

Food Security Research Findings
and Recommendations

Laikipia County

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Zero Tolerance to Hunger
Kenya Constitution Article 43 (1)(c)

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List of Abbreviations and Acronyms

AEZs	Agro-Ecological Zones
AGRA	Alliance for a Green Revolution in Africa
AIDS	Acquired Immuno-Deficiency Syndrome
ASDS	Agriculture Sector Development Strategy
AWSC	African Women's Studies Centre
CAADP	Comprehensive Africa Agriculture Development Program
CCF	Christian Children's Fund
CDOs	County Development Officers
CSO	County Statistical Officer
ERS	Economic Recovery Strategy
FAO	Food and Agriculture Organization
FGDs	Focus Group Discussions
FISP	Farm Inputs Subsidy Program
GDP	Gross Domestic Product
GOK	Government of Kenya
IDPs	Internally Displaced Persons
IFPRI	International Food Policy Research Institute
IFSS	Integrated Food Security Strategy
JICA	Japan International Cooperation Agency
KDHS	Kenya Demographic and Health Survey
KNBS	Kenya National Bureau of Statistics
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
MOA	Ministry of Agriculture
M&E	Monitoring and Evaluation
MTEF	Medium Term Expenditure Framework
NACADA	National Authority for Campaign against Drug Abuse
NASSEP	National Sample Survey and Evaluation Program
NFSP	National Food and Nutrition Security Policy
NGOs	Non-Governmental Organizations
NREGA	National Rural Employment Guarantee Act
NREGS	National Rural Employment Guarantee Scheme
OVCs	Orphans and Vulnerable Children
PRSP	Poverty Reduction Strategy Paper
PWD	Persons with Disabilities
UoN	University of Nairobi

Definition of Key Concepts

Adequate food: Availability of food in sufficient quantity and quality to satisfy the dietary needs of individuals including being free from adverse substances.

Chronic hunger: A constant or recurrent lack of food that results in underweight and stunted children as well as high infant mortality.

Diversity and gender: An important component of food security due to the different roles played by women and men with regard to food security as the majority of women provide about 70 per cent of the labor force, either directly or indirectly, in the agricultural sector in Kenya.

Food: Everything that originates from biological sources and water, whether processed or not, and which is designated as an eatable or beverage for human consumption. It includes food additive materials, food raw material, and other materials used in the process of preparation, processing and or making an eatable or beverage.

Food access is ensured when households and all individuals within them have physical, economic, and social access to food and utilize adequate and appropriate foods for a nutritious diet.

Food availability is achieved when sufficient quantities of food are consistently available to all individuals within a country. Such food can be supplied through household production, other domestic output, commercial imports, or any other form of assistance such as monetary and food

donations/intergenerational transfers among other sources.

Food of acceptable quality: Food whose value of quality is determined as fit for consumption based on the criteria of food safety, nutrition content, and standards specified by the Cabinet Secretary or under the Standard Act or any other written law.

Food preservation: Prevention of food from decay, decomposition, or spoilage.

Food production: An activity or process of producing, preparing, processing, making, preserving, packing or repackaging and or changing the form of food.

Food safety: Condition and efforts required to prevent food from possible biological or chemical contamination and contamination by other objects which may harm or endanger human health.

Food reserve: National food reserve established under section 43 of the Constitution of Kenya.

Food security is a “situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (FAO, 2001; 2010).

Food storage: Place where food or food items are stored.

Freedom from hunger: A situation where all persons have access to a level of food that is capable of meeting the recommended minimum dietary

requirements as may be prescribed by the Cabinet Secretary from time to time.

Food insecurity: A situation that exists when all people do not have physical, social and/or economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life as defined above (FAO, 2010). The absence of food security is a multifaceted problem exhibited by famines and food emergencies. More importantly, food insecurity has a temporal dimension such that it can be chronic or transitory.

Food utilization is the appropriate biological use of food, requiring a diet providing sufficient energy and essential nutrients, including concerning issues relating to availability of clean water and adequate sanitation. Effective food utilization largely depends on knowledge within the household of food storage and processing techniques and basic principles of nutrition.

Global Hunger Index (GHI) is a multidimensional statistic describing national hunger. The GHI measures progress and failures of global anti-hunger efforts and is updated once a year.

Hidden hunger is a lack of essential micronutrients in diets and affects more than 2 billion people worldwide.

Household: A person or a group of persons residing in the same compound and who are answerable to the same head and share a common source of food. The three important ways of identifying a household are by ensuring that:

- a) People reside in the same compound;
- b) People are answerable to the same head; and

- c) Members share a common cooking arrangement (pool and share their resources for common provisions).

Household head: The most responsible member of the household who makes key decisions of the household on a day-to-day basis and whose authority is recognized by all members of the household. A household head could be the father, the mother, a child, or any other responsible member of the household depending on the status of the household.

Hunger is generally understood to refer to the discomfort associated with lack of food. The FAO (2010) defines it specifically as consumption of fewer than about 1,800 kilocalories a day – the minimum that most people require to live a healthy and productive life. Many definitions of hunger focus on calories.

Malnutrition: Poor nutritional status caused by nutritional deficiency or excess.

Malnutrition refers more broadly to both undernutrition (i.e., problems of deficiencies) and over-nutrition (i.e., problems of unbalanced diets) such as consumption of too many calories in relation to requirements with or without low intake of micronutrient-rich foods. Both conditions contribute to poor health.

Minimum amount of food: Amount of food required to meet the minimum nutritional needs of an individual according to age, sex, occupation and health status provided in kind, in equivalent monetary value, and in the form of vouchers or other prescribed manner.

National Sample Survey and Evaluation Program (NASSEP) frame generally consists of a list of households generated from a number of scientifically selected

villages and estates which ultimately represent other villages in the entire country in surveys that are conducted on the frame.

Right to food: The right of every person to have regular, permanent and free access, at all times, either directly or by means of financial purchases, to quantitatively and qualitatively adequate, sufficient and safe food, corresponding to his or her cultural traditions and which ensures a physical and mental, individual or collective fulfilling and dignified life free of fear of hunger or undernutrition.

Respondent: Any responsible member of the household who provides information to the enumerator.

Stability of food availability, access, and utilization (Sustainability) is ensured when a country addresses consistency of supply, access and utilization of foods among all citizens at all times.

Standard meal is a term used in this report to refer to three meals per day with the conventionally recommended calories of fat, carbohydrates, protein, and other nutrients, vitamins, and minerals.

Transitory food insecurity occurs when a population suffers a temporary decline in consumption due to instability in food production, food prices, household incomes, and health conditions.

Under-nutrition signifies deficiencies in energy, protein, essential vitamins and minerals, or any or all of these. Under-nutrition is the result of inadequate intake of food in terms of either quantity or quality or poor utilization of nutrients due to infections or other illnesses, or a combination of these two factors.

Vulnerable persons include infants, children, school going children, pregnant and nursing mothers, the elderly, refugees, internally displaced persons, people with disabilities, sick persons with chronic diseases such as HIV/AIDS, victims of conflict, rural people in precarious livelihood situations, marginalized populations in urban areas, groups at risk of social marginalization and discrimination and any other group that may be identified from time to time.

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"ASANTENI SANA".



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Executive Summary

The African Women's Studies Centre (AWSC), in collaboration with the Kenya National Bureau of Statistics (KNBS), undertook a countrywide household baseline survey on food security to establish the status of food security in Kenya. In addition to being a reflection of AWSC's recognition of the efforts made by the Government of Kenya towards implementation of food security for all, the study was in accordance with the mandate of AWSC to promote women's experiences, knowledge, needs, and contributions towards influencing national and county policies.

The survey was part of a broader project, funded by the National Treasury, which included documenting women's experiences on food security in 20 counties, developing programmatic and policy proposals, and initiating lobbying and advocacy activities directed towards influencing policy makers to adopt these proposals and to make budgetary allocations to fund them. It was also in line with the efforts being put in place to implement the Constitution of Kenya 2010 with particular focus on Article 43 (1)(c) which states that "every person has a right to be free from hunger and to have adequate food of acceptable quality" (Republic of Kenya, 2010).

The broad project objectives¹ were to establish the status of food security in Kenya and, through a consultative process, come up with proposals for ensuring food security in the country and share these proposals with policy makers.

