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## GENDER AND GROUP DYNAMICS IN SUBSISTENCE AGRICULTURE

### *The Case Study of Kenya*

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### ABSTRACT

Sustainable food security and household income remains a major challenge among smallholder farmers in Kenya's semi-arid counties of Kitui, Machakos and Makueni. In this region, women do most farming through self-help groups which may be women or men led. Factors related to gender and group dynamics in subsistence farming are less understood and poorly documented. This study therefore sought to analyse and document the information on such factors. Using systematic random sampling procedure, data were collected from 165 farmers from Kitui, Machakos and Makueni Counties. Study findings showed that 99% of both male and female respondents belonged to farmer self-help groups and that group management was either female dominated (62%) male dominant (20%) or equal representation (18%). In male dominated committees, conflict of interests leads to poor group, while there was less conflict in women led groups. Results also showed that 37% of the respondents depended on family labour to do farming and that female farmers faced gender-specific constraints in farming which hindered them from improving farm productivity. The researchers concluded that networking enabled female farmers to pool financial resources to address household needs. Existing collective action among female farmers could be enhanced stakeholders in group management and leadership skills. Finally, effective strategies should be developed to address gender-specific constraints facing female farmers.

**Keywords:** Collective action, conflict of interests, gender-specific constraints, group leadership, household income, sustainable food security

### INTRODUCTION

Agriculture in Kenya contributes 26 per cent of the GDP annually, and another 25 per cent indirectly and accounts for 70% of informal employment in the rural areas and this positions agriculture as the main driver of Kenya's economy but also a means of livelihood for majority of the Kenyan people (KALRO-Katumani Annual Report 2014; Kenya National Bureau of Statistics, 2010). Mathenge *et al.* (2015) noted that, many rural economies of developing countries, especially most rural households in Kenya combine farming with off-farm work for their livelihoods. However, the returns from agriculture, which influence household income, depend on a farmer's ownership of assets and capacity to produce and market goods and

services efficiently. According to the Mutembei *et al.* (2015) and MOA's National Agribusiness Strategy (2012), smallholder subsistence farms whose average size ranges between 0.2 and 3 hectares (Ha) account for more than two thirds of Kenya's marketed agricultural produce. However, use of improved technologies such as certified seeds, fertilizers, pesticides and machinery among the smallholder farmers is relatively low. Wang'ombe and van Dijk (2013) noted that although evidence of high rates of returns from the use of improved technologies is available, uptake and usage of agricultural research-based technologies and innovations have not translated into rapid agricultural growth and poverty reduction among the resource-poor smallholder farmers. Food security and low household income are major challenges among the poor smallholder farmers in Sub-Saharan African (Maeda *et al.*, 2011). This is evident in the semi-arid areas of Kitui,

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Machakos and Makueni Counties, a region characterised by poor infrastructure; low, erratic and poorly distributed rainfall; food insecurity and low household income (Mutembei, 2015). A range of agricultural development stakeholders in the area have been making efforts to develop, validate and promote improved technologies and agricultural innovations for wider adoption in the region (Wang'ombe & van Dijk, 2013).

Such innovations include partnership for Gadam sorghum production and marketing which increased sorghum production from 21 metric tonnes in 2009 to 50 metric tons in 2012. Another innovation is the raising of finger millet in nurseries which gave the crop a head start two 90 kg bags of finger millet were harvested and earned the farmer Ksh 16,200 (\$162) and the late maturing crop was harvested for home use. This was significant considering he had not been harvesting any crop from this plot. Production of quality protein maize in Kathonzweni (Bett, 2014). Intermediary organizations that provide knowledge to producers and other users of agricultural information have not adequately taken up the available technologies already developed through research (Alene&Coulibaly, 2009) and hence the wide gap between research and farmers' yields and the less than satisfactory performance of agricultural development initiatives in the area. Thus, appropriate intermediary agencies and mechanisms are required to bridge the gap in order to sustainably enhance the adoption of improved technologies and innovations (Farnworth *et al.*, 2013). One way of involving these agencies is through mobilising and strengthening collective action by the farmers through involving more stakeholders in the already existing self-help farmer groups. A possible approach is the innovation systems based innovation platform which is more holistic and effective than the linear approaches due to its focus on strengthening all actors in the value chain (Anandajayasekeram & Gebremedhin, 2009, Rajalahti, 2009). Additionally, coordinated support to agricultural research, extension and education is crucial in promoting innovations, fostering innovation partnerships and linkages that go beyond agricultural product value chain (APVC) in agricultural development (Farnworth *et al.*, 2013). Interacting agents in the working groups can influence policy and provide a space for information sharing and dialogue on thorny issues such as transparency and accountability (Wells & Magara, 2013). Furthermore, the adoption of technology and innovation is greatly influenced by farmer characteristics and

