



## Manifestations of income among rural household heads: Its implications on food security in Lugari Sub-County, Kakamega County, Kenya

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### Abstract

Today food security is a global problem. Most countries of the world especially in Sub-Saharan Africa and East Asia face severe instances of food insecurity. The situation has increasingly become an acute problem in Kenya especially in resource constrained rural households. Accessing enough food to meet nutritional and dietary requirements is still a challenge to most households the majority of which can manage only one meal per day. Although recent studies by The World Bank indicate that hunger has dropped to almost half of what used to be there in the last twenty years, it still persists in some areas in the world. Today 1 out of 9 people in the world go to bed without a meal because of their inability to access food. The situation has been worsened with the onset of Covid 19 pandemic. The Sustainable Development Goal number 2 has made eradication of hunger a priority but it still acknowledges that hunger still persists in some regions of the world. In Kenya it is estimated that over 10 million people cannot access adequate food. Therefore, empowering rural households to access sources of income can reduce instances of hunger among the poor. The objective of this study was therefore to assess manifestations of income in rural households as a tool for sustainable food security. The study was anchored on human resource theory and used a quantitative approach in which data was collected from a sample of 260 household heads by use of interview schedule and analysed using Chi-Square. The findings were presented in form of tables and frequency tables and percentages. The Spearman rank correlation was used to test the relationship between variables. The findings show that manifestations of income in rural households can reduce the re-current problem of food scarcity and hunger. The study concludes that accessing sources of income is a prerequisite of alleviating hunger because households will be able to purchase food in the right quantities. The study recommends that the government should enforce policies to strengthen access to sources of income among rural households. It also recommends re-introduction and strengthening of agricultural extension services to support the resource constrained poor at the grassroots to develop and increase production of food. The study will benefit the government and policy makers in Strategic National Reserve division, the County government and the Agricultural Extension division and the County Governments in Kenya.

**Keywords:** food security, hunger, households, policy, nutrition, income, agriculture

### Introduction

Food availability is a major issue of concern and although the world has enough food to feed everyone, an estimated 854 million people worldwide are still in a state of undernourishment (FAO, 2006) <sup>[10]</sup>, while another 925 million people are suffering from hunger globally. (World Hunger Education Service (2011) [www.worldhunger.org/articles/Learn/world%20facts201.htm](http://www.worldhunger.org/articles/Learn/world%20facts201.htm)) <sup>[23]</sup>. Food security, at the individual, household, national, regional and global levels is achieved when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life (Ombogo, 2017) <sup>[17]</sup>. Analysed at the household level food security is conditioned by a household's own food production and household member's ability to purchase food of the right quality and diversity in the market place (The World Bank, 2009) <sup>[24]</sup>. Today, the increasing level of hunger is still a global problem and no part of the world is immune. Estimates show that the number of those suffering from chronic hunger in the world topped one billion in 2009. The challenge that lies ahead is to secure the food security of these one billion hungry people and to double food production in order to feed a population projected to reach

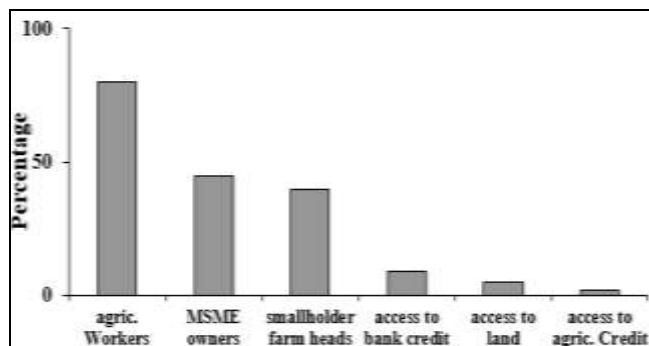
9.2 billion by 2050 (FAO 2009 <http://www.fao.org/3/a-i0680e.pdf>). <sup>[9]</sup>, with a large number facing hunger and malnutrition globally, the challenges of meeting food and nutritional requirements is likely to become even greater in the coming years (Quisumbing and Maluccio, 2002) <sup>[18]</sup>.