This report outlines the research methodology, key findings, challenges, and recommendations thereof. The research was carried out in 20 counties selected from the country's six agro-ecological zones. The study covered 4,200 households in 440 clusters. In addition, the research teams held consultations with policy makers, including County Executive Officers, among them the Governors and the Members of the County Assemblies; representatives of civil society organizations (CSOs); representatives of institutions responsible for food security; and community opinion leaders, including religious leaders, women, and youth leaders. The research team was led by agricultural scientists and economists. Senior level management of the University of Nairobi and the Kenya National Bureau of Statistics participated in this research.

This report presents the results of the Household Survey on the Status of Food Security in Laikipia County and is part of the broader national report. The report makes recommendations on the way forward for Laikipia County. A key research finding at the national level was that, on average, 18 per cent of the population, which translates to 7.1 million Kenyans, are chronically food insecure suggesting that they are often or always hungry. The findings further indicate that the worst hit county, in terms of hunger, was Turkana County (54%) followed by Kisii County (41%), Migori County (34%), and Isiolo County (29%). Kirinyaga county was the least affected (3%) followed by Bomet (5%), Nakuru (6%), and Kiambu (7%).

Some of the factors found to contribute to food insecurity included high cost of farm

¹ Only objectives related to the household survey carried out by AWSC & KNBS are reflected in this report.

inputs; land fragmentation due to the cultural practice of land inheritance which makes agricultural land uneconomical among farming communities; large families particularly in the arid and semi-arid land areas; lack of storage and preservation facilities leading to post harvest losses; erratic climatic changes and lack of water for irrigation; insecurity; and poor infrastructure in the rural areas.

The research findings revealed that Laikipia County was food insecure, with 12 per cent of the respondents indicating that they were often and/or always hungry. This proportion of the respondents were regarded as suffering from chronic food insecurity. It is worth noting that households headed by women were found to be more food insecure than those headed by men. This observation correlates with the fact that men and women

were said to have unequal access to land which is a critical resource in food security considering that 35 per cent and 34 per cent of the respondents depend on livestock farming and crop farming respectively as their main sources of accessing food.

The AWSC has recommended policy and program proposals to address, both nationally and at the level of Laikipia County, the plight of Kenyans experiencing chronic food insecurity. The recommended programs are based on the participants' recommendations. The adoption and implementation of the proposed interventions will ensure that every Kenyan is food secure, which will go a long way towards the realization of the MDG 1, Kenya Vision 2030, and above all, the Constitution of Kenya.

Background and Context for the Laikipia County Report

1.1 Introduction

The African Women's Studies Centre (AWSC), which is based at the University of Nairobi, recognizes that the experiences of African women in almost all spheres of life have been invisible. This multi-disciplinary centre aims at bringing women's experiences, knowledge, needs, and contributions to mainstream knowledge and processes. The AWSC draws its membership from various colleges of the University of Nairobi, namely: Humanities and Social Sciences, Agriculture and Veterinary Sciences, Health Sciences, Biological and Physical sciences, Architecture and Engineering, and Education and External Studies.

It has been acknowledged that women play a central role in ensuring food and nutrition security in Kenya and other sub-Saharan countries because it is central to the achievement of human dignity. In the last few years, the AWSC has consolidated studies, research findings, and policy issues from Kenya and the region in relation to food security. The present budget submission by the AWSC was part of a process directed towards the achievement of meaningful engagement and contribution to the current national discourse on the implementation of Article 43 (1)(c) of the Constitution of Kenya (2010), which states that **"every person has a right to be free from hunger and to have adequate food of acceptable quality"**. The right to food for all is of crucial importance to the AWSC because the Centre appreciates the magnitude of the task and has a strategic

interest in the achievement of equity among the genders, the very poor, and other vulnerable groups in society. The full implementation of the constitutional provision means that the government must put in place strategies and structures to realize and institutionalize the availability of food to all in a sustainable manner. Food security is an issue of dignity and hence no Kenyan should go to bed hungry for any reason.

The AWSC recognizes the efforts made by the Government of Kenya towards implementation of food security. However, given the poverty situation in the country and the food security vulnerability, more needs to be done towards enhancement of an all-inclusive countrywide food security policy and programming. The AWSC has, therefore, chosen to focus on working with Parliament, county assemblies, the national and county governments, and other policy makers in order to ensure the implementation of Article 43(1)(c) that guarantees Kenyans the right to food.

The Centre also plans to complement and support the implementation of the Food Security and Nutrition Policy and other initiatives such as the National Social Protection Policy and the Agriculture, Fisheries and Food Authority Act, among other policy documents, aimed at ensuring food and nutrition security. The Project also takes cognizance of Schedule Four of the Constitution that devolves some of the

activities related to food security to the county governments.

The AWSC conducted the research reported here in collaboration with the KNBS during the calendar year 2013. The research covered the six agro-ecological zones in Kenya and 20 counties, namely: Kisii, Nairobi, Kiambu, Nakuru, Elgeyo-Marakwet, Kirinyaga, Kajiado, Bomet, Makueni, Bungoma, Taita Taveta, Migori, Trans Nzoia, Turkana, Baringo, Isiolo, Kwale, Mombasa, Nandi, Laikipia.

1.2 Objectives of the Research

The objectives of the research were to:

- Establish the status of food security in the country;
- Review best practices in institutional, legal, and policy frameworks for implementation of Article 43 (1)(c) and make policy recommendations at the national and county levels;
- Involve citizens' participation in the development of food security initiatives;
- Use evidence-based advocacy for greater allocation of resources for food security initiatives;
- Establish whether the economic, social and political pillars of Vision 2030 take into consideration food security concerns.

In addition, using the research findings, the team was required to evaluate the Vision 2030 pillars to establish their capacity to ensure food security; share the research findings with food security stakeholders (policy makers, civil society organizations and the general public) at the county and national levels; generate proposals for ensuring full implementation of Article 43 (1)(c) of the Kenya Constitution 2010; and document women's experiences, knowledge,

and perceptions in relation to food security and share the findings.

1.3 Efforts by the Kenya Government to Address Food Security

In 2011, the Kenya government developed the National Food and Nutrition Security Policy (FNSP) with the aim of adding value, building synergies, and supporting the implementation of existing national and sectoral policies and strategies to effectively address issues of food insecurity and malnutrition in the country. The current efforts so far have been inadequate in addressing issues of malnutrition comprehensively, thus the need to have an overarching policy that integrates food and nutrition security initiatives.

The Kenya Vision 2030 is a significant government policy document that aims to boost food security in the country through various flagship projects such as improvement of infrastructure, creation of more employment opportunities, and development of irrigation schemes among others. The vision for the agricultural sector is to be an "innovative, commercially-oriented and modern farm and livestock sector" (Republic of Kenya, 2007). If the Kenya Vision 2030 is properly implemented, it will mitigate food insecurity in the country considerably.

The Kenya Agriculture, Fisheries and Food Authority (AFFA) Act provides for the establishment of the Agriculture, Fisheries and Food Authority to administer matters of agriculture, preservation, utilization and development of agricultural land and related matters (Parliament of Kenya, 2013). Among other functions, the Authority shall, in consultation with the county governments, among other things: **(a)** administer the Crops Act and the Fisheries Act; **(b)** promote best practices in, and regulate, the production,

processing, marketing, grading, storage, collection, transportation and warehousing of agricultural and aquatic products excluding livestock products; **(c)** collect data and maintain a database on agricultural and aquatic products excluding livestock products; **(d)** determine the research priorities in agriculture and aquaculture; **(e)** advise the national government and the county governments on agricultural and aquatic levies; **(f)** carry out such other functions as may be assigned to it by this Act, the Crops Act, the Fisheries Act and any other written law.

The Constitution of Kenya represents the boldest move by the Government of Kenya towards achievement of food security and places the responsibility of ensuring food security to the Government through its provision of the right to food (Republic of Kenya, 2010). The right to food, as mentioned earlier, means that the Government shall not take actions that result in increasing levels of hunger, food insecurity, and malnutrition. Furthermore, the Government must use its available resources to eradicate hunger.

