Number	5	445	26.11	48.121
Number of leadership positions	Number	1	7	4.59	1.169
Number of enforcement mechanisms	Number	1	6	2.41	1.394
Number of records	Number	1	4	2.54	1.146
Number of extra activities	Number	0	8	2.29	1.425

considered to indicate high achievement of objectives and those below three were considered as low achievement of objectives. Scores equal to three were considered to show moderate achievement of objectives.

Description of the independent variables

The continuous variables in the study include: group age, which is the number of years that a group has been in existence; group size, indicating the number of members in a group. The number of leadership positions, showing the number of executive leaders in place such as chairperson, vice-chairperson, secretary and treasurer. Enforcement mechanisms are systems put in place for regulating group conduct. The enforcement mechanisms include payment of fine, warnings, suspension and expulsion. Number of extra activities refer to the additional undertakings that groups engage in apart from their main function. This is shown in Table 1.
Categorical variables in the study comprise the gender composition of groups, these include men only group, women only group and mixed gender groups. Group types identified consisted self-help groups and other larger group types, such as inter-group associations/unions, cooperative societies, community-based organizations, farmer field schools and federations. Leadership tenure is the duration of time that leaders could serve in office before they are replaced. Replacement system is the structure put in place for replacing leaders after their term in office comes to an end, these include elections and consensus.
Committees are structures put in place to involve members in managing group activities apart from having the executive committees in place. Other variables include level of education of members in a group, whether primary, secondary, tertiary (certificate/diploma) or degree level. Composition of groups in terms of age includes youth groups, groups comprising of only the elderly and mixed groups (comprising members of different age groups). Wealth status in groups shows whether a group consists of members with similarities in wealth endowment (either the rich or the poor) or the group encompass members with mixed wealth endowment (consisting of both the rich and the poor). This information is shown in Table 2.

RESULTS AND DISCUSSION

Formation process

Findings from this study indicate that most of the groups were formed by group members as opposed to external actors. In Bungoma county, 91% of the groups were formed by the group members, 5% by government and 5% by non-governmental organizations (NGOs). In Kapchorwa district, 94% of the groups were formed by group members, 5% by government, whereas 1% was formed by NGOs. These results are comparable to the findings of Salifu et al. (2012) who identified that farmer groups are mainly formed by members. However, the results differs with the findings of Place et al. (2004) who established that most farmer groups were likely to be initiated by external organizations as opposed to individual farmers. Patently, most farmer groups were formed by group members as opposed to external actors in the two East African nations.

Results from focus group discussions show that groups were formed for various purposes. These include revolving funds (merry-go-rounds), soil and water conservation and to increase agricultural productivity. Other reasons for formation were to enable members engage in collective activities such as sourcing for agricultural inputs and marketing of agricultural products. These results are consistent with the findings of Fischer and Qaim (2012) and Baah (2008) who identified that members were likely to form and participate in groups if their membership would be of benefit to them. Thus, farmers in the study sites organized themselves into groups to benefit from collective activities.

Group characteristics

General group characteristics

The general group characteristics include the main function of the group, average age of group members, highest level of education of members and wealth status. This is shown in Table 3. In Kapchorwa district, 38% of the groups engaged in crop farming and 25% in animal keeping, as their main function. In Bungoma county, 45% of the groups were mainly involved in animal keeping and 30% of the groups practiced crop farming. Evidently more than 60% of the farmer groups in both sites had mixed farming (crop farming and livestock rearing) as their main activity. This is because farmers mainly organize themselves in groups in order to acquire skills on effective farming practices, source agricultural inputs collectively and market their agricultural products collectively. These results are akin with the findings of

Table 1. Categorical variables.