In Sub-Saharan Africa the problem of food insecurity is imbedded in policy and structural framework. During the past 30 years, agricultural production has risen by only 2 percent and agricultural exports have declined while food imports are increasing at about 7 per cent a year. Despite rapid growth in food imports an average of about 100 million people, are still undernourished (Chitere & Mutiso, 1993) <sup>[7]</sup>. This has led to a persistent circle of hunger in this region. For instance FAO estimates that perennial food insecurity in the world coupled with increase in food prices in 2007-2008 left one billion people undernourished (OECD Observer <https://oecdoobserver.org/>). <sup>[16, 14]</sup>. Eradication of hunger was therefore one of the Millennium Development's Goal during the last decade and responding to this goal, majority of member countries formulated programs aimed at reducing incidents of food insecurity by half the proportion of people suffering from hunger by 2015 (United Nations Summit 2010: <http://www.org/millenniumgoals.pdf>) <sup>[21]</sup>. This goal was not achieved at the end of the Millennium

Development Goals and hunger still remains a major problem. To achieve food security in households there is need to introduce income generating activities and creation of jobs to secure an income. Access to income will make it possible to reduce the number of people suffering from hunger by 100-150 million (OECD Observer <https://oecdobserver.org/>)<sup>[16, 14]</sup>. The Sustainable Development Goals still acknowledge that 1 out of every 9 people in the world experience hunger. As one of the priorities, Sustainable development goals plan to eradicate hunger by 2030.

The development and implementation of income activities have a substantial positive effect on the improvement and sustainability of the rural household's food security. Most African smallholders derive some income from activities outside primary agriculture (non-farm activities) away from their own farms (off-farm activities) or both (Reardon, 1997; Ellis, 1998; Bryceson, 1999; Reardon, 1997 cited in Barrett, *et al.* 2001a, p 367)<sup>[19, 8, 4]</sup>. Since income generated from these activities enable household to purchase food and enhance their food reserves, it is important for decision-making roles to be redefined and apportioned equally. However, there are very few women who can access loans due to their positions because they are employed or are in big time businesses and as such can provide security (Amanda, Ian, Clare and Judy, 2006)<sup>[1]</sup>. Those without education and working or are in some form of business cannot access credit. This can have significant impact on food security decisions.

Although Kenya has one of the most diverse financial systems in sub-Saharan Africa comprising 41 commercial banks, and a number of other financial institutions women rate access to finance is the single biggest constraint preventing them from growing their businesses and agricultural production. This is especially due to their limited land ownership (Amanda *et al* 2007)<sup>[1]</sup>, which has been acknowledged by the government of Kenya (Government of Kenya, 2005e)<sup>[6]</sup>.



Source: Amanda *et al* (2007)<sup>[1]</sup>.

Fig 1: Showing Women's Access to Resources in Kenya

Besides their employment as security, few women are able to provide security needed for loan requests (Amanda *et al* 2007)<sup>[1]</sup>. The few provider of microfinance targeting women especially the affiliate of Women's World Banking, the Kenya Women Finance Trust had about 78,786 active members at the end of 2005. This however, is still a small percentage of the total population of women in rural households in Kenya and offers only limited support to those who wish to grow their businesses beyond the micro level to include agricultural production (Coetzee, Kabbucho, and Minjama, 2002)<sup>[5]</sup>. This set back has adverse impact on

food security as women who cannot access credit to start businesses are not able to meet the challenges of food insecurity.

In Kenya, the agricultural sector is the mainstay of the economy providing food to the whole country. The sector directly contributes 24% of the Gross Domestic Product (GDP) and 27% of GDP indirectly through linkages with manufacturing, distribution and other service related sectors. Over 80% of the population, especially living in rural areas, derive their livelihoods mainly from agricultural related activities. As the World Bank (2009)<sup>[24]</sup>, observes, agricultural production determines food availability. The achievement of national food security is a key objective of the agricultural sector. However, the country has been facing severe food insecurity problem. This is depicted by a high proportion of the population having no access to food in the right amounts and quality. Official estimates indicate over 3.5 million people in Kenya are food insecure (Ombogo, 2017)<sup>[17]</sup>, with majority of them living on food relief. Households are also incurring huge food bills due to the high food prices. Maize being staple food due to the food preferences, it is still in short supply and most households have limited choices of other food stuffs (Kenya Agricultural Research Institute. <http://www.foodsecurityportal.org/kenya/food-security-report-prepared-kenya-agricultural-research-institute.>)

