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Analysis of Coping Mechanisms against Food Shortage Adopted By Households Farm Families in Gusii Highlands, Kenya

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Abstract: *The impact of food shortage among the households can be minimized post its occurrence through coping mechanisms. Coping mechanism are how well household farm families adapt to the threats of food shortages. The aim of this study was to establish coping mechanism used against food shortage among household farm families in Gusii highlands. A simple random sampling was used to obtain a sample of 246 respondents from a household population of 10,818 farmers. A structured questionnaire was used to collect data which was subjected to Microsoft Excel and Statistical Package for Social Sciences software (Version 20) for analysis. The findings revealed that 57.3% of the respondents were male while 42.7% were female. 73.2% of the respondents were married, followed by the single at 15.4%, the widow/widower and divorced/separated were represented by 9.8% and 0.4% respectively. Majority of the respondents had an age between 36 years to 55 years which translated to 48.0%, followed by youth of age between 18 years to 35 years translated to 30.0%, over 56 years of age were represented by 22%. The average age of the farming population was found to be 42 years. The findings further revealed that working more off-farm to buy food was the most preferred coping mechanism with the highest score of 343; followed by substitute crops at a score of 327.9 while, reducing other expenditure came third at a score of 281.2. Withdrawing children from school was the least preferred mechanism with the lowest score of 106.9; this means that, farmers of Gusii highlands value child education more than anything else. It is recommended that farmers should adopt more amicable coping mechanisms that can be easily reversible thus, avoid using those mechanisms that can jeopardize longer-term prospects in case of food shortage.*

Keywords: *Coping, mechanisms, food shortage, households, farm families.*

I. Introduction

The world food shortage continues to worsen as many countries struggle with daily starvation and hunger (Project Concern International, 2009). The increase in prices of the world staple food and poverty among the global population are the major factors responsible for the continuing world food shortage (Grebmer, et al., 2010). According to World Bank, (2008), approximately hundred million people have fallen into poverty in the last two years, for instance in 2007, Afghanistan households farm families were spending 75 percent of their income on food. As food shortage worsens due to escalating poverty, the households are more likely to employ mechanisms that are less reversible, and therefore represent a more severe form of coping and greater food shortage (Icheria, 2012).

Households farm family in Arid and Semi Arid Lands (ASAL) regions of Kenya for instance, are relying on undesirable coping mechanisms to reduce the impact of their households' food shortage, such as charcoal burning business which degrades the environment thus, endangering future crop production (WFP, 2009). Another factor that influences the global food shortage is the level of dependence on food imports from other countries; State of Haiti for instance, is the perfect example where over 80 percent of the staple food is imported and the consequence of it is that, over half of the country's population is under-nourished and 24 per cent of children suffer chronic malnutrition.

Several consequences of global household food shortage therefore, have manifested themselves and the demand for food aid is a serious consequence of the food shortage. Every year, 10 percent of Burundi's population requires food aid, (FAO, 2008). Poor health status exemplified in Benin is another consequence whereby almost a quarter of young children of less than 5 years are underweight. According to WHO, (2004), the globally malnutrition rates is sky rocketing, whereby in 2004 the global malnutrition rate was 15 percent.

The low food productivity and agriculture production has a direct bearing on the food economy of the households. Different coping mechanisms to mitigate the food shortages has exemplified among the household farm families (Uiane, et al., 2011). The effect of household food shortage can be reduced post its occurrence through coping mechanisms. Coping mechanism are how well farmer adapt to the threat of food shortages (Maxwell & Caldwell, 2008). Coping mechanisms therefore are 'ex post' measures that seek to minimize the impact of ill event once it has occurred (Rose, 2008).

In developing countries, few households own gardens to act as a supplementary source of food to meet household consumption requirements. A study conducted in Umbumbulu in Kwa-Zulu Natal province of South Africa to assess household coping mechanisms against food shortage indicated that, majority of the households farm families obtained foods through purchase represented by 93%, followed by own food production at 4% (Mjonono, Ngidi & Hendriks, 2009). Food shortage in Gusii highlands is associated with inadequate farming land caused by ever increasing population growth resulting into rapid land sub-division for people settlement, recurrent drought, crop pests and diseases such as maize lethal necrosis disease and soil fertility decline among others. The current study therefore was conducted to establish coping mechanisms against food shortage adopted by household farm families in Gusii highlands.