circumstances under which the farmer operates as well as the innovation's relative advantage over the existing practice (Greiner, Patterson & Miller, 2009). The space for innovation is entrenched in, and constituted by the dynamics between social-cultural, biophysical, economic, political and legal subsystems (Schut *et al.*, 2011) within which farmer self-help group operate.

The farmer self-help groups are a form of collective action which refers to a voluntary action taken by a group to achieve a common interest and involves formulation and enforcement of rules to facilitate the intended purpose (Abdulwaahid, 2005). There are various forms of collective action such as voluntary self-help groups to higher level organizations like political parties among others. Due to the gendered social roles in any institution, it is necessary to consider gender perspectives due to their impact on the efficiency and effectiveness of collective action institutions. Literature on collective action shows that it arises where there are significant incentives to cooperate and some factors that encourage it are such as shared norms, social capital and effective leadership (Agrawal, 2001, Balland and Platteau 1999, Ostrom 1992). Quisumbing and Pandolfelli (2009) noted that decision-making on farming matters in Western Kenya has been the role of the elderly and the same situation exists in the semi-arid areas of lower Eastern Kenya, especially among households farming under communal land tenure. Despite the involvement of women in agricultural related activities in the semi-arid Eastern Kenya, factors related to group dynamics and gender in the region are inadequately understood. Our study uses gender as an organizing principle to understand the dynamics of self-help groups in the study region with a view to making recommendations that would contribute towards improvement of outcomes of agricultural development initiatives in the region.

**Objectives of the Study:** This study sought to determine the factors related to gender and group dynamics in innovative agricultural development in the semi-arid areas of lower Eastern Kenya. The objectives were to:

- a) Assess gender involvement and group dynamics in existing farmer self-help groups in the study area.
- b) Make recommendations for enhancing group management skills in agricultural development in the study area.

## **MATERIALS AND METHODS**

**Study Location:** The study was carried out in Kyuso and Migwani Sub-Counties (Kitui County), Machakos and

Mwala Sub-Counties (Machakos County) and Kathonzwani and Makueni Sub-Counties (Makueni County). The poverty level across the six Sub-Counties averages about 60% (Kenya National Bureau of Statistics, 2010). The inhabitants of the six Sub-counties engage in mixed subsistence farming where farmers grow drought tolerant crops and keep largely local animal breeds (Bett *et al.*, 2010).

Among the drought tolerant crops grown in the region are the high value traditional crops such as sorghum (*Sorghum bicolor*), Pearl millet (*Pennisetum glaucum*), Finger millet (*Eleusine coracana*), cowpeas (*Vigna unguiculata*), pigeon peas (*Cajanus cajan*), dolichos (*Lablab purpureus*), cassava (*Manihot esculantum*), sweet potatoes (*Ipomoea batatas*) and green grams

(Vignaradiata) (Ministry of Agriculture Kathonzwani Sub-County annual report, 2012; Ministry of Agriculture Kyuso Sub-County annual reports, 2012).

**Sampling and Sample size:** A list of the households in the selected villages was prepared and systematic random sampling was used to select respondents for the cross-sectional survey. A total of 165 respondents comprising 95 women and 70 men were sampled from a sampling frame of 1,171 households (Table 1). These households were involved in a public-private-partnership (PPP) development initiative to promote production and commercialization of Gadam sorghum in the region. The PPP initiative targeted existing self help farmer groups with a view to reaching more farmers during the initiative's implementation period.