Food insecurity problems in Kenya are attributed to several factors, including high costs of domestic food production due to high costs of inputs especially fertilizer and low purchasing power for large proportion of the population due to high level of poverty. During 2016 to 2017 the agriculture sector declined to 1.6 per cent from 1.5 per cent the previous year due to drought coupled with pests and diseases (KIPRA, 2019)<sup>[15]</sup>. However, Growth in Agriculture Value Added at constant prices increased to 6.6 per cent in 2018 from 1.8 recorded in 2018 (Kenya Economic Survey, 2019)<sup>[14]</sup>. Leading to pa capita food consumption of an average of 69.5 kilograms of maize and its products. Despite this, the number of people facing hunger is still high. By the year 2011 the number of hungry Kenyans was 3.5million (Ombogo, 2017)<sup>[17]</sup>. There is need to empower both men and women to make decisions affecting food security at the household level. Although females have less access to education compared to males (International Food Policy Research Institute, 2000)<sup>[12]</sup>. But as more educational opportunities become available, this opens up investment in agriculture that can boost food production and food availability at the household level (Taiwan Review, 2008). In fact, FAO (2006)<sup>[10]</sup>. Points out that there is a strong relationship between food insecurity and lack of education.

**Objective of the Study**

To assess the manifestations of income among rural household heads and is implications of food security.

**Theoretical Framework**

This study is built on Human Capital Theory as propounded by Gary Becker (1994)<sup>[3]</sup>. It postulates the enhancement of education and skills amongst poor households that would enhance food security. The expenditure on training and education is an investment that increases personal incomes. Higher incomes distributed on the basis of gender among household heads can be used to purchase farm inputs to increase production per unit of land, it can also be used to

purchase the right seeds or it can purchase dairy animals to provide the family members with the much needed nutrition and therefore enhance food security in the household. The human capital approach explains occupational wage differentials that increases individual competences by increasing the income of household members. The wage of one member of the household gives rise to changed incentives for work on the market and a shift towards more investment on agricultural production. If significant investment is made to increase the income of men and women, this would significantly increase their investment in food production by spending their income on agricultural inputs which would then boost farming and enhance food security in households (Lengemann, 1988) [16].

**Methodology of Study**

The study was carried out in Lugari Sub-County of Kakamega County in Western Kenya. The Sub-County has an area of 670.2 km<sup>2</sup> located between longitudes 34<sup>o</sup> 28' and 35<sup>o</sup> East and between latitude 0.25' and 1<sup>o</sup> North of the equator. Most households are resource constrained small holder farmers engaged in maize production as the staple food with beans, sweet potatoes, cassava and sorghum grown to a limited extend and supplementing maize as subsistence crops. Sugarcane is grown as a cash crop while dairy farming is carried for nutritional intake and extra income for purchase of food. The study used a quantitative survey design approach with data collected through an interview schedule. A survey design was preferred because of its advantage in identifying attributes of a larger population from a small group of individuals (Babbie, 1990; Fowler, 2002) [2, 11].

**Sampling and Sample Size**

Purposive sampling was used to select the study site of Matete division of Lugari sub-county. It was further employed to select the two locations of Chevaywa in Matete and Lwandeti divisions because of homogeneity of the target population. A sample of 260 respondents composed of 130 males and 130 females was obtained using a systematic random sampling from the two locations. Data was obtained by use of a structured interview schedule and was analysed using Chi-square ( $\chi^2$ ) and presented in form of descriptive statistics, frequency tables and percentages. Spearman rank correlation was used to test the relationship between variables. The rank Correlation (Y) was used to measure the direction and level of the relationship between two variables at nominal and ordinal scales.

**Findings and Discussion**

This study sought to investigate the impact of manifestation of income on household heads and how this manifestation impacted on decisions made on food security in rural households. The chapter presents data collected by use of interview schedule from respondents in rural households from the study area of Lugari sub-county. Data collected was presented in a tabular form with the aid of frequency distribution tables. The study findings showed that majority of the respondents, 42% (110) were aged between 23 and 41 years with 26% (68) of this total being women while 16% (42) were males. Those who were between 42 and 60 years were 36% with males being 19% (49) while female respondents were 17% (45). The respondents aged 61 years and above were 21% (54) with female respondents

constituting 6% (15) of the respondents in this category, while male constituted 15% (39). A very small percentage 1.0% (2) of female respondents were in the age bracket of below 22 years as shown in Table 4:1 below.

**Table 1: Age and Gender of Respondents**

Age Bracket	Male		Female		Total	
	Count	%	Count	%	Count	%
< 22	0	0.0	2	1.0	2	1.0
23 - 41	42	16.0	68	26.0	110	42.0
42 - 60	49	19.0	45	17.0	94	36.0
61>	39	15.0	15	6.0	54	21.0
Total	130	50.0	130	50.0	260	100

**Employment**

The table below shows the number of respondents employed. Access to employment has direct relationship with income of an individual and therefore the standard of living and the level of decision-making on food security will depend on the income that an individual has. The employment showed the categories of employment that respondents engaged in. A total of 1.9 % percent both males and females were employed as professionals in various fields. Another 14.3% were employed in the technical fields and another 7.7% were employed in the service industry. The remaining 76.1% were unemployed as shown in the table below.

