

## Research Article

### Household Food Security among Women in Groups in Kaiti Division, Kenya

<sup>1</sup>Chadwick A. Digo, <sup>2</sup>Dean Koros and <sup>3</sup>Muleke M. Everlyne

<sup>1</sup>Human Nutrition Department, Egerton University, Egerton,

<sup>2</sup>Human Nutrition and Dietetics Section, Rift Valley Institute of Science and Technology, Nakuru,

<sup>3</sup>Crops, Horticulture and Soils Department, Egerton University, Egerton, Kenya

**Abstract:** Household food security remains a major challenge for most rural set ups in Kenya especially those in arid and semi arid areas. Women are significant in primary food production and wisely responsible for the household nutritional needs. They however face many constraints in their endeavor to secure food for their households including low education, low assess of land and credit. These factors are deepened with the ever changing climatic conditions. In order to counter these constrains, women in Kaiti have formed women groups as safety-nets to help them face these challenges collectively rather than individually. This study was designed to determine the relationship between household food security through improved access to education credit and other productive resources. The study used a cross sectional survey design. A sample of 234 respondents was selected through simple random sampling, with 141 being group members and 93 non group members. The data was analysed using SPSS package version 17 for windows and presented using frequencies, percentages and multiple regression. The study revealed that household food security is significantly and positively influenced by participation of women farmers in women groups ( $F = 9.761$ ,  $p = 0.000$ ), that the level of intensity of participation in group activities did not significantly influence household food security ( $x^2 = 0.112$ ) and that linking with outside agencies was positively and significantly correlated to group performance measured in terms of benefits availed to the members through their groups.

**Keywords:** Food security, household, women groups

## INTRODUCTION

Food security is a fundamental human right, yet millions of people continue to suffer the ravages of hunger and malnutrition (World Food Summit, 1996). Food security exists when all people at all times have physical and economic access to adequate, safe and nutritious food to meet their dietary needs and food preference (World Food Summit, 1996). Household food security is the application of this concept at the family level with individuals within the family being the focus of concern. Nyariki and Wiggins (1997) point out that food security encompasses food availability through farm production, storage or imports; and the access that people have to food through their purchasing power in markets. On the other hand, food access is determined by an individual's or household's access to adequate resources or entitlements; derived from human and physical capital assets, access to common resources and a variety of social contracts at family, community and state level, over which a person can establish command given the legal, political, economic and social arrangement of the community (Sen, 1981). A household's access to food is further

determined by the opportunities it has to utilize or exchange those resources to meet its food and material needs (FAO, 2003). Purchasing powers of a household, evolution of real incomes and food prices have been found to be important in ensuring food access (Schmidhuber and Tubiello, 2007). Sanchez (2002) indicated that, people go hungry in spite of an abundant supply of food at the global level because they cannot obtain sufficient quantity or quality food due to poverty. Tweeten and McClelland (1997) concluded that while food availability highlights the supply of food at national level and production at farm level, food accessibility highlights the effective demand and purchasing power of households.

In the last decade, the number of the undernourished people globally has increased slowly but steadily even before the twin food and economic crises of 2009 (FAO, 2009). In the year 2007, the number of people suffering from food insecurity increased from 848 million in 2003-2005 to 923 million (FAO, 2009). In Kenya, a third of the population is food insecure with two million people needing urgent interventions at any given time. This number increases during drought, heavy rains or floods with arid and semi arid areas (ASALs) being more affected.

**Corresponding Author:** Chadwick A. Digo, Human Nutrition Department, Egerton University, Egerton, Kenya

This work is licensed under a Creative Commons Attribution 4.0 International License (URL: <http://creativecommons.org/licenses/by/4.0/>).

Empirical evidence has shown that women are the engine that drives agriculture in developing countries especially in the SSA. They play an important role as food producers, natural resource managers, income earners and, caretakers of household food security (Quisumbing *et al.*, 2001). They produce 50% of food globally, while in Africa, Asia and Latin America they produce 60-80% of staple food (World Bank, 2008). Women are therefore crucial to ensuring household food security. They make food available in the household by engaging in varied activities such as small-scale farming, livestock keeping and the gathering of wild foods. They also access food through purchases and the collection of food donations derived outside of the home (FAO, 1987). However, women are faced with a lot of constraints in ensuring household food security. They have limited access to financial, land and social assets and have fewer opportunities to improve their knowledge and skills (Saito and Spurling, 1992). In response to the difficulties and responsibilities facing them, women have formed organizations based on traditional informal structures, governmental and international agencies to help them cope with the myriad of problems facing them and their communities collectively rather than as individuals (Kamar, 2001).