Variable	Description	Frequency	Percentage
Gender composition	Men only	3	2
	Women only	29	15
	Mixed gender group	163	84
Group type	Self-help groups	168	86
	Inter- group associations /unions	8	4
	Community-based organizations	14	7
	Cooperative ocieties	3	2
	Farmer field schools	1	1
	Federation	1	1
Frequency of replacing leaders	Yearly	35	19
	Bi-annually	40	22
	Tri-annually	56	31
	Above three years	31	17
	No timelines	19	10
Replacement systems	Regular elections	123	72
	Consensus	48	28
Committees	Have committees	147	75
	Do not have committees	47	24
Record keeping	Keep records	189	97
	Do not keep records	5	3
Highest level of education in group	Primary	10	5
	Secondary	68	37
	Tertiary (Certificate/Diploma)	73	39
	Degree	35	19
Composition of group in terms of age	Mixed	127	94
	Youth	3	2
	Elderly	5	4
Wealth status	Mixed (Difference in members' wealth)	133	97
	Equal (Similarities in wealth status)	4	3

Adong et al. (2013), who identified that most farmer groups engage in agricultural activities.

Bungoma county however mainly keeps animal compared to Kapchorwa district, given that the county has a more favorable environment for animal rearing. According to Mudavadi et al. (2001), livestock management is practiced in Bungoma due to its role in the livelihood of the communities as well as its resistance to diseases. The county has good livestock breeds which have resulted to growth in beef and dairy industries (Agricultural Sector Development Support Programme, 2014). The farmer groups in the hilly highlands of Kapchorwa district mainly engage in crop farming compared to Bungoma county. This can be attributed to the environment being more favorable for crop farming. The district has good soils and experience heavy rainfalls favorable for both food and cash crops (Republic of Uganda, 2000). Food and cash crops are therefore the main source of income in households of Kapchorwa district (UNDP, 2013). In addition, natural resource management is practiced more in Kapchorwa district than Bungoma county. This is because the locale is highly likely to experience soil erosion, due to the highly terrain of the district (UNDP, 2013). Thus, farmer groups engage

Table 3. General group characteristics.

General group characteristic	Kapchorwa district (%)	Bungoma County (%)
Main function		
Crop farming	38	30
Animal keeping	25	45
Financial (Revolving funds, lending and borrowing)	17	18
Natural resource management (NRM)	11	1
Enterprise/Marketing	4	5
Capacity development/Empowerment	4	1
Average age of members	**n=3109**	**n=1865**
Below 20 years	2	2
20-29 years	17	14
30-39 years	31	27
40-49 years	28	23
50-59 years	16	23
60 years and above	6	11
Highest level of education of members	**n=2317**	**n=1847**
Degree	2	1
Tertiary (College Certificate/Diploma)	12	13
Secondary	28	32
Primary	58	54
Wealth status		
Mixed (Difference in members' wealth)	96	97
Equal (Similarities in wealth status)	4	3

in soil and water conservation activities mainly through planting trees and terracing to prevent soil erosion.

The study identified that the highest level of education of group members ranged from primary level to degree level. However, the percentage of members with university degree certificates was the least, whereas those with primary and secondary education were the majority. Generally, farmer groups operate in the rural areas, and the more educated members of these areas moved to urban areas in search of formal employment. Most of the highly educated members (degree, diploma and college certificate holders) in these groups were mainly teachers, professionals working in the rural areas and retirees.

Most members of the groups were aged between 20 and 59 years; these comprised of 92% of group members in Kapchorwa district and 87% of group members in Bungoma county. Group members that were under 20 years and those that were above 60 years had the least number. This could be attributed to the fact that members in the age group 20 to 59 are more productive than members who are under 20 years and those that are above 60 years. Ordinary individuals under 20 years are more likely to still be in school and dependent on their parents. Similarly, those that are above 60 years are less productive by virtue of age and age related issues, such as health.

This study also identified that over 96% of the groups in both sites comprised members with mixed wealth status. This indicates that wealth endowment is not a criteria used for a farmer to join a group in most groups in the two study sites. Majority of the groups thus consists of members with mixed wealth status, indicating that the rich and the poor come together to form groups without discrimination in terms of wealth endowment.

Characteristics of group leadership

Characteristics of group leadership include criteria for selecting leaders, mandate of leaders, how leaders guide group members and the level of education of leaders. This is shown in Tables 4 and 5.