County	Sub-County	Village (Group) sampled	Sample size	
Kitui	Kyuso	Kavaani	14	
		Mitamisiyi	16	
		Muruu	11	
	Migwani	Mwikiliye	16	
		Kivuli	13	
		<b>Sub-Total 1</b>		<b>70</b>
		<hr/>		
Machakos	Kathiani	Kathiani		
		Kinoini/ Katuaa	14	
	Mwala	Mang'auni	7	
		Utithini	11	
		Windala	14	
		<b>Sub-Total 2</b>		<b>46</b>
<hr/>				
Makueni	Makueni	Silanga	18	
		Yikiuuku	22	
	Kathonzwani	Ikaasu	9	
		<b>Sub-Total 3</b>		<b>49</b>
<hr/>				
<b>Total</b>			<b>165</b>	

Table 1. details of sample selection.

Both qualitative and quantitative data were collected, synthesized and analysed. Qualitative data were coded and transformed into quantitative data for ease of analysis using descriptive statistics—frequencies and percentages.

**RESULTS AND DISCUSSION**

**Group characterisation and management:** The respondents comprised 58% female and 42% male with (99%) of the respondents belonging to more than one farmer self-help group. The membership in groups ranged from 10 to 84 with a mean of 32 members, standard deviation of 16.40 and standard error of mean of 1.28. Eleven of the groups consisted of all male members and an equal number consisted of all female while the rest of the groups were mixed groups with male members

ranging from four to 25. The groups were managed by an elected committee whose gender composition varied from group to group. Twenty percent of the committees were male-dominated, while 62% were female-dominated and 18% had equal representation (Figure1).

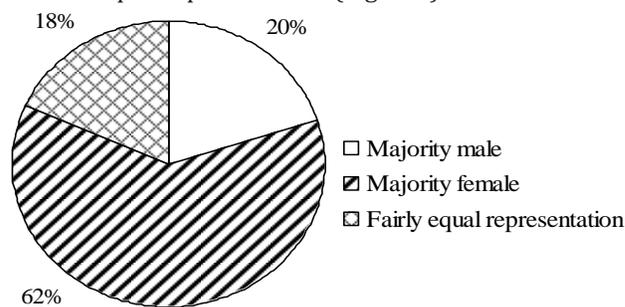


Figure 1. Respondents' group committee composition.

All female respondents belonged to more than oneself-help group and were engaged in rotational saving and credit activities (ROSCAs) locally known as merry-go round soil and water conservation activities as well as communal weeding and harvesting. One of the groups was engaged in farm produce aggregation for joint marketing. Findings agreed with Balland and Platteau (1999) and Aggarwal (2001) as well as Moore *et al.* (2014) who argue that socioeconomic state and customary norms are predisposing factors for collective action. Each farmer group had a particular day every week for carrying out group activities and due to women farmers membership in several farmer groups this turned out to be a very involving task for female farmers as they also bear the burden of domestic chores. Findings are similar to those of Yakasai and Fagwalawa (2013); Yemisi & Aisha (2009); Kabeer (2005) showing that female farmers do most of the farming activities and that despite 60-80% of married

womens' perform labour work, they bear the main burden of domestic work, or share it with their daughters. A study by Farnworth *et al.* (2015) explored the deliberate lack of recognition of the significant role played by women towards agricultural development. Several factors seemed to relate to group dynamics among the existing farmer self-help groups. Male dominance negatively affected group performance in achieving group objectives. On probing for reasons for male dominance and effect on group performance, respondents gave various opinions. Thirty five percent of the respondents felt that male group members were selfish or had vested or selfish interests, 24% felt that male group members had conflict of interests such as misappropriating group funds for activities other than those agreed upon while 4% felt that group members mismanaged group resources. However, 34% said there was no problem involving male members in group activities (Table 2).

Table 2. Expressed Opinions on how Male Dominance Affected Group Performance.