### **WOMEN GROUPS IN SUPPORT OF FOOD SECURITY**

The past decade has seen an upsurge of collective women enterprises both in developing and developed countries (United Nations Population Fund, 2009). Women's groups are used increasingly by development agencies and extension services as fora through which to disseminate expertise about improved agricultural and livestock production methods, information about health services and to demonstrate new technology (Udvardy, 1998). They are seen as useful entry points for testing technologies in rural areas and are widely recognized as the grass roots units through which change can be initiated and implemented, particularly with regard to family food production and nutrition (Mwaniki, 2009). Supporting the use of groups in agriculture and rural development; World Bank (2008), cited participation in groups as having clear benefits for the poor rural woman seen in increased assets, income and gains in control over the decision-making process.

In line with the third Millennium Development Goal, which advocates for gender equality and empowerment of women, the Government of Kenya has put in place specific policy measures in the Vision 2030 blue print to correct gender gaps in access of resources, economic opportunities and political voice (GOK, 2007). One way through which the government of Kenya is empowering women is through women enterprise funds where women entrepreneurs are encouraged to form groups to access credit with no collateral and at subsidized interest rates. The groups women form and belong to include self- help groups which, include micro credit and rotating savings and

credit groups popularly referred to as 'Merry Go Rounds', producer associations, women groups in water shed management and women farmer research groups (World Bank, 2008). By forming groups, women farmers' pool knowledge, skills and resources, gain access to services through collective action, enhance their bargaining power and advance claims to their rights through advocacy (World Bank, 2008). Women's groups provide a unique opportunity for women to build human and social capital and increase their capacity to participate fully in village and municipal government where decisions on production and marketing strategies are made (World Bank, 2008). Male extension agents also prefer meeting with women groups rather than individual women farmers especially where culture frowns at such meetings (Saito and Spurling, 1992).

However it is important to note that membership in groups is not automatic but requires payment of dues in return to access of group resources, in cash registration, shares or in kind giving labour or time to activities (Cohen *et al.*, 2005). Requirements for effective membership suggest that not everyone may necessarily benefit from group participation (Pretty and Ward, 2001). Katinka and Johannes (2001) observed that, group participation is not always and not for everybody an acceptable option but the benefits will depend on certain factors like; opportunity cost in terms of money and time, household and personal characteristics.

### **MATERIALS AND METHODS**

**Study area:** The study was carried out in Kaiti Division of Makueni County Kenya purposively selected due to the prevailing and persistent food insecurity. The Division is semi arid and 61.4% of the population lives below poverty line, which affects their food accessibility (Kenya Food Security Steering Group, 2009). The area Division receives an average rainfall of 600-800 mm/year, which is bimodal with the short rains being most reliable and occurring in the months of October to December and long rains in March to May. The rains have become increasingly erratic due to global climatic change. Soil is generally sandy clay and is easily eroded and leached. The major crops grown are maize, beans, cowpeas, pigeon peas, sorghum, millet, cassava, grafted mangoes and oranges.

**Design and data collection:** The research used a cross-sectional survey design that employed structured interview schedules to collect data. Population under study consisted of women farmers of households in Kaiti division. Two sub-groups were studied namely; women group members and non-group members in the division. Simple random sampling was used to select 141 women farmers from the women groups and 93 women farmers who did not belong to any women

groups. The type of data collected related to areas of demographic information, household sizes and benefits of participating in women groups, level of group participation in women groups and group partnerships with other agencies.

## RESULTS AND DISCUSSION

**Women group participation patterns:** Ninety three (93) women not members to any registered women group were investigated. Among these, 57 (61.2%) had never been members to any registered women group of which they cited time constraints and high membership fee as some of the reasons for not joining groups. The remaining 36 women non group affiliated participants had at one time been registered but opted out of the groups, with reasons including high fines for absence and lateness (22%), time constraints (23.8%), limited benefits (20%), leadership wrangles (13.3%), groups collapsed (16.6%) and ill health (4.1%). Groups which were formed to access handouts either from local or international NGO's, CBO's or the Government mostly collapsed after the handouts were over, echoing the findings demonstrated by Kariuki and Place (2006) on poor leadership, mismanagement of funds, failure to share benefits, inability to raise contributions and political interference as some of the reasons for disbanding the groups in central Kenya. 69.8% of women not in groups, considered members of groups to be better off as far as farm production and food security were concerned and indicated that they would consider being part of the groups if the pitfalls they were facing were addressed.