In both sites, majority of the groups selected leaders based on performance and leadership skills. This indicates that performance and leadership skills were considered more important, while selecting group leaders. Experience in running group activities was also considered key, while selecting leaders in Kapchorwa district. It was also noted in Bungoma county that a good

Table 2. Characteristics of group leadership.

Group leadership	Kapchorwa (%)	Bungoma (%)
Criteria for selecting leaders		
Experience	55	35
Performance	69	51
Leadership skills	57	51
Capacity	6	19
Level of education	37	8
Social status	20	11
Democratic voting	22	43
Mandate of leaders		
Report back to group after meetings	71	57
Ensure regular meetings	65	70
Transparency with funds	78	92
Record keeping including reports	51	68
How leaders guide group members		
In group meetings	73	38
Participation in group activities	53	68
Lobbying for support from development partners	18	35
Mobilizing group members for training, meetings, etc.	59	73
Sensitization of the group through provision of regular progress reports	35	62
Effective management through best practices	31	46

Table 5. Education level of leaders.

Group leaders		Education level				
		Un-educated (%)	Primary (%)	Secondary (%)	Tertiary (Certificate/ Diploma) (%)	Degree)
Bungoma (n=275)	Chairperson	1	31	63	4	1
	Vice- Chairperson	-	43	54	4	-
	Secretary	-	19	69	11	1
	Treasurer	4	41	44	10	-
Kapchorwa (n=317)	Chairperson	2	30	56	7	5
	Vice-Chairperson	4	46	39	9	2
	Secretary	-	13	70	12	5
	Treasurer	3	28	56	10	4

number of groups (43%) considered democratic voting important when selecting leaders.

Transparency with funds was identified to be the most important mandate of the leaders by groups in both sites. The second most important mandate of leaders in Kapchorwa district was to report back to group in every meeting. While in Bungoma county, the second most important mandate of leaders was to ensure regular meetings. In Kapchorwa district, leaders guide members mainly through group meetings, mobilization of members for trainings and meetings and participation in group activities in that order. In Bungoma county, leaders guide members mainly by mobilizing them for trainings and meetings, participation in group activities and finally by sensitization of the group through provision of regular progress reports.

Majority of group leaders had primary and secondary education, while un educated leaders and those with university degrees had the least number. In both sites, it was identified that secretaries were the most educated,

Table 6. Partnerships with groups.

Partnership	Kapchorwa (%)	Bungoma (%)
Presence of partners		
Have partners	77	88
Do not have partners	23	12
Types of partners		
Government	38	36
Non-governmental organizations (NGOs)	35	60
Farmer groups	27	4
Role of partners		
Capacity development (trainings)	50	61
In-kind support	39	30
Financial support	11	10
Major Influence of partnerships		
Practice change	64	47
Increased production	21	16
Increased income	9	15
Acquisition of skills	3	13
Market access	3	4
Improved infrastructure	1	3
Provision of farm inputs	-	4

owing to the fact that all the secretaries had at least formal education. Compared to the other leadership positions, secretaries had the highest number of those that had attained tertiary education (certificate and diploma). Worth noting in both sites, is that the number of secretaries with secondary education surpassed those with primary education by a very high margin. Additionally, the presence of secretaries with university degrees was also evident in both sites. This could be attributed to the role of secretaries which involves mainly documentation, such as minute taking, writing reports and reading them to members. Thus, the position is definitely a preserve of members with the ability to read and write.

Partnerships with groups

The study identified that the majority of the groups in both sites had interacted with various partners. These partners include government, non-governmental organizations and other farmer groups. In Bungoma county, 88% of the groups have had partners compared to 77% of the groups in Kapchorwa district. This is shown in Table 6.
Partner types in the two sites included non-governmental organizations, government and other farmer groups. Most groups cited that NGOs and government were the major partners. The roles of the partners include capacity development (mainly trainings), in-kind support (such as provision of farm inputs) and financial support in form of loans or grants. Capacity development was ranked the highest form of partner support, while financial support was ranked the least.