In the 2013/14 financial year, the number of beneficiaries of the cash transfer program for the orphans and vulnerable children (OVC) was doubled from 155,000 households to 310,000 households. Those receiving the Old People's Cash Transfer (OPCT) was also doubled from 59,000 to 118,000 households. The coverage of those with extreme disability was also increased from 14,700 to 29,400 households. The number of other disabled persons under coverage of cash transfer was also doubled. Further, about Ksh 400 million was set aside for the Presidential Secondary School Bursary Scheme for orphans and poor and bright students while Ksh 356 million was allocated for urban food subsidy. In addition, the government has shown

commendable efforts towards the provision of irrigation infrastructure including the largest irrigation scheme in the history of Kenya, the one-million-acre Galana-Kulalu in the Coast region.

1.4 Summary of the National Food Security Status

This section presents the results of the household baseline survey on food security in Kenya. Food security exists when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life. Household food security means applying this concept to individuals within the household. Conversely, food insecurity exists when people do not have adequate physical, social or economic access to food (FAO, 2010).

The findings of the AWSC/KNBS National Food Security Baseline Survey indicate that food insecurity in the country at the moment is at worrying, alarming, and unacceptable levels, with a large proportion of the sampled counties experiencing high levels of food insufficiency. Food and nutrition insecurity is one of the challenges currently affecting development in Kenya and is closely linked to the high level of poverty in the country; a situation that has serious implications on food security as the chronically food insecure suffer from extreme poverty (Republic of Kenya, 2008). In recent years, it is estimated that at any one time about 2 million people require assistance to access food. Moreover, the level of food insecurity usually escalates significantly during periods of drought, heavy rains, and/or floods. Ensuring food security and nutrition in Kenya is, therefore, a critical challenge.

The Household Baseline Survey on Food Security was carried out in 20 counties that

were scientifically sampled to represent the 47 counties in Kenya. Forty-five counties in Kenya (excluding Nairobi and Mombasa) were first classified into six Agro-ecological Zones (AEZs) of Kenya. The AEZs are Upper Highlands, Upper Midlands, Lowland Highlands, Lowland Midlands, Inland Lowlands, and Coastal Lowlands. An Agro-

Ecological Zone is a land resource mapping unit, defined in terms of climate, landform and soils, and/or land cover and having a specific range of potentials and constraints for land use (FAO, 1996). Figure 1 is a map of Kenya showing the 20 counties visited during the baseline survey.

Figure 1: Map of Kenya Showing the 20 Counties Visited



The red asterisks indicate the 20 counties visited.

1.5 Methodology

The methodologies used by the researchers included a household survey where 4,200 households, in 20 counties, were interviewed on their food security status using a hunger module to assess household experiences in the last 10 months before the study. The survey addressed the issues of availability, access, utilization, and sustainability of food. In addition to the household survey, the views of opinion leaders were sought using key informant questionnaires, focus group discussions, and debriefing sessions. Further, institutional questionnaires were administered to the County Development Officers to obtain the opinions of government officials on food security in each

of the visited counties. The counties sampled for the survey were Kisii, Nairobi, Kiambu, Nakuru, Elgeyo-Marakwet, Kirinyaga, Kajiado, Bomet, Makueni, Bungoma, Taita Taveta, Migori, Tran Nzoia, Turkana, Baringo, Isiolo, Kwale, Mombasa, Nandi and Laikipia. Initial research findings were shared with county governments, members of the county assemblies and members of the Civil Society Organizations for further input.

Research findings from the 20 counties and desk review on institutional, policy and legal frameworks were shared at a national workshop with the chairpersons of the agriculture committees of the county assemblies. Table 1 below gives details of the Agro-Ecological Zones in which the sampled counties fall.

Table 1: Agro-ecological Zones in Kenya and Sampled Counties for the Baseline Survey

Agro-Ecological Zones	Counties	
Upper Highlands	Murang'a	Meru
	Nyandarua	Nyeri
	Nakuru	Elgeyo Marakwet
Upper Midlands	Machakos	Nyamira
	Narok	Vihiga
	Kisii	Kirinyaga
	Kiambu	Trans Nzoia
Lowland Highlands	Uasin Gishu	Nandi
	Kericho	Laikipia
Lowland Midlands	West Pokot	Kakamega
	Tharaka Nithi	Kisumu
	Homa Bay	Embu
	Siaya	Kitui
	Busia	
	Kajiado	Bungoma
	Bomet	Taita Taveta
Makueni	Migori	
Inland Lowlands	Mandera	Tana River
	Wajir	Marsabit
	Garissa	Samburu
	Turkana	Isiolo
	Baringo	
Coastal Lowlands	Lamu	Kilifi
Urban	Kwale	
	Nairobi	Mombasa

Source: AWSC/KNBS Baseline Survey on Food Security, June 2013.

1.6 Conceptual Framework

Conceptually, food security is based on three pillars: availability, accessibility and utilization. The three pillars rest on a fourth dimension of stability as illustrated in Figure 2.

1.7 Rationale for Adopted Questions

The AWSC decided to focus on hunger as a major manifestation of food insecurity in the country. Hunger is usually understood to refer to the discomfort associated with lack of food. More specifically, the FAO (2010) defines hunger as consumption of fewer than about 1,800 kilocalories a day - the minimum that most people require to live a healthy and productive life. Achieving adequate food security is a necessary first step towards improved human well-being, the alleviation of poverty, and sustainable broad-based economic growth. The study adopted eight questions to measure the four dimensions of food security as illustrated in Table 2.

1.8 Key Research Findings

The research revealed that, on average, 30 per cent of Kenyans are often and always worried about not having food at the household level. The most worried communities were from Turkana (70%), Kisii (59%), Migori (53%), Kwale (47%), Trans Nzoia (42%) and Isiolo (35%) counties. The observation that over 30 per cent of Kenyans worry about hunger has a serious impact on their individual development and the health of their families and communities and ultimately on national development as a whole. The researchers, therefore, proposed that measures should be put in place to ensure that at least 7.1 million Kenyans are removed from this dehumanizing situation of constantly facing the threat of hunger. Kenya must declare zero tolerance to both hunger and worrying about hunger. Table 3 below ranks the 20 sampled counties from the least to the most food insecure based on the average manifestation of food insecurity as derived from responses to the eight questions.

Figure 2: Conceptual Framework of Food Security



Table 2: The Eight Study Questions Grouped According to Food Availability, Accessibility, Utilization, and Sustainability

Food Security Dimensions	Key Questions
Availability	E3: Did you or any household member eat a limited variety of foods due to lack of choices in the market? E6: Did you or any other household member eat fewer meals in a day because there was not enough food? E8: Did you or any household member go to sleep hungry at night because there was not enough food?
Sustainability	E1: Did you worry that your household would not have enough food?
Accessibility	E4: Did you or any household member eat food that you preferred not to eat because of a lack of resources to obtain other types of food? E5: Did you or any other household member eat smaller meals in a day because of lack of resources to obtain enough? E7: Was there a time when there was no food at all in your household because there were not enough resources to go around?
Utilisation	E2: Were you or any household member not able to eat the kinds of foods you preferred because of lack of resources?

Source: FAO, 1996.