**Household food security status:** Household Hunger Scale (HHS) developed by FANTA was adapted to measure food security, with studies aim to was to correlate participation of women in women groups with

food security status of the respondents' household. The scale consists of three items and three frequencies, with a continuous scale score of a minimum of 0 and a maximum possible score of 6. A categorical measure with 3 categories of household hunger was used. Scores 0-1 classified as little to no household hunger, scores 2-3 moderate household hunger while scores 4-6 classified as severe household hunger. Table 1 shows the level of food security of the sample.

Results indicate food insecurity is still a problem in Kaiti Division. However, women in groups (group members) reported a higher household food security status than women not in groups non-group members. 32.5% of the women affiliated to the groups were found to be more food secure as compared to 13.2% or the non-women group participants who were found to be food secure. 47.0% of the respondents reported moderate food security while 27.8% were found to be severely food insecure.

A multiple regression analysis was carried out, to determine the influence of participation in women groups on food security. The analysis used age, education level, marital status, household size and group membership as control variables. The results of the regression are reported in Table 2.

Dependent Variable: Household food security, Adjusted R-square = 0.344, Regression ANOVA F-statistic = 9.980, df = 9, p-value = 0.000. Non-formal education was used as the base value for level of education.

The study revealed that household food security is significantly and positively influenced by participation of women farmers in women groups ( $F = 9.980$ ,  $p = 0.000$  at a significance level 0.05) even when age, education level, marital status, household size and farm sizes are held constant. This positive influence could imply that groups are relevant for dissemination of agricultural extension services and provide information

Table 1: Household food security status in Kaiti

| Category     | Food secure | Moderate food secure | Severe food insecure | Total  |
|--------------|-------------|----------------------|----------------------|--------|
| Group member | 46          | 68                   | 27                   | 141    |
|              | 32.5%       | 48.2%                | 19.3%                | 100.0% |
| Non-member   | 13          | 42                   | 38                   | 93     |
|              | 13.2%       | 44.5%                | 42.3%                | 100.0% |
| Total sample | 59          | 110                  | 65                   | 234    |
|              | 25.2%       | 47.0%                | 27.8%                | 100.0% |

Table 2: Multiple regression coefficients of explanatory variables on household food security (N = 234) in Kaiti

| Independent variables        | Unstandardized coefficients |       | Standardized coefficients |        |       |
|------------------------------|-----------------------------|-------|---------------------------|--------|-------|
|                              | B                           | S.E.  | $\beta$                   | t      | Sig.  |
| (Constant)                   | 2.659                       | 0.359 |                           | 6.614  | 0.000 |
| Age in years                 | -0.021                      | 0.059 | -0.249                    | -3.055 | 0.029 |
| Married; 1 = Y, 0 = N        | -0.182                      | 0.118 | -0.105                    | -1.533 | 0.119 |
| Lower primary; 1 = Y, 0 = N  | 0.270                       | 0.147 | 0.140                     | 1.886  | 0.069 |
| Secondary; 1 = Y, 0 = N      | -0.233                      | 0.126 | -0.129                    | -1.925 | 0.061 |
| Tertiary; 1 = Y, 0 = N       | -0.142                      | 0.223 | -0.042                    | -0.579 | 0.557 |
| Household size               | 0.117                       | 0.025 | 0.259                     | 3.869  | 0.000 |
| Group membership 1 = Y 0 = N | 0.213                       | 0.099 | 0.138                     | 2.042  | 0.039 |

about new technologies and also facilitate cooperation among farmers to allow members to tap the benefits of economies of scale. The implication could also be that women group activities have a direct positive influence on household food security. This agrees with household-based studies by Narayan and Pritchett (1997) who found that both formal and non formal groups had positive association with household welfare including food security in rural Tanzania. Similar findings were reported by Kariuki and Place (2006) who found that participation in groups substantially influenced household welfare in central Kenya.

### CONCLUSION

The study explored women group participation patterns in Kaiti and the influence of the participation on household food security. The findings of the study demonstrated women groups were relevant in pooling of resources through collective action including labour, marketing or any other activity that enabled group members to tap into economies of scale and hence participation in groups influences household food security positively and significantly even when controlling for age, education level, marital status, farm size and household size. The groups promoted farmers' empowerment by facilitating their ability to pool resources for common good, which is for improved agricultural production and household food security.