Practice change, which involves aspects, such as change of livestock and crop breeds from indigenous to improved breeds, adoption of effective farming techniques and value addition of products was identified as the major influence of these partnerships. This was followed by increased production and income. Additionally, some partners helped groups construct roads and collection centers for their farm products, whereas other partners supported groups to access markets for their products.

Changes in organizational arrangements experienced by the groups

Farmer groups in both sites experienced varied changes in organizational arrangements. This is displayed in Table 7.

Organizational arrangements that experienced moderate and high changes

Organizational arrangements that had experienced

Table 7. Changes in organizational arrangements of groups.

Organizational arrangements that experienced moderate and high changes		Bungoma (%)	Kapchorwa (%)
Change in group size	Increase in number of members	60	30
	Reduction in number of members	25	16
	Number of members remained constant	15	54
Record keeping	Do not keep records	-	5
	Kept records since the group was formed	51	44
	Started keeping records years later, after formation	49	51
Committees	Have no committees	15	30
	Had committees since the group was formed	14	22
	Added committees years later after formation	71	48
Activities	Diversified their group activities	100	86
	Engage in only one collective activity	-	14
Organizational arrangements that experienced minimal changes		**Bungoma (%)**	**Kapchorwa (%)**
Gender composition	Men group to mixed gender group	8	3
	Women group to mixed gender group	14	5
	Mixed gender group to women group	-	1
	Mixed gender group to men group	-	1
Group type	Self-help group to a federation	1	-
	self- help group to community-based organization	-	6
	Self-help group to cooperative societies	-	1
	Self-help group to inter-group association/union	-	1
Leadership positions	Increase	18	5
	Decrease	5	1
Leadership tenure	Reduction of leadership tenure	5	7
Replacement system	Consensus to elections	1	4
	Elections to consensus	1	1
Enforcement mechanisms	Diversification of enforcement mechanisms	7	10

moderate and high changes include group size, record keeping, committees and diversification of group activities. More farmers are recognizing the need of joining groups and engaging in collective activities. For that reason, the percentage of groups in both sites that had increased in size was higher compared to those that had decreased in size. Findings from focus group discussions indicate that group size had increased, because new members wanted to benefit from the group activities. These results are consistent with the findings of Abaru et al. (2006) who identified that groups increase in size as new members join groups in order to benefit from group activities. While the groups that had decreased in size cited aspects, such as misunderstanding, failure to abide by the rules and regulations, death and relocation as the factors that led to decline in group size.

In Kapchorwa district, it was evident that 54% of the groups had neither increased nor decreased in size. This can be attributed to the preference by farmers in Kapchorwa district to form new groups as opposed to joining existing groups. Consequently, Kapchorwa district has more new groups which were formed 1 to 5 years ago, compared to Bungoma county which had less of these younger groups. In Bungoma county, only 15% of the groups had their size remaining constant, because

most farmers in Bungoma prefer to join the already existing groups as opposed to organizing themselves in a new group. This explains why there are more farmer groups in Kapchorwa district than Bungoma county.

Groups started keeping records, such as minutes, financial records, progress reports and group activity reports for various reasons. In Bungoma county, the reasons given for keeping these records were: for future reference (32%), to monitor progress (28%), to enhance accountability (23%), to facilitate group performance (9%) and requirements by their partners (8%). In Kapchorwa district, the reasons for keeping records were: for future reference (42%), to monitor progress (30%), to facilitate transparency and accountability (27%), to enhance group performance (1%), and requirements by stakeholders (1%). Evidently, the main reasons for keeping records in this study are for future reference and to monitor progress.

In Bungoma county, the major reason for appointing committees is to facilitate effective management of the group activities (80%). Other reasons are to make work easier (13%) and to ensure effective participation of the group members (7%). In Kapchorwa district, the main reason for appointing committees is to facilitate effective management of the groups (79%). Other reasons are to enhance effective participation (11%) and to make work easier (9%). Over 80% of the groups in both sites cited that committees were appointed to facilitate effective participation of members and for the management of groups. These show that in the study sites committees are appointed in groups mostly to enhance effective participation of members and for effective management of the groups.