Table 3: Manifestation of Hunger in the Last Ten Months

County	E01: Did you worry that your household would not have enough food?	E02: Were you or any household member not able to eat the kinds of foods you preferred because of lack of resources?	E03: Did you or any household member eat a limited variety of foods due to lack of choices in the market?	E04: Did you or any household member eat food that you preferred not to eat because of a lack of resources to obtain other types of food?	E05: Did you or any other household member eat smaller meals in a day because of lack of resources to obtain enough?	E06: Did you or any other household member eat fewer meals in a day because there was not enough Food?	E07: Was there a time when there was no food at all in your household because there were not enough resources to go around?	E08: Did you or any household member go to sleep hungry at night because there was not enough food?	Average manifestation of food insecurity for the country
	per cent	per cent	per cent	per cent	per cent	per cent	per cent	per cent	per cent
Kirinyaga	8.3	7.8	6.8	9.4	6.3	4.7	3.1	2.1	6.1
Nakuru	14.0	18.1	7.7	14.0	14.9	14.0	7.2	4.5	11.8
Kiambu	15.9	18.6	6.0	18.6	13.0	11.2	8.4	6.0	12.2
Kajiado	17.6	18.6	22.0	15.5	15.4	12.6	11.0	5.3	14.8
Elgeyo Marakwet	16.7	14.8	11.9	14.3	19.0	18.3	13.8	11.0	15.0
Bomet	22.8	25.5	20.8	18.3	14.7	14.2	6.1	3.6	15.8
Baringo	20.8	18.4	21.2	22.6	19.4	20.4	18.9	15.6	19.7
Taita Taveta	23.3	25.2	18.9	22.6	21.7	20.2	15.7	15.1	20.3
Mombasa	26.0	26.5	20.5	27.4	26.0	25.1	24.3	16.1	24.0
Laikipia	23.1	27.6	23.7	39.2	31.9	25.9	17.2	7.5	24.5
Bungoma	31.0	33.8	18.8	28.3	29.7	25.6	20.2	12.7	25.0
Nairobi	25.7	30.4	18.7	33.6	29.0	26.2	19.6	20.1	25.4
Isiolo	35.8	41.7	27.8	33.0	38.7	36.3	32.5	25.5	33.9
Nandi	30.2	38.1	16.7	36.3	33.0	28.4	23.7	12.6	27.4
Makueni	28.2	37.3	21.4	33.6	33.6	31.5	21.0	17.9	28.1
Kwale	47.1	48.6	25.7	39.0	41.9	43.3	24.8	16.7	35.9
Trans Nzoia	41.7	54.5	35.3	47.6	41.7	35.3	22.0	17.2	36.9
Migori	53.5	55.9	31.2	51.8	47.1	45.8	35.9	31.8	44.1
Kisii	59.1	68.0	62.6	70.7	62.1	62.9	47.0	35.5	58.5
Turkana	70.3	70.9	70.9	73.4	71.5	74.1	59.5	48.1	67.3

Source: AWSC/KNBS Baseline Household Survey on Food Security, June 2013.

1.8.1 Manifestation of Hunger with Averages of E07 and E08

Table 4 combines the answers of respondents who said they were often hungry and those who said they were always hungry. According to the researchers in this study, the responses to these two questions were aggregated because they indicate the highest manifestation of food insecurity. The

key research finding is that, on average, 18 per cent of Kenyans reported that they were often or always hungry. The research findings further indicate that the worst hit county in terms of hunger was Turkana County (54%) while Kirinyaga was the least affected (3%). Baringo County ranked eleventh with 17 per cent of the population being affected.

Table 4: Manifestation of Hunger with Averages of E07 and E08

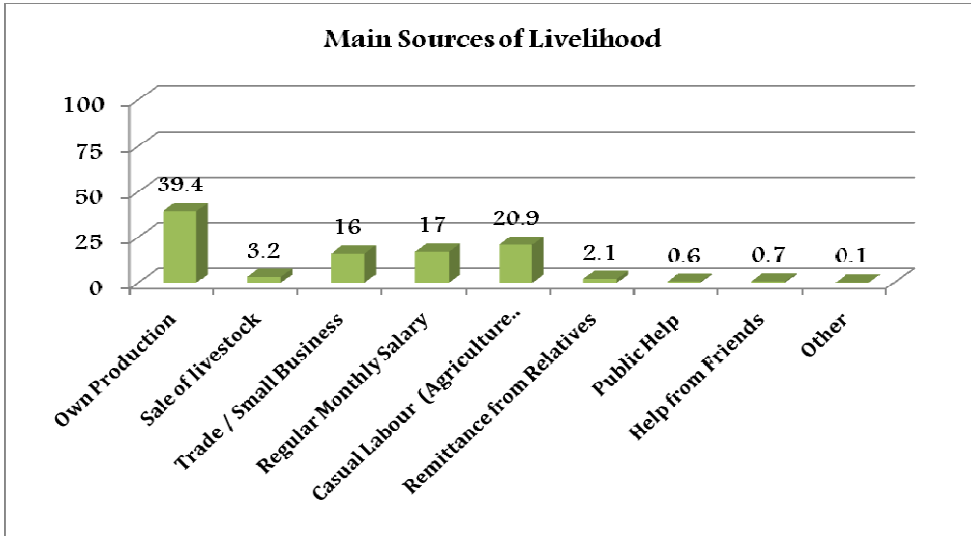
County Name		E07. Was there a time when there was no food at all in your household because there were not enough resources to go around?	E08. Did you or any household member go to sleep at night hungry because there was not enough food?	Average
1	Turkana	59.5	48.1	54
2	Kisii	47.0	35.5	41
3	Migori	35.9	31.8	34
4	Isiolo	32.5	25.5	29
5	Kwale	24.8	16.7	21
6	Mombasa	24.3	16.1	20
7	Nairobi	19.6	20.1	20
8	Trans Nzoia	22.0	17.2	20
9	Makueni	21.0	17.9	19
10	Nandi	23.7	12.6	18
11	Baringo	18.9	15.6	17
12	Bungoma	20.2	12.7	16
13	Taita Taveta	15.7	15.1	15
14	E. Marakwet	13.8	11.0	12
15	Laikipia	17.2	7.5	12
16	Kajiado	11.0	5.3	8
17	Kiambu	8.4	6.0	7
18	Nakuru	7.2	4.5	6
19	Bomet	6.1	3.6	5
20	Kirinyaga	3.1	2.1	3
Total		21.0	15.7	18

Source: AWSC/KNBS Baseline Household Survey on Food Security, June 2013.

1.8.2 Main Sources of Livelihood

Figure 3 shows the main sources of livelihood in the 20 counties visited.

Figure 3: Main Sources of Livelihood



Source: AWSC/KNBS Baseline Survey on Food Security, June 2013.

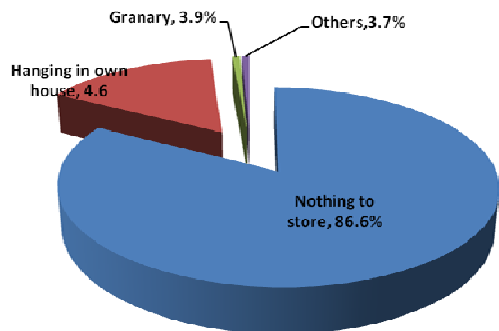
The findings also show that the sources of livelihood for the respondents in the 20 counties were mainly own production (39.4%); casual labor in agriculture and non-agriculture related activities (20.9%); regular monthly salary (17%); trade/small businesses (16%), sale of livestock (3.2%), remittance from relatives (2.1%); help from friends (0.7%) and public help (0.6%). It should, therefore, follow that interventions should center around improving the output of own production, offer more employment opportunities, and improve infrastructure to enable expanded trade/small businesses. Given these findings, we have made proposals in section 1.9 on how to improve food security in these three categories.

1.8.3 Preservation and Storage Methods

Figure 4 below shows the methods of storing perishable foods such as vegetables, fruits, meat and milk while Figure 5 illustrates the

methods of storing non-perishable foods such as cereals, pulses, roots, and tubers.

Figure 4: Methods of Food Storage (perishable)

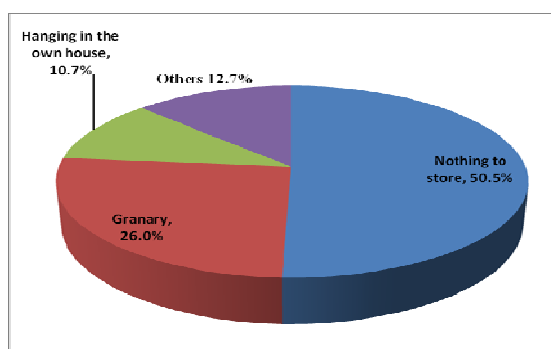


Source: AWSC/KNBS Baseline Survey on Food Security Baseline, June 2013.

Figures 4 and 5 reveal that the majority of the respondents indicated that they had nothing to store with 86.6 per cent saying they had nothing perishable to store while

50.5 per cent said they had no non-perishable foods (i.e., cereals and pulses including beans, cow peas, maize, rice and rice) to store.

Figure 5: Methods of Food Storage (non-perishable)



Source: AWSC/KNBS Baseline Survey on Food Security Baseline, June 2013.

1.9 Key Policy and Program Recommendations for the National Food Security

The research findings indicate that at least 7.1 million Kenyans (18%) Kenyans are often or always hungry. These figures have great implications, especially for the development of the potential of children. Therefore, the implementation of Article 43 (1)(c) must be regarded as a priority for Kenyans. Among the key recommendations emanating from the research carried out in the 20 counties, the AWSC has prioritized seven critical areas that need urgent attention. However, AWSC recognizes that some of these recommendations need long-term planning.