A few implications emerge from these findings. To begin with, the significance of women groups on household welfare suggests the need to develop their organizational and resource capacity to profit even more households. This could increase access to agricultural production resources hence increased farm production and growth in farm income. Second, groups which are not performing well should be supported to expand their productive opportunities in order to meaningfully improve rural livelihoods and food security. This assistance could be through partnerships with private and government agencies, which could promote groups access to a wider range of services and increase their effectiveness in provision of resources and services such as farm inputs, information, accessing markets and financial services. On the other hand, managing more complex, high value and costly resources can introduce new levels of complexity, financial obligations and need for skills that surpass the capacity of women groups. Hence, expanding group organizational structure in terms of leadership, management and community capacity building could help groups become more effective in generating positive outcome. Third, given the financial implications inherent in active participation in groups, the policymakers will need to address the disparities across households in group participation rates and in services accessible through the groups to ensure that the

poor benefit from group participation that often requires meeting upfront costs before realizing benefits. This measure is needed to fully realize the potential of groups in improving the welfare of the poor and the not so poor within the community.

### REFERENCES

- Cohen, M., M.J. Mccord and J. Sebstas, 2005. Reducing vulnerability: Demand for supply of microinsurance in East Africa. *J. Int. Dev.*, 17: 319-325.
- FAO (Food and Agriculture Organization), 1987. Women in Africa Food Production and Food Security. In: Gittinger, J.P., J. Leslie and C. Hoisington (Eds.), *Food Policy: Integrating Supply, Distribution and Consumption*. EDI Series in Economic Development. The John Hopkins University Press, Baltimore, pp: 133-140.
- FAO, 2003. Focus on Food Insecurity and Vulnerability. A Review of the UN System Common Country Assessments and World Bank Poverty Reduction Strategy Papers. FAO, Rome, Italy.
- FAO, 2009. Bridging the Gap. FAO's Programme for Gender Equality in Agriculture and Rural Development. FAO, Rome, Italy.
- GOK, 2007. Vision 2030. Government Printer, Nairobi, Kenya.
- Kamar, M., 2001. Role of Kenyan Women's Groups in Community Based Soil and Water Conservation: A Case Study of Mwehya Women's Groups in Machakos. In: Stott, D.E., R.H. Mohtar and G.C. Steinhardt (Eds.), *Sustaining the Global Farm*. Purdue University, West Lafayette, Indiana, U.S.
- Kariuki, G. and F. Place, 2006. Initiatives for Rural Development through Collective Action: The Case Study of Household Participation in-group Activities in the Highlands of Central Kenya. IFPRI, Washington, DC.
- Katinka, W. and P. Johannes, 2001. Women's participation in local organizations: Conditions and constraints. *World Dev.*, 29(8): 1391-1404.
- Kenya Food Security Steering Group, 2009. Machakos district long rains assessment report. KFSSG, Nairobi, Kenya.
- Mwaniki, A., 2009. Biotification as a Vitamin: A Deficiency Intervention in Kenya. In: Andersen, P. and F. Cheng (Eds.), *Case Studies in Food Policy for Developing Countries Vol. 1: Policies for Health, Nutrition, Food Consumption and Poverty*. Cornell University Press, Ithaca, New York, pp: 83-103.
- Narayan, D. and L. Pritchett, 1997. Cents and sociability-household Income and Social Capital in Rural Tanzania. Policy Research Working Paper No. 1796, World Bank, Washington, DC.

- Nyariki, D. and S. Wiggins, 1997. Household food insecurity in sub-Saharan Africa: Lessons from Kenya. *Brit. Food J.*, 99(7): 249-262.
- Pretty, J. and H. Ward, 2001. Social capital and the environment. *World Dev.*, 29(2): 209-227.
- Quisumbing, A., R. Meizen-Dick, E. Crowley, E. Koppen, B. Miller and T. Paris, 2001. Empowering Women to Achieve Food Security. A 2020 Vision for Food, Agriculture and the Environment. IFPRI, Washington, DC.
- Saito, K.A. and D. Spurling, 1992. Developing Agricultural Extensions for Women Farmers. In: World Bank Discussion Chapter No. 156. World Bank, Washington, DC.
- Sanchez, P.A., 2002. Soil fertility and hunger in Africa. *Science*, 295: 2019-2020.
- Schmidhuber, J. and F. Tubiello, 2007. Global Food Security under Climate Change. FAO, Rome, Italy.
- Sen, A., 1981. Poverty and Famines. An Essay on Entitlement and Deprivation. Claredon Press, Oxford.
- Tweeten, L.G. and D.G. McClelland, 1997. Promoting Third-world Development and Food Security. Praeger, New York.
- Udvardy, M.L., 1998. Theorizing past and present women's organization in Kenya. *World Dev.*, 26(9): 1749-1761.
- United Nations Population Fund, 2009. State of World Population 2009: Facing a Changing World: Women, Population and Climate. UNFPA, New York, USA.
- World Bank, 2008. Gender in Agriculture Source Book. The International Bank for Reconstruction and Development. World Bank, Washington D.C.
- World Food Summit, 1996. Rome Declaration of World Food Security. FAO, Rome, Italy.