All the groups in Bungoma county engaged in additional activities (Besides the main activity). Similarly, a large number of groups (86%) in Kapchorwa district had diversified their undertakings. These results are consistent with the findings of Aldana et al. (2007) and Thompson et al. (2009) who established that groups that were initially formed for one purpose took on other activities with time. The reasons given for diversifying activities were to enable members obtain more benefits through participation in group activities to meet their interests. Additionally, group members cited that capacity development support from partners, such as government, non-governmental organizations and other farmer groups also influenced them to take on other activities.

Organizational arrangements that experienced minimal changes

Organizational arrangements that underwent minimal changes include gender composition, group type, number of leadership positions, leadership tenure, replacement system of leaders and enforcement mechanisms for regulating group conduct. Over 80% of groups in the study sites were mixed gender groups, this shows that most farmers prefer forming mixed gender groups as opposed to single gender groups. Additionally, majority of the groups that changed their gender composition had changed to mixed gender groups as opposed to single gender groups. The highest number being change from women only group to mixed gender groups and from men only group to mixed gender groups. In both sites, men and women are increasingly recognizing the importance of working together and are moving towards mixed gender groups.

Kapchorwa district exhibited more changes in group type than Bungoma county. Groups in Bungoma county preferred to form an umbrella organization, such as a federation to address their collective needs rather than changing their organization type. Farmers in Bungoma county formed a federation comprising of 111 self-help groups and 11 community-based organizations. The federation was formed mainly for improving production and for the purposes of collective marketing of agricultural produce. Farmers also cited that they wanted to benefit from economies of scale and negotiate for better prices in the market.

The groups in Kapchorwa district changed from self-help groups to inter-group association/union (1%), community-based organizations (6%) and cooperative society (1%). The group types had changed to enable members attain certain benefits and engage in new activities. These include attracting more farmers to the groups, engaging in collective marketing to benefit from economies of scale, providing credit to the community to earn interest and recognition by government and other stakeholders to get their support. Generally, most groups do not form new organizations as evidenced by the few groups that had changed their group type. These results are comparable to the findings of Place et al. (2004) which showed that most groups in Central Kenya did not form new organizations, but instead diversified their activities.

Change in leadership structure included number of leadership positions, increase and reduction of leadership tenure and replacement system. Leadership positions were increased by the groups to provide support to leaders who were already in place. Other factors include the requirements by government for registration purposes. Groups that had reduced the number of leadership positions cited that redundancy and duplication of roles influenced them to reduce the number of leaders. Some groups had changed their replacement system from consensus to regular elections, while others had changed from regular elections to consensus. Consensus as a system of replacing leaders is a process in which group members discuss and agree on whom to give the leadership positions. Election is a formal decision making process whereby group members cast votes to elect individuals for leadership positions.

The groups that changed their leadership replacement

Table 8. Analysis of variance of group size and age with the ability to meet objectives.

Analysis of variance	Variable	Sum of squares	Df	Mean square	F	Sig.
Ability to meet objectives	Group age	9.894	2	4.947	0.190	0.827
-	Group size	3459.916	2	1729.958	0.744	0.476

system from consensus to elections cited that this was as a result of dominance by a few members of the groups who imposed leaders of their choice without acceptance by the whole group. Additionally, the groups had also been enlightened through trainings on the role of elections in enhancing participation of all members both dominant and quiet members. While groups that had changed the replacement systems from elections to consensus stated that all the group members made a decision that they discuss and agree collectively on the leaders to choose. Change in the duration of leaders' term in office included reduction of leadership tenure. The reasons for change were reducing the domination of few individuals who over stay in office and grant other members an opportunity to participate in leadership, advised to reduce the leaders' term in office by their partners to lessen conflicts and to enhance sustainability by allowing other members to take charge.