1.9.1 Water for Irrigation and Domestic Use

Over 80 per cent of the land area in Kenya is classified as Arid and Semi-Arid Land (ASAL) because it is affected by moderate to severe land degradation and desertification. About 10 million people (30 per cent of Kenya's population) live in the ASALs with over half of

this population living below the poverty line. From our study, most of the respondents from the ASAL areas which included Kwale, Isiolo, Elgeyo Marakwet, Laikipia, Taita Taveta, Makueni, Kajiado, Turkana, and Baringo proposed the introduction or scaling up of irrigation. While appreciating the great effort by the Government, the AWSC proposes the following measure in order to meet the great demand for water by the counties in the ASAL region:

Rain water harvesting: Purchasing of materials and equipment for water harvesting such as tanks, pipes, water pumps, borehole drilling machinery, and gutters to ensure rain water harvesting in schools, health centers, urban centers.

1.9.2 Family Support Program

Given the level of food insecurity in all the counties visited, and the fact that at least 18% of Kenyans or 7.1 million people are often or always hungry, the national government (through the county governments) should establish a family support program for those severely affected by hunger. Following the example of India and Brazil, the Kenya government should focus directly on the affected households to ensure that they have access to food through either increased production (40 per cent produced their own food), creation of employment for casual laborers (21%) and opportunities for markets and trade (16 per cent who engage in trade and small business).

As in the case of India, in order to ensure efficient and transparent targeting of the food poor households, we recommend the establishment of a clear legal framework to ensure the implementation of a family support program that will address this category of Kenyans and redeem them from the dehumanizing situation while also

responding to Article 43 (1)(c) of the Kenyan Constitution. This action will demonstrate that Kenya is truly committed to zero tolerance to hunger and will set the pace for the entire region. We, therefore, propose that within the 2014/2015 budget the government should commit itself to reducing by 10 per cent the population of those who are often and always hungry by undertaking the following measures:

- i) **Targeting own producers** The national and county governments should target each of the households that produce their own food to ensure increased food production. The family support program could ensure that the 40 per cent of households in this category have access to farm inputs, information, and markets for their produce.
- ii) **Stabilizing farmer's income:** County governments should prioritize the buying of food directly from the farmers to ensure minimum guaranteed returns for them.
- iii) **Value addition and markets:** From the research 50.5 per cent of the respondents said they had no non-perishable food while 12.2 per cent stored perishable food. Poor storage and lack of markets were common problems faced by almost all the respondents. We, therefore, propose the allocation of resources to set up processing plants in all the counties as per the needs assessment of each county. Baringo County, for instance, where a lot of tomatoes go to waste during periods of bumper harvest may require a tomato processing plant. Similarly, Nakuru and Makeni counties may require vegetable canning and mango processing plants respectively.

1.9.3 County Strategic Food and Water Storage

Wastages and losses incurred as a result of diseases and pests attacking the produce, poor weather, destruction of produce by wild animals, and lack of adequate storage facilities during surplus production contribute to the massive food insecurity reported during the survey. We estimate that on average the counties will require 850,000 bags of grain search, that is, about 40 million bags for the entire country. We recognize that Schedule IV of the Constitution gives the responsibilities of health, agriculture and social services among others to the county government. We therefore propose support for the establishment of county strategic food and water reserves in each county.

1.9.4 One Job for Every Poor Household

The government should develop a policy that allows the county and national governments to identify the hungry households and create employment for at least one person in the household for at least 200 days in a year. This arrangement will cater for 21 per cent of the respondents from our study who indicated that they are engaged in casual labor as a source of livelihood. The ultimate objective of this project is to create employment for at least 200 days per year for one person in a poor family for households that have no one with wage employment. In counties such as Isiolo and Turkana where food insecurity is high, the government should identify and provide employment for two persons per household. The beneficiaries of this program will be engaged in green jobs which include water conservation and water harvesting; drought-proofing (including forestation and tree planting to increase forest cover to 10 per cent of the land mass of Kenya); construction of irrigation canals, including macro and minor irrigation works;

and construction and maintenance of roads, government buildings, and other structures.

1.9.5 Cash Transfer

The government has shown commendable efforts towards the allocation of funds to the elderly, orphans and vulnerable children as well as the persons living with disabilities. However, many respondents (86%) registered their dissatisfaction with the management, allocation and distribution of the funds. We, therefore, recommend that the food security county committees proposed herein should be given the responsibility of overseeing the proper targeting of beneficiaries including monitoring and evaluation of the implementation process. In addition, exit strategies should be provided for the beneficiaries.

1.9.6 Drug and Alcohol Abuse

The abuse of drugs and alcohol was a major contributor to food insecurity in the counties visited such as Kiambu, Mombasa, and Kirinyaga. We propose increased support to NACADA to deal with this problem. We also propose the establishment of a fund to cater for the rehabilitation of the affected people, especially the youth.

1.9.7 Increased security

The 2014/2015 national budget allocation for security is high given the current security situation in the country. Research also showed that insecurity was a major contributor to food insecurity across the counties. According to the respondents, insecurity was caused by among other facts, village gangs who terrorize the owners of small businesses. These gangs also target the farmers by milking their cows and stealing their crops and livestock. Increased human-wildlife conflict was another problem raised by the respondents. We, therefore, propose

that 15 per cent of the total budget for security should be allocated to initiatives aimed at combating insecurity and maintaining peace at the community level. This action could contribute to ensuring food security in counties such as Isiolo, Turkana, and Mombasa where many of the respondents indicated that insecurity was a threat to food security.

1.9.8 Implementation Mechanism for County Food Security Programs

Given the research findings discussed in detail in this report, we propose the establishment of County Food Security Committees comprising of the county executive officer in charge of agriculture; two social services persons of opposite gender with knowledge and experience in matters related to food security appointed by the Governor; and two persons of opposite gender to represent special interests also appointed by the Governor. These committees will monitor the food security and nutrition situation, evaluate the progress of implementation of the food security programs in the county and provide guidelines for the selection and appropriate targeting of food insecure families and individuals in the county among other functions.

1.9.9 Economic Empowerment of Youth and Women

The Government's efforts to provide employment, especially for the youth and women, are indeed commendable. The various initiatives such as the Women Enterprise Fund, Youth Enterprise Fund and Uwezo Fund will contribute and make it possible for many youth and women to engage in gainful employment but still a lot more needs to be done. The majority of the youth remain unemployed and some even resort to social ills as a means of livelihood.

Our research findings showed that 30.3 per cent of the respondents from our study were youth between the ages of 15-34 years and increased opportunities will make it possible for them to engage in meaningful employment. The Funds should be enhanced and more young people trained on how to utilize the funds to avoid mismanagement and defaulting on repayment of money from the fund.

1.9.10 Enforcement Mechanism for Ensuring Food Security

The AWSC proposes that a legislative framework should be developed that will

enforce food security programs including the family support program, cash transfer, and other initiatives aimed at the implementation of Article 43 (1) (c) of the Constitution. This is in line with best practices in other countries such as Columbia, Mauritius, South Africa and India.

More details of the findings of the research project on the 20 counties can be found in the National Report on Food Security that the counties will receive from the University of Nairobi. The chapters that follow will present the key findings of the research for Laikipia County.

Laikipia County Food Security Research Findings

2

2.1 Introduction

Laikipia County is located on the Equator in the former Rift Valley Province of Kenya and constitutes three constituencies: Laikipia East, Laikipia North, and Laikipia West and five sub-counties namely: Laikipia North, East, West, Central, and Nyahururu. The county borders Samburu County to the North, Isiolo County to the North-East, Meru and Nyeri counties to the South, Nyandarua County to the South West, and Baringo

County to the West. Figure 6 is a map of Laikipia County.

As at the time of the 2009 population census, Laikipia County had an area of 9,462 Km² with a population of 399,227 of which 49.8 per cent were males and 50.2 per cent were females. The poverty level in the county was at 46 per cent in both rural and urban areas. Laikipia County has a cool temperate climate with the mean annual temperature ranging between 16°C and 26°C.

