

Effects of Gender Roles on Food Security among Rural Households in Baringo North Sub-County of Baringo County, Kenya

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Abstract

Agriculture is the main contributor to rural livelihoods and food security in developing economies. However, household agricultural productivity and food security is a function of resource investments that are often subjected to gender influences in financial accessibility and ownership of property. This study examines the effects of gender roles on food security among rural households, with intention to providing information that enhances poverty reduction and economic equality among rural households in the area. The study adopted survey design, carried out in Baringo North sub-County with a population of 19,734 with a sample of 127 households, attained through simple random and systematic sampling procedure. The instruments of study were a questionnaire administered to select households. Chi-square method was used to evaluate the factors influencing farm productivity while descriptive data representation was done through frequencies, percentages, tables and charts. The results of the study showed that majority of the respondents (51%) were females while (49%) were male. In terms of household activities females (91%) dominated planting and weeding with men (80%) owning land. Land ownership affects agricultural production as shown by 98% of the respondents in that it tends to affect access to credit and farming activity to be done. Since most of the land is owned by men (80%), they generally influence the type of farming activity done and financial decisions made. Chi square analysis showed that there is a significant relationship between gender roles and food security as p value was less than 0.05, (p=0.000), which means that gender roles in the study area affect household food security, hence women need to be financially empowered to improve food security in Baringo. Also education level and land ownership strongly influence household food security. This study recommends that women be considered to mainstream agricultural development since maximum productivity cannot be met without involving them.

Key words: Gender roles, Food security. Household, Agricultural Production

INTRODUCTION

The concept of gender explains the socially constructed roles, behaviors, activities, and attributes that a given society considers appropriate for men and women (FAO, 2011). Gender is an important variable for analyzing the roles, responsibilities, constraints and opportunities in agriculture. Food poverty is measured by the per capita consumption of the

required daily intake of the basic recommended calories per adult equivalent. People are considered living in absolute poverty when their income level to meet all the basic needs, is a dollar a day or less (Enete *et.al* 2004). Food security is one of the growing challenges for the sustainable development in rural areas (Anyanwu, & Agu, 2006). According to Eboh & Ogbazi, (2000), providing sufficient quantity, quality and safe food to meet the rising demand of a growing population is a great challenge.

Globally, developed countries have achieved high levels of gender equality in agriculture and food security. Women are given the same access to resources, such as funds and because of such investment, national agricultural production has been recording a considerable increase with cases of malnourishment reduced by 12 to 17 percent (Lopez-Claros & Zahidi, 2005). In the USA for example, the government has put effort in developing its economy through the empowerment of women in agriculture (Kishor, 2000).

In Africa, gender issues in agriculture are top agenda in the research on agriculture and food security. The gap caused by gender inequality is the key reason why there is a slow rate of implementing gender responsive legislation policies, programmes and project in rural agriculture and household food security (O’Laughlin, 2007). Report by FAO (2011), notes that to ensure women's empowerment and full participation in rural development and food security, there is need for analysis of gender desegregated data in order to understand differential role in food and cash crop production as well as men's and women's differences in management and financial control over production, storage and marketing processes of agricultural products.

In the Kenyan situation, agriculture is termed as the backbone of household food and livelihood security for millions of rural residents. Farmers based in rural areas are considered the most secure in terms of food supply and proper nutrition (Ogundele, & Okoruwa, 2006). However, according to Bindlish, & Evenson (2003), the lack of gender equality in agriculture, rural women are vulnerable, since they contribute less in rural agriculture because they do not have equal access to social and economic assets and subsistence farming is the primary source of livelihood for most of these women. Rural women are less empowered in relation to economic and household decision-making, and discriminated against property inheritance.

Baringo North Sub-County is an agro-based region in Kenya. About (68%) of households in the area are male-headed, only 17% of women have access to extension services while 22% of women have access to credit services and the number of women who own land are less as compared to male farmers (Lagat, 2000). Little value addition is done to agricultural products by women. The area often suffers food insecurity which could be a result of gender disparities in agricultural production. The highest number of households is still run by male spouses.

RESEARCH METHODOLOGY

The Study Area

Baringo North Sub- County has an area of 1703.5 square km with a population of 93,789 (KNBS, 2013). The research study was carried out in three selected wards in the Baringo North Sub-County, namely Barwessa, Saimo/Kipsaraman and Saimo/Soi Wards. The main food crops grown are maize, green grams, beans, sweet potatoes, sorghum, cassava and

finger millet while the cash crops were coffee, cotton, macadamia and pyrethrum. Livestock products included honey, beef, mutton as well as hides and skins.

Research Design

The research design for the study used was a descriptive survey. The study used a target population of 19,734 households (KNBS, 2013). The subjects for the study were drawn from three selected wards from the Sub- County. For the purpose of attaining the objective of the study the household head was considered either the male or female in equal weight for married households. One extension officer, ward administrator and village leaders from the selected wards and villages were also interviewed to get a general overview of gender disparities in household agricultural production in the area.