II. Materials And Methods

The Study area

The study was conducted in Kisii County which is located in the western Kenya. It lies between latitude 0 30‘ and 1 0‘ South and longitude 34 38‘ and 35 0‘ East. The County covers an area of 1,317 km^2 with a total population of 1,152,282 and 245,029 households. The county exhibits a highland equatorial climate resulting into a bimodal rainfall pattern with average annual rainfall of 1500mm with the long rains between March and June while the short rains are received from September to November. The months of July and January are relatively dry. The maximum temperatures in the county range between 21°C – 30°C while the minimum temperatures range between 15°C – 20°C. The high and reliable rainfall coupled with moderate temperatures is suitable for growing crops such as maize, beans, bananas, tea, coffee and pyrethrum as well dairy farming.

Sampling Procedure

A simple random sampling was employed to obtain a sample of 246 respondents from a household population of 10,818 farmers. The study applied fisher’s formula to yield a representative sample size (Mugenda & Mugenda, 1999). Questionnaires administered by enumerators were used to collect data on coping mechanisms employed by the farmers. Data were then subjected into the Microsoft excel and SPSS software for analyzed.

III. Results And Discussions

Distribution of respondents according to their gender, age and marital

Out of the 246 respondents who participated in this study 141 (57.3%) were male while 105 (42.7%) were female (Table 1). The age of the respondents was used as a proxy for farming experience, the findings indicated that majority of the farming population in Gusii Highlands had an age of between 36 years to 55 years which translated to 48.0 %, followed by the youth age of between 18years to 35years of age translated to 30.1 %, those with over 56 years of age were represented by 22% (Table 2). The findings further indicated that the average age of the farming population was 42 years. The majority of the respondents were married which translated to 73.2%, followed by the single at 15.4%, the widow/widower and divorced/separated were represented by 9.8% and 0.4% respectively as shown in Table 3.

Table 1: Gender of the respondents

Gender	Frequency	Percent
Male	141	57.3
Female	105	42.7
Total	**246**	**100.0**

Table 2: Age of the respondents

Age of the respondents (Years)	Frequency	Percent (%)
18-35	74	30.0
36-55	118	48.0
56-69	46	18.7
70 and above	8	3.3
Total	**246**	**100.0**

Table 3: Marital status of the respondents

Marital	Frequency	Percent (%)
Single	38	15.4
Married	180	73.2
Divorce/separated	1	0.4
Widow/widower	24	9.8
No response	3	1.2
Total	**246**	**100.0**

Coping mechanisms

Estimating the magnitude of a coping mechanism entails measuring the frequencies of the mechanism by ascribing weights, summing up the weights and then putting the result as a score (Maxwell & Caldwell, 2008, Icheria, 2012). Weights 1, 2, 3 and 4 were ascribed for this study as never, rarely, sometimes and mostly respectively. The weights were multiplied by the percentage of their frequencies and then were summed up to get scores of every coping mechanism (Maxwell & Caldwell, 2008). The higher the total relative weight, the frequent the mechanism is being employed by the household farm families and vice versa (Table 4).

The findings revealed that, working more off-farm to buy food was the most preferred coping mechanism adopted by the household farm families in Gusii highlands with the highest score of 353.1. It was followed by substitute crops at 342 and reducing other expenditure came third at a score of 285.5. Other coping mechanisms listed in order of merit were, Reduced frequency of food intake, Reducing the number of meals eaten in a day, Working Food-For-Work, Selling cattle and other small animals, Restricting adult consumption in favour of children, Skipping entire days without eating, Selling other assets, Selling farm equipment, Begging from neighbours, Gathering wild food, Receiving food aid and Sending household members to eat elsewhere with the scores of 253.9, 232.6, 233, 199.1, 180.4, 169.3, 166.3, 151.5, 140.4, 133.4, 123.5 and 120.1 respectively (Table 4).