Figure 6: Map of Laikipia County



The county experiences both rainy and dry seasons and enjoys an annual relief rainfall varying between 400 mm and 750 mm. The county's natural resources include indigenous forests, wildlife, and rivers while its economic activities consist mainly of tourism and agriculture (predominantly the cultivation of grain crops, ranching, and greenhouse horticulture). In addition, Laikipia also boasts of tourist attractions such as the Ole Pejeta Conservancy, the Laikipia Plateau Reserve, the Thompson Falls, and a number of caves.

2.2 Research Methodology

Laikipia County was one of the counties selected from the Lowland-Highlands ecological zone. The research frame generally consists of a list of households generated from a number of scientifically selected villages and estates, which ultimately represent other villages in the entire country in surveys that are conducted on the frame. The frame used was the National Sample Survey and Evaluation Program (NASSEP V) developed by the KNBS.

2.2.1 Research Sample

The research was conducted in ten clusters from which 22 households per cluster were

sampled using the NASSEP V frame. Table 5 contains details of the ten clusters sampled.

2.2.2 Research Questionnaires

The tools administered for the research in Laikipia County were household questionnaires, an institutional questionnaire (completed by the County Development Officer), key informant questionnaires, and focus group discussion schedules.

i) Household Questionnaire

The data was collected using household questionnaires administered to 211 household heads.

ii) Key Informant Questionnaire

The key informant questionnaire was used to interview community leaders on food security issues in their locality. The community leaders, who were interviewed on a one-on-one basis, comprised youth leaders, women leaders, religious leaders, political leaders, and leaders of persons with disabilities. The ten key informants interviewed were drawn from Ol-Moran and Mia Moja areas.

Table 5: Clusters Sampled Using the NASSEP Framework for Baseline Household Survey in Laikipia County

Sub County	Division	Location	Sub Location	EA Name
Laikipia West	Ol-Moran	Loniek	Magadi	Road Four
Laikipia West	Ngarua	Gituamba	Thigio	Leleswa
Laikipia West	Nyahururu	Nyahururu	Manguo	Manguo 'A'
Laikipia East	Central	Nanyuki	Thingithu	Ex-Trench Farm
Laikipia East	Lamuria	Tigithi	Matanya	Kiahuko 'B'
Laikipia East	Daiga	Ethi	Ngenia	Mia Moja Centre
Laikipia West	Rumuruti	Salama	Lorian	Muguriti
Laikipia West	Rumuruti	Muthengera	Kaiti	Kirima
Laikipia East	Central	Nanyuki	Majengo	Majengo 'A'
Laikipia West	Nyahururu	Maina	Maina	Ukweli 'A'

Source: AWSC/KNBS Baseline Survey on Food Security, June 2013.

iii) Institutional Questionnaire

The institutional questionnaire sought to gather secondary data on food security from County Development Officers (CDOs), formerly referred to as District Development Officers. One detailed institutional questionnaire was completed by the County Development Officer.

iv) Focus Group Discussion (FGD)

The FGDs were used as a tool for gathering data about the collective knowledge on food security. Two focus group discussions, with participants drawn from among the community leaders who included women, men, youth, and persons with disabilities were conducted at Ol-Moran (N=1) and Mia Moja (N=1) using an FGD guide.

v) Debriefing Meeting

After gathering data using the various research tools, a debriefing meeting was held with key stakeholders, among them county and central government officials, Ministry of Agriculture officials, community and opinion leaders, civil society organizations, and community and opinion leaders selected from participants of focus group discussions and key informant interviews (Photograph 1). The purpose of the debriefing meeting was to share the preliminary findings with the participants and give them an opportunity to review, input, and validate the preliminary research findings on the status of food security in Laikipia County.

Photograph 1: Debriefing Meeting on Food Security Held at Thomson Falls in Nyahururu town



2.3 Key Research Findings

The key findings are organized along the following areas of interest: demographic characteristics of respondents; manifestation of food insecurity in Laikipia County; main sources of livelihood, food preservation and storage methods; and government and donor support programs in Laikipia County.

2.3.1 Demographic Characteristics of Respondents

A summary of the demographic characteristics of the respondents interviewed during the Food Security Baseline Survey was considered by age, marital status, level of education, gender and household size of the informants as outlined in the following sub-sections.

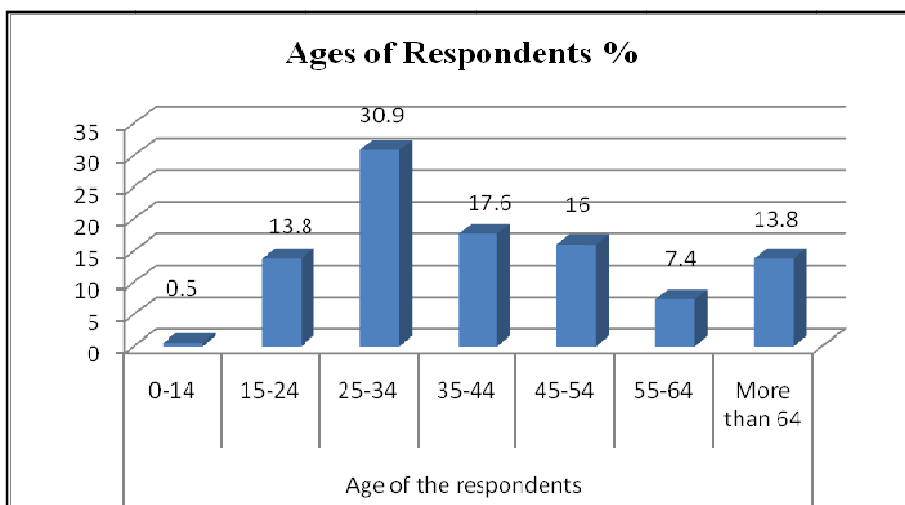
i) Age of Respondents

The age of the head of the household (HH) was considered to be an important variable in determining the food security status of the household. The age of the household head

was documented and the results cross-tabulated and put into broad age groups starting with children aged 14 years and below. The remaining age groups were spaced at 10-year intervals up to the age of 64 years. The last group, representing the elderly, consisted of household heads above 64 years of age. Figure 8 illustrates the age groups of the household heads from Laikipia County.

The findings show that the majority of the interviewed persons were mainly in the age group 25–34 at 30.9 per cent, followed by the age groups 35–44 and 45–54 represented by 17.6 per cent and 16 per cent respectively. All the respondents were able to state their age and only a small proportion (0.5%) were below 14 years of age. The presence of such young individuals as household heads is explained by the fact that they were found in households with orphaned children where the eldest child assumed the responsibility of taking care of the younger children.

Figure 7: Age of the Respondents

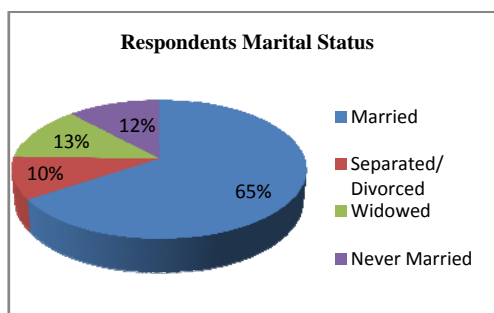


Source: AWSC/KNBS Baseline Survey on Food Security, June 2013.

ii) Respondents’ Marital Status

The study adopted the conventional socially accepted marriage categories among the target communities, including monogamy, polygamy, separation, divorce, staying together, and never married. The marital status of the household heads interviewed is presented in Figure 8. The findings show that 65 per cent of the respondents were married, 13 per cent were widowed, and 12 per cent were never married. The lowest proportion of respondents, at 10 per cent each, were separated and/or divorced.

Figure 8: Respondents’ Marital Status

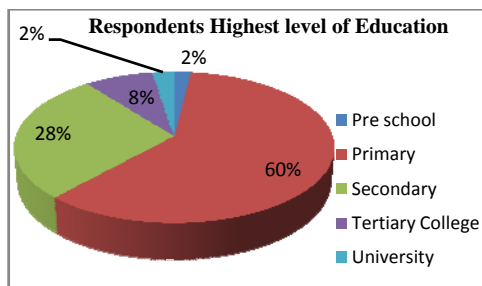


Source: AWSC/KNBS Baseline Survey on Food Security, June 2013.

iii) Respondents’ Education Levels

The study also examined the education level of the household head because it is an important variable in food security. Education improves an individual’s opportunities and access to information. The findings on the level of education of respondents from Laikipia County are presented in Figure 9. Most of the respondents (60%) had acquired primary education while 28 per cent had secondary-level education. Another 8 per cent of the respondents had tertiary-level education, and 2 per cent each had university education and preschool education.