Sampling and Sample Design

The study adopted both Simple random and Systematic sampling procedures to determine the sample size from three Wards in Baringo North Sub-County. There were five wards in Baringo North Sub-County namely; Barwessa, Kabartonjo, Saimo/Kipsaraman, Saimo/Soi and Bartabwa Wards. Three Wards were selected using simple random sampling, namely Barwessa, Saimo/Kipsaraman and Saimo/Soi Ward. Scientific sampling techniques were used to enable each household to have an equal and independent chance of being selected as a respondent. In order to sample households for interviewing, proportionate sampling was done then systematic random sampling applied where each of the households provided by the village elder were put in the sampling frame and assigned a unique number. The first case was numbered 0, the second 1 and so on. After this had been done sampling fraction was calculated to determine the frequency of household to be selected then the first household was selected using a random number and subsequently selected households systematically using the sampling fraction until a required sample was obtained.

According to Sumukwo (2013), the formula below can be applied to get desired sample size;

$$n = \frac{NC^2}{C^2 + (N-1)e^2}$$

Where n = Sample Size, N is Population Size, C is Coefficient of Variation (i.e. 30%), e is Standard error i.e. of 2 percent.

Therefore from the formula;

$$n = \frac{NC^2}{C^2 + (N-1)e^2} = 127$$

Thus a sample of 127 respondents was used in the study

Methods Data collection

Primary and secondary data were used for the study. Primary data was obtained using questionnaires that was administered to the randomly selected household heads and through observations made by the researcher. Secondary data was obtained from the internet, journals textbooks, and government offices.

Methods of Data Analysis

The data collected was analyzed using Statistical Package for Social Sciences SPSS Vs 20. The researcher used descriptive and inferential statistics to analyze the data into meaningful information that was used to make conclusions and recommendations. Chi-square analysis was used to evaluate the factors influencing farm productivity and food security. Graphic presentation was done using tables to present the data.

RESULTS AND DISCUSSION

Demographic Information of the Respondents

The results indicated that 51.2% of the respondents were female while the remaining 48.8% were male (Table 1). This implies that most of the household heads were female, the reason for this was that most male work in formal or informal employment, far from their homes. These findings are similar to those of FAO (2011) that the number of female-headed households is increasing significantly in rural areas in many developing countries since rural men migrate due to the lack of employment and opportunities in income-generating activities.

Further observations indicated that the female headed households had many challenges in accessing agricultural resources due to cultural influence on gender perspectives, this is the reason why most of their households were food insecure. These findings disagree with those of Silvestril *et.al* (2015) that food insecurity was not more severe for female-headed households than male headed households since most women concentrated much in the food security for their households than men.

Table 1: Demographics of the respondents

Characteristics	Male (%)	Female (%)
Gender	48.8	51.2
Education Levels		
No formal education	27.4	38.4
Primary	29.1	32.3
Secondary	16.1	15.4
Undergraduate	11.3	6.2
Middle college	12.9	6.2
Postgraduate	3.2	1.5
Land Ownership		
Yes	98.4	61.2
No	1.6	38.8
Level of Agricultural Income(ksh)		
Below 35000	8.1	44.6
36000-45000	24.2	18.5
46000-55000	29.0	13.8
56000-65000	19.4	9.2
66000-75000	12.8	4.7
Above 75000	6.5	9.2

It was found that 27% of the male respondents had no formal education compared with 38% of female respondents whereas 32% of the females and 29% of males had primary education, it was also noted that two percent of the females and three percent of males had postgraduate degree. Results indicate the majority of respondents (57% males and 70% females) had primary education and below (Table 1). This influences decision-making in the household productivity especially that most of the women are less educated reducing their ability to make productive decisions in the household. This agrees with findings by Lopez-Claros & Zahidi, (2005) that in terms of education, gender disparity is also well

documented, with girls receiving significantly less education as compared to boys. Lower levels of education imply that girls have lower chances to escape poverty hence less chance of contributing to agriculture and food security management in the house hold.

Results of the study indicates that most (45%) of the female respondents earned below Sh. 35000 per annum compared to 8 % of their male counterparts, while 29% of the males and 14 % of the females earned between Sh. 46000-55000 and 24% of the male respondents earned 36000-45000 with 19% of female respondents earning the same (Table 1). This implies that women earn less than men due to limited access to production resources and their multiple roles, affecting the household food security. These finding conquered with those of Kamga *et.al* (2016) that the low productivity of women is a result of social and economic constraints such as lack of funds to ensure timely field operations and lack of time to supervise work in their fields

It was found that 98% of the male and 61% of female respondents own land while 36% of the females did not own the land (Table 1), this makes it difficult for women to make farm decisions and to access credit facilities. Udry (2009) found that lack of access to credit facilities was as a result of lack of collateral, security required to secure loan for farm operations.