The changes in the enforcement mechanisms were inclusion of written warning from initially giving verbal warnings. Other changes include incorporating payment of fine, suspension and expulsion from only giving warnings. Enforcement mechanisms were diversified mainly because most members were not abiding by the group's rules, which hindered development. Other reasons include trainings on governance, which prompted groups to consider incorporating other enforcement systems. Verbal warning was not being taken seriously, hence written warning was incorporated to make the disciplinary system official and keep evidence for future reference. Payment of fine was included to discourage members from coming late during group meetings and when undertaking group activities. Suspension was incorporated in groups to allow the members time to reform and make them law abiding. Finally, expulsion was included by some groups to get rid of stubborn/uncooperative members in the group.

Contribution of organizational arrangements on the effectiveness of collective action

Farmer groups in the study sites had changed differently by adjusting their organizational arrangements. Organizational arrangements that had moderately and highly changed include diversification of group activities, change in group size, record keeping and inclusion of committees. Organizational arrangements with minimal changes include group type, gender composition, leadership positions, enforcement mechanisms, replacement system of leaders and leadership tenure. To what extent do the changes in the organizational arrangements influence effectiveness of collective action?

Analysis of variance of group size and age with the ability of the group to meet objectives, shows that there was no significant difference ($p>0.10$) between group size and age with the groups' ability to meet objectives. This is shown in Table 8.

From these results, it is evident that the number of years a group has been in existence does not have any influence on the ability of groups to meet objectives. Young and old groups are equally likely to perform well. Younger groups could have more committed members and effective organizational structures in place that enable groups to meet their goals. Older groups could be composed of undedicated members and poor organizational structures hindering achievement of their goals. This is consistent with the findings of Place et al. (2004) and Sonam and Martwanna (2012) who observed that there was no significant relationship between group age and effectiveness of groups. However, the results differ with the findings of Barham and Chitemi (2009) who concluded that older groups are more mature; hence, they performed better than younger groups.

It is clear from these results that group size does not have any significant difference with the ability of groups to meet objectives. Groups that have many members and those that have few members are equally likely to perform well. Therefore, increase or decrease in group size does not necessarily influence effectiveness of groups. These results are consistent with the findings of Shiferaw et al. (2006), Friedman (2008) and Barham and Chitemi (2009) who identified that group size does not have any influence on the effectiveness of collective action. However, the results contradict the findings of Place et al. (2004), Njoku et al. (2009), Gyau et al. (2011), Sonam and Martwanna (2012) and Ampaire et al. (2013) who established that favorable group size positively influences effectiveness of collective action.

Chi-square statistic test results shows that the organizational structures that have a significant relationship ($P<0.10$) with the ability of the groups to meet their objectives include number of leadership positions, the number of enforcement mechanisms for regulating group conduct, presence of committees to support executive leaders, frequency of committee meetings and having clear timelines that leaders can serve in office

Table 3. Relationship between organizational arrangements and ability to meet objectives.

Variable		Non-achievement (%)	Moderate achievement (%)	Highly achieved (%)	sig.
Group type	Self-help group	14	26	60	0.923
	Other group types	11	26	63	
Gender composition	Mixed gender group	12	27	61	0.623
	Single gender group	19	25	56	
Number of leadership positions	1-3 positions	11	37	52	0.009***
	4 positions	11	27	62	
	5 positions	6	19	76	
	Above 5 positions	29	29	43	
Frequency of replacing leaders	Have specific timelines	14	24	62	0.071*
	Do not have specific timelines	16	47	37	
Replacement system	Elections	15	25	60	0.675
	Consensus	13	32	55	
Presence of committees	Have committees	10	28	62	0.067*
	Have no committees	23	21	55	
Frequency of committees meetings	Weekly	12	27	62	0.015***
	Monthly	7	27	66	
	Semi-annually	33	28	39	
Enforcement systems	1-2 systems	16	31	53	0.041**
	3 and above	11	19	71	
Highest level of education in group	Primary and secondary	15	18	67	0.135
	Tertiary-Certificate, Diploma, Degree	11	31	58	

Pearson Chi-square test for significance: ***at 1%, **at 5%, *at 10%

before replacement. Whereas the gender composition of groups, group type and replacement system of leaders does not have any significant relationship (P>0.10) with the ability of groups to meet their objectives. This is illustrated in Table 9.