Figure 9: Respondents’ Level of Education

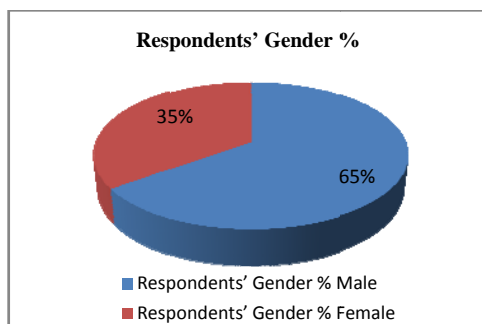


Source: AWSC/KNBS Baseline Survey on Food Security, June 2013.

iv) Gender of Household Head

The survey also looked at the biological sex of the household head and found 65 per cent of the 211 household heads interviewed were males and 35 per cent were females (Figure 10).

Figure 10: Gender of Household Head



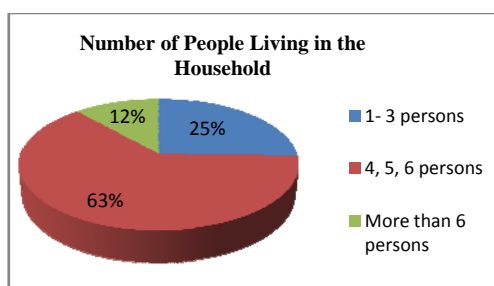
Source: AWSC/KNBS Baseline Survey on Food Security, June 2013.

v) Household Size

The size of the household, based on the number of members, was considered an important determinant of household food security. The households were classified into three groups: those with 1–3 members, those with 4–6 members, and those with more than 6 members. The study findings of household size in Laikipia County are presented in Figure 11. Most of the

households, at 63 per cent, had between four and six members, 25 per cent had between one and three members, and 12 per cent had more than six members.

Figure 11: Number of People Living Together in a Household

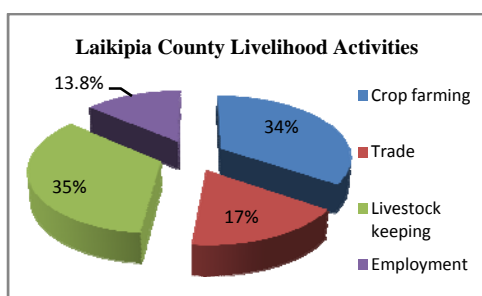


Source: AWSC/KNBS Baseline Survey on Food Security, June 2013.

2.3.2 Main Sources of Accessing Food

Households need to have sustainable livelihoods to be able to cope with and recover from the shocks and stress of both high and low food production and to continue maintaining their capabilities and assets without undermining their natural environment. Sustainable livelihood refers to people's capacity to generate and maintain their means of living and enhance their well-being and that of future generations (International Federation of Red Cross and Red Crescent Societies, 2006). Figure 12 shows the main sources of livelihood for the households interviewed in Laikipia County.

Figure 12: Sources of Accessing Food in Laikipia County



The research findings revealed that the main sources of accessing food or sources of livelihood for the majority of respondents was livestock keeping (35%) and crop farming (34%). Some of the household heads (17%) depended on trade and small businesses as their main source of accessing food while others (13.8%) relied on employment. The respondents also stated that during the times when they did not have enough food, they relied on such measures as obtaining relief food, seeking help from relatives, and providing labor as casuals. During periods of food shortage the respondents also took the options of eating less/skipping meals, planting crops that take a short time to mature, and borrowing food from neighbors.

2.4 Food Security Situational Analysis in Laikipia County

This section presents the findings on the situation of household food security in Laikipia County in the last ten months prior to the baseline survey.

2.4.1 Hunger Indicators in Laikipia County

The hunger module was used to determine the status of food security at the household level in Laikipia County in the ten months leading to the survey. The respondents were asked to rate the status of food security in their households based on eight questions in the hunger module for assessing the four dimensions of food security, namely: availability, accessibility, utilization, and sustainability. The hunger module used a scale of never, sometimes, often, and always.

A response of "never" implied food security, "sometimes" denoted a low manifestation of food insecurity, "often" was used to indicate a moderate manifestation of food insecurity, and "always" signified a high manifestation of food insecurity.

Table 6: Hunger Indicators in Laikipia County in the Last 10 Months before the Survey

Hunger Indicators	Never	Sometimes	Often	Always
E1: Did you worry that your household would not have enough food?	36	40.9	15.1	8.1
E2. Were you or any household member not able to eat the kinds of foods you preferred because of lack of resources?	28.6	43.8	17.3	10.3
E3. Did you or any household member eat a limited variety of foods due to lack of choices in the market?	44.1	32.3	14.5	9.1
E4. Did you or any household member eat food that you preferred not to eat because of a lack of resources to obtain other types of food?	22	38.7	26.9	12.4
E05. Did you or any other household member eat smaller meals in a day because of lack of resources to obtain enough?	32.4	35.7	22.2	9.7
E06. Did you or any other household member eat fewer meals in a day because there was not enough food?	35.1	38.9	16.8	9.2
E07. Was there a time when there was no food at all in your household because there were not enough resources to go around?	55.4	27.4	11.3	5.9
E08. Did you or any household member go to sleep at night hungry because there was not enough food?	64	28.5	4.3	3.2

Source: AWSC Baseline Survey on Food Security, June 2013.

In each of the eight questions, therefore, a high percentage score on the “never” scale suggested that a household was more food secure. On the other hand, high percentages on the scales of “sometimes”, “often”, and “always” indicated high levels of food insecurity. Table 6 illustrates the results of the hunger indicators in Laikipia County.

Table 6 shows that 11.3 per cent and 5.9 per cent of the respondents respectively stated that they often and always had no food at all in the household because of lack of enough resources to go around. Similarly, 4.3 per cent and 3.2 per cent of the respondents respectively said they often and always went to sleep hungry at night because there was not enough food. These categories of respondents were considered to be experiencing chronic food insecurity.

2.4.2 Chronic Hunger Module for the Last Ten Months

The study investigated the extent of chronic hunger in Laikipia County by obtaining the average of the households whose members were often and always hungry. These combined results are displayed in Table 7. The results for chronic hunger in Laikipia County show that 17.2 per cent of the respondents, or members of their households, often and/or always had no food at all in their households because they lacked enough resources to go around. Similarly, 7.5 per cent of the respondents, or members of their households, often and/or always went to sleep hungry at night because they lacked enough food. Using the combined results, therefore, an average of 12 per cent of the respondents were regarded as suffering from chronic food insecurity.

Table 7: Hunger Module with Often and Always

E07. Was there a time when there was no food at all in your household because there were not enough resources to go around?	E08. Did you or any household member go to sleep at night hungry because there was not enough food?	Average
Often and Always	Often and Always	Often and Always
per cent	per cent	per cent
17.2	7.5	12

Source: AWSC/KNBS Baseline Survey on Food Security 2013.

i) Hunger Indicators by Age of the Household Head

The age of the household head was considered to be an important factor related to food security. The results of hunger incidence by the age group of the household head in Laikipia County are presented in

Table 8. From the findings, it appears that the proportion of household heads who worried about not having food in their households was greatest (37.5%) among those aged 55 to 64 years and lowest (17.1%) among household heads in the 35–44 years age group.