Since most farmers of Gusii highlands value child education more than anything else, majority of the respondents indicated that withdrawing children from school was the last option to choose as coping mechanism against food shortage at a lowest score of 106.8. These findings concur with Uiane, et al., (2011) that, most of the households attach higher importance to working off-farm to generate cash to purchase food and subsidize their food economy before opting for withdrawing children from schools and other more severe mechanisms of mitigating food shortage. However, some coping mechanisms are divergent from the study of Uiane, et al., (2011); such as receiving food aid, reduced frequency of food intake and selling farm equipments was the least coping mechanism employed against food shortage. Increased reliance on coping mechanisms is associated with lower food availability (Mjonono, Ngidi & Hendriks, 2009).

The findings also disagree with the study conducted by Icheria, (2012), in Tharaka Central Division which revealed that, reduction in size of meals eaten was the most preferred mechanisms among the households of Tharaka Central, followed by reduction in the number of meals per day and Consume immature crop came third. Sale of charcoal and/or firewood was the least coping mechanism employed against food shortage in the region just like withdrawing children from school in Gusii highlands.

Table 4: Analysis of coping mechanisms employed by household farm families against food shortage in Gusii Highlands, Kenya

Coping mechanisms			Relative Frequency %								Total relative Weight	Rank
			Never		Rarely		Sometimes		Mostly			
	Mean	SD	wgt	%	wgt	%	wgt	%	wgt	%		
Working more off-farm to buy food	3.53	0.658	1	1.8	2	3.6	3	33.9	4	60.6	353.1	1
Substitute crops	3.42	0.796	1	4.4	2	6.1	3	32.6	4	56.9	342	2
Reducing other expenditure	2.33	0.951	1	10.2	2	13.6	3	57.1	4	19.2	285.5	3
Reduced frequency of food intake	1.07	0.252	1	13.6	2	27.7	3	50.3	4	8.5	253.9	4
Reducing the number of meals eaten in a day	1.99	0.799	1	22.5	2	25.8	3	48.3	4	3.4	232.6	5
Working Food-For-Work	1.66	0.732	1	28	2	17.3	3	48.8	4	6	233	6
Selling cattle and other small animals	1.51	0.706	1	30.6	2	41.8	3	25.9	4	1.8	199.1	7
Restricting adult consumption in favour of children	2.54	0.833	1	34.1	2	51.4	3	14.5	4	0	180.4	8
Skipping entire days without eating	2.85	0.847	1	47.8	2	37.1	3	13.5	4	1.7	169.3	9
Selling other assets	1.23	.0522	1	48.6	2	37.1	3	13.7	4	0.6	166.3	10
Selling farm equipment	1.40	0.597	1	60.2	2	28.7	3	10.5	4	0.6	151.5	11
Begging from neighbours	1.69	0.767	1	65.3	2	29	3	5.7	4	0	140.4	12
Gathering wild food	2.33	0.861	1	72.1	2	22.4	3	5.5	4	0	133.4	13
Receiving food aid	1.33	0.577	1	81.1	2	14.3	3	4.6	4	0	123.5	14
Sending household members to eat elsewhere	1.80	0.671	1	83.5	2	13.5	3	2.4	4	0.6	120.1	15
Withdrawing children from school	1.20	0.494	1	93.2	2	6.8	3	0	4	0	106.8	16

IV. Conclusions And Recommendations

Among the main coping mechanisms identified were working more off-farm to buy food, substitute crops and reducing other expenditure. These coping mechanisms were not detrimental to the small scale farmers' livelihoods; therefore the households' farm families were resilient to food shortage. Most farmers of Gusii highlands value education more than anything else, majority of the respondents indicated that withdrawing children from school was the last option to choose as coping mechanism against food shortage. It is recommended that, farmers should use a more amicable coping mechanism that can be easily reversible thus, avoiding those mechanisms that can jeopardize longer-term prospects in case of food shortage.

V. Suggestions For Further Research

Based on the findings of the study on household food shortage and coping mechanisms among small scale farmers in Gusii highlands, the following further research is recommended: A comparative study in relation to food shortage could be done covering both harvest and post-harvest seasons in the study area.

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