Opinion	Frequency	Percent
Men are selfish/ have self interests	58	35
Mismanage group affairs	6	4
Men have conflict of Interest	40	24
Men are impatient or have hidden agenda	5	3
No problem working with men	56	34
Total	165	100

Respondents said that female dominance in group committee improved group performance and gave several reasons for this. Majority (56%) of the respondents revealed that women were more cooperative among themselves unlike their male counterparts while 19% felt

that women were more patient and committed to group matters.

A further 16% of the respondents said that they did not have any problem working with fellow women in farmer self-help groups (Table 3).

Table 3. Expressed Opinions on How Female Dominance Does Not Affects Group's Performance.

Opinion	Frequency	Percent
Women are more cooperative among themselves	93	56
Women are mindful about each other	5	3
Women are more committed and or hard working	9	6
Women are patient/ tolerant and committed to group affairs	31	19
No problem working with women	27	16
Total	165	100

With regard to marital status, 84% of the respondents were married, 13% widowed, 2% single and 1% divorced (Figure 2). Widowed respondents observed that shortage of farm labour especially during the peak periods of the cropping season presented a major challenge. This partly explains the reason why some of the respondents could not adequately participate in technology and innovation

development and validation especially in on-farm experimentation. Education status of the respondents ranged from no formal education to post-secondary education. Only 3% had attained post-secondary education.

More than half (56%) womens had attained primary education, 30% had secondary education and 11% had no

formal education. Although Yakasai and Fagwalawa (2013) in their study observed that formal educational level did not affect women’s participation in development

programs, it could possibly contribute to low adoption of technologies and innovations, as observed by Quisumbing and Pandolfelli (2009).

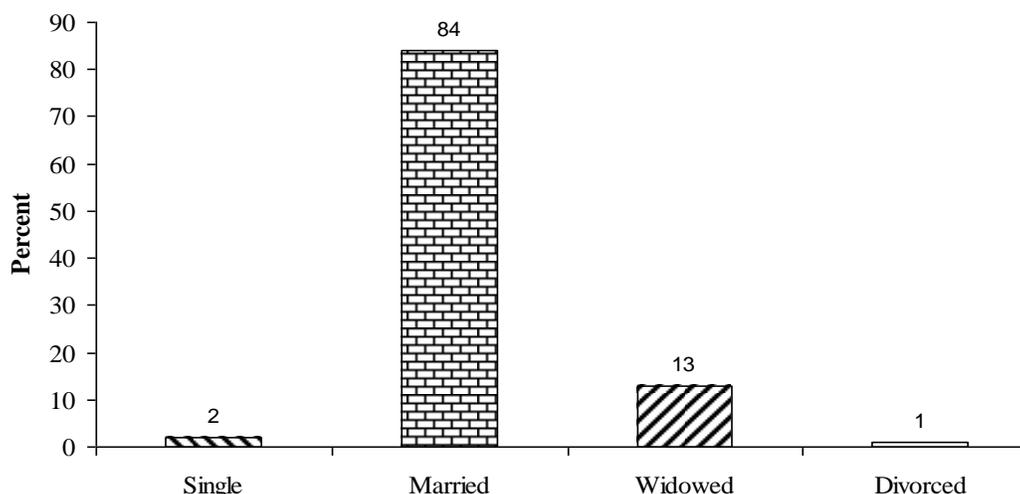


Figure 2. Marital status of the respondents.

Findings depicted in Table 4 reflected higher percentage of female respondents (56.4%) attaining primary education as compared to males (23.7%). However, almost the same number of male and female respondents had attained secondary education (Table 4). The higher percentage of female respondents sampled and interviewed seemed to indicate that their male counterparts who had attained formal education had migrated to urban centres in search of formal employment. Moreover, 19% of the respondents had attained post-secondary education in different fields, for example certificates in agriculture, adult education, nutrition and tailoring. Additionally, 81% had no specialised training.

Table 4. Relating Education Level of Respondent by Gender.