It is clear from these results that as the number of leadership positions increases, the ability of the groups to meet their objectives also increases. However, it reaches an optimum number of leadership positions beyond which the ability of groups to meet their objectives declines with an increase in number of leadership positions. A considerable number of leaders in groups are therefore viewed as essential in influencing effectiveness of collective action. This is as shown in Figure 2.

More leadership positions in the group reduce the domination of a few individuals in running the group activities. Hence, groups are able to meet their objectives better. However, too many leadership positions in groups can probably bring in duplication of roles and conflicts which hinders the attainment of group objectives. More leadership positions as opposed to few number of leaders are fundamental in influencing the effectiveness of groups, however, too many leadership positions are detrimental to group effectiveness.

Groups that had put in place definite timelines on duration of leadership tenure were more effective than groups that did not have specified timelines. Therefore, clear specific timelines that leaders could serve in office before they are replaced, has a significant relationship with the ability of groups to meet objectives. Groups that did not have specific timelines on leadership tenure cited that leaders served in office as long as they still want to take charge and resign from office voluntarily. Clear timelines on leadership tenure gives other members an

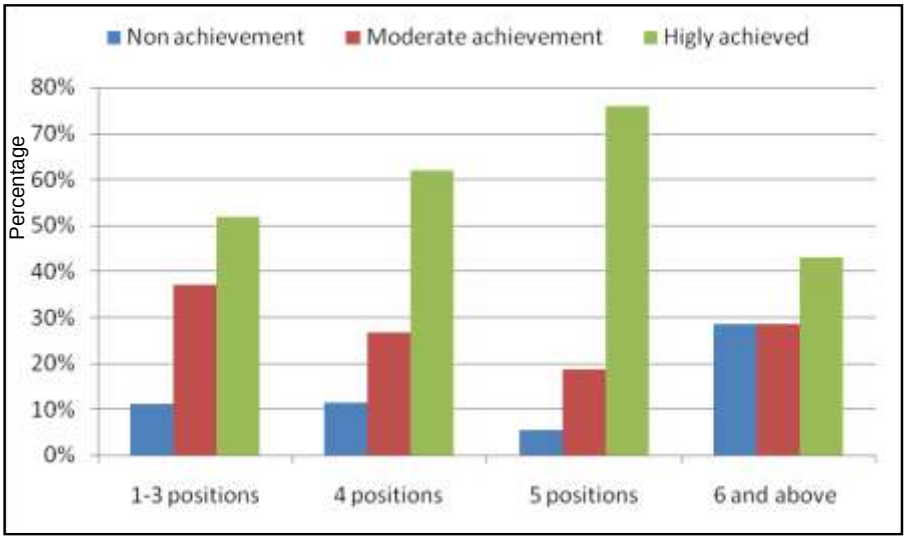

Figure 2. Number of leadership positions and ability of groups to meet their objectives.

opportunity to take charge, eliminates domination of a few individuals and enhances democracy leading to progress.

Groups that had committees who frequently held meetings were more effective in achieving their objectives. Involving members in committees rather than having only the executive leaders (chairman, secretary, treasurer), serves to influence commitment of members as they are involved in management of group activities and projects. These results agree with the findings of Ampaire et al. (2013) who identified that the factors that positively influence effectiveness of rural producer organizations include having numerous sub-committees. Committees that met more often were more effective as compared to those that met less often. Frequent meetings (Weekly and Monthly), as opposed to less frequent meetings (semi-annually) show commitment in group activities and projects. Holding frequent meetings gave committees an opportunity to timely plan and implement the tasks that they had been assigned. Aldana et al. (2007), agree that frequent meetings increases cohesion and strength of groups.