**Table 2: Position and nature of Respondent's Employment**

	Male		Female		Total	
	Count	%	Count	%	Count	%
Professional	4	1.5	1	0.4	5	1.9
& Managerial Technical	22	8.5	15	5.8	37	14.3
Service &	14	5.4	6	2.3	20	7.7
Skilled Unskilled	90	34.6	108	41.5	198	76.1
Total	130	50.0	130	50.0	260	100

Income in any household is essential for the achievement of good living standards. A family that has adequate income is able to plan and provide a balanced diet for its members. The study established that a bigger proportion of the respondents 75.8% (197) do not have any income while 6.5% earned over KES 15,000, 11.2% earned between KES 15,000-25,000 and 5.0% earned between KES 26,000-40,000 and a small percentage of 1.5 earned over KES 40,000 as shown in the table below. This observation is crucial because, as pointed out, access to income can enable an individual to purchase food and plan for its security in the household. Constrained access to income is likely to have a negative impact on food security.

**Table 3: Monthly Salaries of the Respondents**

	Male		Female		Total	
	Count	%	Count	%	Count	%
<15000	12	4.6	5	1.9	17	6.5
15000-25000	18	6.9	11	4.2	29	11.2
26000-40000	8	3.1	5	1.9	13	5.0
40000>	3	1.2	1	0.4	4	1.5
N/A	89	34.2	108	41.6	197	75.8
Total	130	50	130	50	260	100

The study also established that a number of respondents had other forms of personal income that enhanced their food purchasing power and placed them in a relatively better

position of accessing food. It showed that more men than women had extra income especially in areas such as commercial plots 3.1% (8) compared to women at 0.8% (2) and ownership of grinding mills at 1.5% (4) males compared to 0.4% (1) women. Ownership of general livestock was restricted to males at 3.5% (9). The study found that 11.5% (30) females compared to 11.2% (29) males engaged in dairy to give them some extra income but more married males than females were engaged in the hawking business. However, income from these sources was not stable enough to sustain food availability in households in the study area.

**Tabulation between Income and Scarcity of Food in the Households**

The study sought to establish whether there is any association between income and scarcity of food in households. Many households often face reduced food ratios due to severe scarcity. However, employment is always a basis of income in households because with a steady income from a job, one is able to purchase some food and avoid severe food shortage situations. A cross tabulation between employment and reduced food variety in households was analysed. The Chi-square analysis showed a significant association between the two variables. The Chi-square  $\chi^2=0.000$  was significant. Besides, the rank correlation  $r=0.000$  also showed a positive correlation between the two variables. For instance, the study found out that 47.7% (62)

of males who were not employed often experienced reduced food variety due to scarcity. Food variety normally includes beans, meat, peas, rice milk etc. The study also found that another 6.9% (9) who were not employed indicated that they experience reduced food varieties. However, a small percentage; 10% (13) who said they were employed stated that they never experienced reduced food varieties. This small number could be the male respondents who are able to purchase food varieties unlike those with low levels of education. The study also established that 39.2% (51) of the females not employed said they often experienced reduced variety of foods while another 6.2% (8) not employed by any organization also said they most often experienced reduced food varieties.

It is significant from this study that employment is a source of income. Once an individual is employed he/she is able to plan for the purchase of inputs to improve production and secure more foodstuff in the house. For those who may not be able to engage in farming, a steady income generated from employment enables one to purchase food in quantities and varieties. The study found that all respondents who had some gainful formal employment did not experience scarcity of food and did not also experience scarcity of variety of foods. They were able to purchase any type of food they needed. Those without any income not only experienced scarcity of foods but also experienced scarcity of most of the foods in the households as shown in the table below.