The Gender that plays a dominant role in household duties

The result showed males dominated land ownership (80%), crop & livestock farming type (59%) and marketing of agricultural goods (61%) as shown by most respondents. The female members of the household most dealt with planting & weeding (91%), storage of crops (73%) and household chores (99%) (Table 2). This implies that women are actively involved in production processes but limited in activities pertaining agricultural products. This partly agrees with a study by Mulugeta *et.al* (2014) that rural women regularly engaged and participated in critical farming activities including weeding, seed preparation, selling agricultural commodities, and harvesting while their participation is limited in ploughing farmland, spreading chemicals, and crop protection activities

Table 2: Percentages of Gender Playing a Dominant Role in Household Duties

Gender Role in the Household	Male (%)	Female (%)	Mutual(%)
Land ownership	80	19.1	0
Crop &livestock farming type	59.1	35.4	5.5
Planting & weeding	3.1	91.4	5.5
Storage of crops	25.2	73.2	1.6
Household chores	0.8	99.2	0
Marketing of agricultural goods	60.6	32.3	7.1

Effects of Land Ownership on Food Security

The respondents were asked the production activity affected by the state of land ownership in the household. The results were presented in Table 3. It was found that most of the respondents (97%) said that it affects the amount of money spent in the farm; followed by 95% who felt that it affected the type of farming activity to be done, 88% of the respondents said that it had an effect on access to credit facilities and 65% felt that it had an effect on the time of planting (Table 3). More information from the respondents was that women were the most disadvantaged in terms of land ownership hence the negative effect on their

productivity compared to their male counterparts because they are not able to get access to credit to boost their production. This agrees with a study by Udry (2009) who found that lack of access to credit facilities was a result of lack of collateral, security required to secure loan for farm operations.

Table 3: Percentages of Responses on effects Land Ownership Agricultural Production

Effects of land ownership	Frequency			
	Yes	%	No	%
Access to credit facilities	112	88.2	12	9.4
Type of farming activity to be done	121	95.3	3	2.4
Time of planting	82	64.6	42	33.1
Amount to spent in the farm	123	96.9	1	0.8

Chi-Square Test Analysis

Chi-square analysis test was done to determine the factors influencing farm productivity and household food security. The results shown in Tables 4, 5, and 6.

On effects of gender on food security, the $p=0.00$, which is less than 0.05 (Table. 4). This indicates that there is a strong relationship between the two variables thus the differences in the productivity of male and female. From the results in (Table.1), it is clear that level of agricultural income for men is higher than for women due to limited access to agricultural resources by women.

Table 4: Analysis of Relationship between Gender and Household Food Security

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	25.025	1	.000		
Continuity Correction	22.841	1	.000		
Likelihood Ratio	30.136	1	.000		
Fisher's Exact Test				.000	.000
N of Valid Cases	127				

From the chi square results above, $\chi^2(1) = 25.025$, $df=1$, $p=0.00$ where $p<0.05$. This means that there is a significant relationship between gender and household food security.

On the effects of education level on household food security, it evident that there is statistical significance as $p=0.00$ (Table 5). Which implies that households will be food secured if they have high levels of education since they shall employ improved technologies in their production process. It is also evident that the relationship between education level and food security is relatively strong.

Table 5: Analysis of Relationship between Education Level and Household Food Security

Chi-Square Tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	196.641	36	.000
Likelihood Ratio	94.282	36	.000
N of Valid Cases	127		

From the chi square results above, $\chi^2(36) = 196.641$, $df=36$, $p=0.000$ where $p<0.05$. This implies that there is a significant relationship between Education level and household food security.

Land ownership also has a strong relationship with food security as $p=0.008$ which is less than 0.05 (Table 6). This implies that if both genders will have equal rights to own land, then agricultural production in the household will increase hence increased food security.

Table 6: Analysis of Relationship between Land ownership and household Food Security

Chi-Square Tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.768	2	.008
Likelihood Ratio	9.634	2	.008
Linear-by-Linear Association	6.413	1	.011
N of Valid Cases	127		

From the chi square results above, $\chi^2(2) = 9.768$, $df=2$, $p=0.008$ where $p<0.05$. This means that there is a significant relationship between land ownership and household food security.

From the chi-square test, it is evident that gender, level of education and land ownership affect the state of food security in the household. If gender equality is observed in education, land ownership and household roles, Baringo North Sub-county will reduce the severity of food insecurity experienced in the area. According to Lopez-Claros & Zahidi,(2005) in developed countries women are given the same access to agricultural resources, such as funds, extension services and productive land, because of such investment; national agricultural production has been recording a considerable increase with cases of malnourishment reduced by 12 to 17 percent. Also FAO (2011) notes that, although both men and women farmers in most of the developing countries do not have access to adequate resources, women's access is more limited due to cultural, traditional and sociological factors which limits their productivity.

CONCLUSIONS AND RECOMMENDATIONS

Most women are left with most of the household duties and take the role of the household head due to the absence of the male spouse, yet their agricultural decisions are limited requiring consultation from the male spouse. This limits their productivity leading to food insecurity in the household. Also women are disadvantaged in terms of education in that most people prefer educating boys than girls due to cultural issues. Land ownership affects agricultural production and food security in a big way in that it tends to affect the amount of money spent in the farm and that it is the men who decide on the type of farming activity to do on the land. Thus the study recommends that better sensitization measures be put in place

to address issues on gender disparities in agriculture for the purpose of poverty reduction and to enhance economic efficiency and women should be considered to mainstream agricultural development since maximum productivity cannot be met without involving women.

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