Education Level	Gender of Respondent				Total	
	Male		Female		Frequency	Percent
	Frequency	Percent	Frequency	Percent		
No education	3	2	15	9	18	11
Primary education	39	24	54	32	93	56
Secondary education	25	15	24	15	49	30
Post secondary education	3	2	2	1	5	3
Total	70	43	95	57	165	100

With regard to main source(s) of household labour, majority of households (61%) combined both family labour and hired labour to address farm activities, while 37% depended only on labour provided family members to carryout farm operations. Discussions with the respondents and observations made during the study showed that availability of adequate farm labour becomes crucial especially during land preparation (to achieve dry planting), weeding and harvesting. In such farming activities, women provided more household labour for weeding and harvesting. This agreed with findings by Farnworth *et al.* (2013) and Farnworth *et al.* (2015), which showed that women performed around 80% of the

labour on food crops and around 50–60% of the labour on commercial crops, yet did not benefit commensurately with their input.

Although off-farm income provided farmers with liquid capital for purchasing inputs such as improved seed, pesticides and fertilizers to enhance farm productivity, their pursuit the adoption of improved technologies and innovations that are labour-intensive. Pursuit of off-farm activities has been attributed to the reduction of household labour that could be available for allocation to the farming enterprises in respective households (ASARECA, 2013). Sources of individual household farm labour differed from respondent to respondent. Study

findings showed that majority (61%) of households combined both family labour and hired labour to address farm activities, while 37% depended only on labour provided family members to carryout farm operations. Only 2% of the respondents depended on hired labour to carryout farming activities (Figure 4).

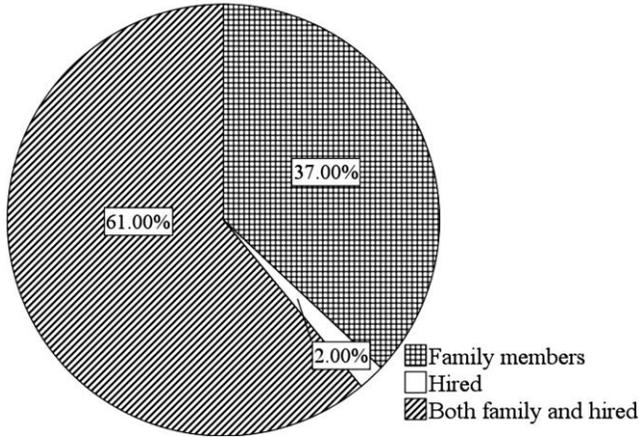


Figure 4. Household Main Source(s) of Farm Labour.

**CONCLUSION AND RECOMMENDATIONS**

Based on the study findings, the researchers concluded that resource-poor female farmers engaged in collective action to assist each other by pooling resources together. Existing farmer self-help group leadership comprised both male and female farmers. Male dominance in group leadership occurred in certain farmer self-help groups while in other group leadership there was female dominance. Individual farmer self-help group’s performance was negatively affected by male dominance in the group’s leadership. Resource-poor female farmers were more patient and committed to their group’s performance compared to male group members. Moreover, gender specific constraints hindered resource-poor female farmers in accessing production resources the semi-arid areas of lower Eastern Kenya and this affected the adoption of innovations in the study area.

The researchers recommend that since resource-poor female farmers were already involved in collective action through farmer self-help groups, development partners should take advantage of, and strengthen the existing group networking to reach more resource-poor farmers. Development partners should encourage networking among farmer self-help groups to strengthen their capacity and improve agricultural productivity in the target area.

Similarly, stakeholders should be aware of the dynamics in existing farmer self-help groups and put strategies in

place to address such group dynamics to foster development. Since male dominance negatively affected performance of individual farmer self-help group, development partners using such groups to reach more beneficiaries of development initiatives should address equal representation in group’s leadership. Additionally, since both male and female farmers belonged to the same self-help group, the group should put in place a mechanism that ensures individual group member commitment and participation in group development activities. Development partners should put strategies in place to effectively address gender-related and gender-specific constraints that mostly affect the resource-poor female farmers. Additionally, gender main-streaming in all joint development initiatives should form an integral part of the development agenda. To effectively promote improved technologies and innovations for wider diffusion and adoption, development partners should ensure the availability and accessibility of production resources by resource-poor female farmers matches such promotions. While promoting gender equality, the proponents should ensure the issues of age, marital status, and educational level are effectively addressed in planning and implementing development initiatives.

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