**Table 4:** Cross-tabulation between Income and Reduced Food Variety due to Scarcity

Whether the Respondent is Employed by any Organization	Men						Women					
	Yes		No		Total		Yes		No		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Reduced variety due to scarcity												
Never	13	10.0%	15	11.5%	28	21.5%	10	7.7%	9	6.9%	19	14.6%
Less Often	14	10.8%	9	6.9%	23	17.7%	6	4.6%	41	31.5%	47	36.2%
Often	12	9.2%	62	47.7%	74	56.9%	5	3.8%	51	39.2%	56	43.1%
Most Often	0	0.0%	5	3.8%	5	3.8%	0	0.0%	8	6.2%	8	6.2%
Total	39	30.0%	91	70.0%	130	100%	21	16.2%	109	83.8%	130	100.0%

$P < 0.05$   $N=260$   $\chi^2=0.000$   $r=0.000$  (Male)  $\chi^2=0.000$   $r=0.000$  (Female)

**Availability of the next meal**

The study also conducted a cross tabulation to establish an association between income and availability of the next meal in households. When a cross tabulation was done the study findings showed that there was a significant association existed between the two variables. The Chi-square analysis ( $\chi^2=0.000$ ) showed a significant association between whether one is employed (income source) and worrying about how to get the next meal. The rank correlation ( $r=0.000$ ) also indicated a significant relationship. For instance, 46.2% (60) of the male respondents without an income due to unemployment said they most often worried about how to get the next meal, 13.8% (18) said they never experienced the worry while 3.8% (5) said they worried most often. The rank analysis ( $r=0.002$ ) also showed a positive relationship. The cross tabulation established that 43.1% (56) of the female respondents without formal employment often worried how to get the next meal as shown in the table below.

The cross tabulation analysis established that there is a significant association between income and food security in households. Although the percentage of men is high, it is significant that the percentage of females is equally high.

More females than males worry about where to get the next meal. This is more significant for females because, as providers of food in the families, they stand a higher level of experiencing hunger. It is also possible that their lack of income is associated with gender manifestations because many men do not allow their wives to get into gainful employment especially if they (men) are not employed. It is also important to note that employment is one way of ensuring that one is able to have access to food in the house. One is able to purchase inputs and improve food production per unit of land.

The study also established that respondents skipped meals as a result of scarcity of food. The findings showed that of the 130 males interviewed 70% (91) of those who are not employed frequently skipped meals because of scarcity of food in their households. Of these, 46.2% (60) stated that they often skipped meals because of lack of sufficient food in their households while 3.8% of the males who do not have any form of employed said the situation is critical and had to eat only one meal a day. This category indicated that they could skip meals continuously for a month especially during the critical months when hunger is experienced in the entire neighbourhood. On the other hand, female

respondents who are not employed also reported high frequencies of skipping meals because of insufficient food supplies in their homes. If there was little to be eaten, then the children are given priority. A similar percentage 41.5% (55) of the 109 females not employed said they often skipped meals because of lack of food. The study established that very few employed female respondents skipped meals. Of the 21 who were employed only 3.8% indicated that they had skipped meals at any one time. This situation appeared to be cyclic in the sense that most households appear to be trapped in a persistent situation of food scarcity and hunger. Most of them stated that they eat only one meal a day mostly in the evenings. At times the situation is so critical that even the children and the aged in the homestead skip meals to allow at least a meal for everyone later on in the evening. According to Wakwabubi (2006) <sup>[22]</sup>, in such situations there was competition among children. While eating the weak ones would often cry for lack of enough to eat and would be compensated.

### Conclusion

Manifestations of income in rural households can easily change food security situation. From the findings and discussions, it is evident that if household members access a source of income however, little, this could be used to purchase food for the family. The findings show that most rural household heads do not have employment that would guarantee a monthly income for the family. This situation is a setback in terms of planning for agricultural production at the farm level or planning on how to purchase what is not available. Increased income can purchase a variety of food stuffs which can then increase availability of nutritional uptake necessary for good health for family members. It has been acknowledged that lack of income in household's leads to family members worrying about how they will get the next meal or skipping one meal which means eating only one meal a day. This is not healthy for the growing children who need a three meal course per day for their physical growth and development. Furthermore, skipping a meal every day because of scarcity of food is not good for the ageing population. The net effect of this is spiralling effects of hunger in the entire community leading to malnourished and stunted children whose proper growth and development is directly linked to availability of food at all times in proper quantities and nutritional value.

### Recommendations

It is recommended that the government comes up with policies that will stimulate agricultural production at a cost that the resource constrained poor could use to produce adequate food for their households. It is also recommended that the government re-introduces agricultural extension workers to advice farmers on how to engage in agri-business as a source of income for the families in poor rural households. It is also recommended that pragmatic decisions be undertaken to ensure continued access to education for all poor rural households. This will eventually secure them an income through employment or innovations that require a threshold of education.

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