Institution of more enforcement mechanisms enhances the groups' ability to meet its objectives. As such, groups can handle different cases of misconduct with gross misconduct leading to suspension and expulsion. The more systems in place enhance progress in groups as they prompt members to abide by rules and regulations and avoid negative repercussions due to non- adherence. These results are comparable with the findings of Gyau et al. (2011), Fatemi and Jafari (2011) and Salifu et al. (2012), who established that efficient norms, rules and regulations adopted by groups positively influences their effectiveness.

Chi-square tests results however indicate that there was no significant relationship between group types with the ability of the groups to meet objectives. Whether a group is cooperative society, community based organization or a self-help group, does not influence the ability of the groups to meet objectives. These results are consistent with the findings of Kitetu (2005) who identified that group types do not have any influence on their effectiveness. Accordingly, self-help groups such as merry-go-rounds even though they are small groups, they can meet their objectives better than large movements such as cooperatives. Friedman (2008) elaborates that not all large organizations are effective others still struggle with administrative weaknesses and fail to meet their objectives.

From these results, it is evident that gender composition of groups does not have any relationship with the ability of groups to meet their objectives. Thus women only group, men only group and mixed gender groups were equally likely to perform well. Similarly, Barham and Chitemi (2009) found that gender composition did not have any significant association with group performance. However, the results contradicts the findings of Westermann et al. (2005) who identified that women only groups were more effective than men only groups and mixed gender groups. Results further show, replacement system of leaders, whether elections or consensus did not have any statistical relationship with the ability of the groups to meet objectives. Instead, the number of leadership positions and having clear timelines group leaders can serve in office before they are replaced were important leadership structures that have a relationship with the ability of groups to meet objectives.

Results show that there is no relationship between education levels of members with the effectiveness of groups. Groups whose members' highest level of

education was primary/secondary and those that had members whose highest level of education was tertiary, were likely to perform the same. However, this study could not identify whether there is an association between age of members in a group (mixed, youth, elderly), wealth endowment of members (mixed/similar) and record keeping (whether groups keep records or not) with effectiveness of groups. This is because most groups had mixed membership in relation to age and wealth endowment; majority of the groups also kept records. For this reason, a statistical relationship between these variables and group effectiveness could not be established.

Findings from focus group discussions show that groups that had diversified their group functionality provided their members with more benefits than groups that engaged in one activity. The more activities groups engaged in, the more benefits members obtained from the groups. Given that the majority of the groups in both sites had diversified their activities, it was not statistically possible to establish whether groups that had diversified their activities were more effective than those that engaged in one activity. Barham and Chitemi (2009), however found out that groups that take on more than one activity performed better than groups engaging in only one activity. This could be attributed to more activities requiring effective structures in place for sustainability purposes.

CONCLUSION AND RECOMMENDATIONS

Findings from this study show that organizational changes in groups varied. Some changes were highly pronounced than others. Organizational arrangements that had moderately and highly changed include diversification of group activities, change in group size, incorporation of record keeping and committees. Organizational arrangements that had undergone minimal changes include group type, gender composition, number of leadership positions, enforcement mechanisms and duration of leadership tenure.

The organizational arrangements that were identified to have a relationship with effectiveness of groups are effective leadership and governance structures. Effective leadership structures include a considerable number of leadership positions and clearly outlined leadership tenure. Effective governance structures include committees, frequent committee meetings and putting in place more enforcement mechanisms. Additionally, groups that had diversified their activities provided their members with more benefits than groups that engaged in only one collective activity.

While leadership and governance structures were found to have a relationship with effectiveness of groups, it was evident from the study that these structures registered minimal changes. Even though group size registered high changes, it was identified not to have a relationship with the effectiveness of groups. Findings from this study also show that group age did not have a relationship with effectiveness of groups, thus older and younger groups were equally likely to perform well. This study thus proves wrong the assumption that older groups are more developed than younger groups.

The implication of these findings to development practitioners, who work with farmer groups at the grassroots level, is to provide well-targeted capacity development support that enhances the adoption of effective leadership and governance structures. The study proposes incorporation of suitable organizational structures in farmer groups that will enable them to achieve their objectives.

Conflict of Interests

The authors have not declared any conflict of interests.

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