Table 8: Hunger Indicators by Age of the Household Head

Age	E01: Did you worry that your household would not have enough food?	E02: Were you or any household member not able to eat the kinds of foods you preferred because of lack of resources?	E03: Did you or any household member eat a limited variety of foods due to lack of choices in the market?	E04: Did you or any household member eat food that you preferred not to eat because of a lack of resources to obtain other types of food?	E05: Did you or any other household member eat smaller meals in a day because of lack of resources to obtain enough	E06: Did you or any other household member eat fewer meals in a day because there was not enough Food?	E07: Was there a time when there was no food at all in your household because there were not enough resources to go around?	E08: Did you or any household member go to sleep at night hungry because there was not enough food?
	Often & Always	Often & Always	Often & Always	Often & Always	Often & Always	Often & Always	Often & Always	Often & Always
	per cent	per cent	per cent	per cent	per cent	per cent	per cent	per cent
15–24	18.2	9.1	9.1	36.4	27.3	27.3	36.4	9.1
25–34	20.4	26.6	24.5	34.7	24.5	22.4	14.3	10.2
35–44	17.1	22	29.3	34.2	26.9	26.8	9.8	4.9
45–54	31.3	37.5	9.4	40.6	40.6	25.0	15.6	0.0
55–64	37.5	25	25	37.6	37.6	31.3	31.3	25.0
Above 64	21.3	34.4	33.3	45.5	40.7	28.2	18.2	6.0

The results show that the highest proportion of households (37.5%) whose members were not able to eat the kinds of food that they preferred because of lack of resources occurred among households headed by those in the 45–54 age group. Households headed by those in the 15–24 age group had the lowest incidence (9.1%) of members not being able to eat the kinds of food that they preferred because of lack of resources.

On the other hand, the proportion of households in which the respondent or any other member consumed a limited variety of food due to lack of choices in the market was highest at 33.3 per cent among the households headed by those above 64 years of age and lowest at 9.1 per cent among households headed by those aged 15–24 years. In this category, 9.4 per cent of the households headed by those in the 45–54 years age group also had their members suffering the constraint of limited food choices in the market.

Further, Table 8 shows that the proportion of the households whose members or the respondent ate food they did not prefer because of lack of resources to obtain other types of food was highest at 45.5 per cent among households headed by those above 64 years and lowest at 34.2 per cent among those in the 35–44 years age bracket.

With respect to households whose members or the respondent ate smaller meals in a day due to lack of resources to obtain enough food, the percentage was highest, at 40.7 per cent, among the households headed by those above 64 years of age and lowest, at 24.5 per cent, among households headed by those in the 25–34 years age category.

In terms of households that ate fewer meals in a day because there was not enough, the most affected households were headed by those in the 55–64 years age

group while the least affected households were headed by those aged 25–34 years. The highest proportion (36.4%) of households that reported the experience of not having food at all were headed by persons aged 15 to 24 years while households headed by those in the 35–44 years age range reported the lowest incidence (9.8%) of not having any food at all.

Finally, the number of households whose members had to sleep hungry at some point because there was no food was highest, at 25 per cent, among households headed by persons aged 55 to 64 years. In contrast, households headed by those in the 45–54 age range reported no incidence where any of their members, including the respondent, went to sleep hungry at night because they lacked enough food.

ii) **Hunger Indicators by Marital Status of the Household Head**

The research also sought to establish the relationship between food security and the marital status of the household head by making reference to the socially accepted marital status to collect this information. Table 9 shows that households where the couple lived together had the highest proportion (50%) of households that worried about not having enough food while households in a monogamous type of marriage were least worried (19.4%) that their households would not have enough food

The results also show that households in which any of their members or the respondent had eaten the kinds of food that they did not prefer was highest among polygamous households (75%). None of the respondents among the divorced household heads indicated that any member of their household ate food they did not prefer.

Table 9: Hunger Indicators by Marital Status of the Household Head

Marital Status	E01: Did you worry that your household would not have enough food?	E02: Were you or any household member not able to eat the kinds of foods you preferred because of lack of resources?	E03: Did you or any household member eat a limited variety of foods due to lack of choices in the market?	E04: Did you or any household member eat food that you preferred not to eat because of a lack of resources to obtain other types of food?	E05: Did you or any other household member eat smaller meals in a day because of lack of resources to obtain enough	E06: Did you or any other household member eat fewer meals in a day because there was not enough Food?	E07: Was there a time when there was no food at all in your household because there were not enough resources to go around?	E08: Did you or any household member go to sleep at night hungry because there was not enough food?
	Often & Always	Often & Always	Often & Always	Often & Always	Often & Always	Often & Always	Often & Always	Often & Always
	per cent	per cent	per cent	per cent	per cent	per cent	per cent	per cent
Monogamous	19.4	20.4	19.4	31.4	29.0	22.4	13.0	6.5
Polygamous	25.0	75.0	50.0	50.0	50.0	50.0	25.0	0.0
Living Together	50.0	25.0	75.0	75.0	50.0	50.0	50.0	50.0
Separated	25.0	58.3	33.3	75.0	41.6	41.6	25.0	8.3
Divorced	33.3	0.0	16.7	50.0	33.3	16.7	0.0	0.0
Widow or Widower	20.8	39.1	15.0	50.0	29.1	25.0	29.2	12.5
Never married	30.7	30.8	26.9	38.4	34.6	26.9	15.3	7.7

Source: AWSC/KNBS Baseline Survey on Food Security, 2013.

With regard to those households whose members ate a limited variety of food because of lack of choices in the market, 75 per cent of the household heads who reported this problem were in a “living together” type of marital status while households headed by widows or widowers were least affected accounting for 15 per cent of the respondents.

Furthermore, the results show that the proportion of households whose members ate food that was not preferred because of lack of resources to obtain other types of food was highest, at 75 per cent, among households whose household head was separated from the spouse. Households in

which the household head was in a monogamous marriage were least affected by this problem.

With respect to households that ate smaller quantities of food per meal because of lack of resources to obtain enough, it was apparent that households headed by those in a living-together status and those in polygamous marriages were the most affected, accounting for 50 per cent of the respondents, while households whose heads were in a monogamous marriage were the least affected and consisted of 29 per cent of the respondents.

It was also noted that households headed by those in a polygamous and living-together

type of marital status featured the most, representing 50 per cent of the respondents, among the households whose members had taken fewer meals in a day because there was not enough food. The households whose household heads were divorced were least affected by this problem and accounted for 16.7 per cent of the respondents.

Finally, the highest percentage of households whose members had to go to sleep hungry were headed by persons in a living-together arrangement constituting 50 per cent of the respondents. In conclusion, households with polygamous household heads and those who were in a living-together arrangement were the most food insecure.

ii) Hunger Indicators by Level of Education of Household Head

The study investigated the relationship between the level of education of the household heads and food security. The findings on the status of food security by education level of the household head are shown in Table 10.

The findings show that food insecurity was high among households headed by those with low levels of education. The proportion of hunger stricken households decreased with increase in the level of education of the household head. The baseline survey revealed that households whose members had to sleep hungry due to lack of enough food were concentrated among those headed by persons with primary level of

Table 10: Hunger Indicators by Level of Education of the Household Head

Level of Education	E01: Did you worry that your household would not have enough food?	E02: Were you or any household member not able to eat the kinds of foods you preferred because of lack of resources?	E03: Did you or any household member eat a limited variety of foods due to lack of choices in the market?	E04: Did you or any household member eat food that you preferred not to eat because of a lack of resources to obtain other types of food?	E05: Did you or any other household member eat smaller meals in a day because of lack of resources to obtain enough	E06: Did you or any other household member eat fewer meals in a day because there was not enough Food?	E07: Was there a time when there was no food at all in your household because there were not enough resources to go around?	E08: Did you or any household member go to sleep at night hungry because there was not enough food?
	Often & Always	Often & Always	Often & Always	Often & Always	Often & Always	Often & Always	Often & Always	Often & Always
	per cent	per cent	per cent	per cent	per cent	per cent	per cent	per cent
Pre-School	19.5	23.9	17.1	46.3	29.3	26.8	22.0	4.8
Primary	28.20	30.7	24.3	38.4	39.7	29.5	16.7	11.5
Secondary	18.5	18.5	18.5	29.6	18.5	14.8	11.1	0.0
Non-University/ Diploma/ Certificate	0.0	16.7	16.7	33.4	0.0	0.0	16.7	0.0
University Diploma & Degree	0.0	0.0	20.0	0.0	20.0	0.0	0.0	0.0

Source: AWSC/KNBS Baseline Survey on Food Security, 2013.

education (11.5%) and those with pre-primary education (4.8%). Similarly, the proportion of households that experienced periods of total lack of food due to lack of resources was highest among households headed by persons with pre-primary education, at 22 per cent, followed by those with primary and non-University/Diploma/Certificate level education both at 16.7 per cent. None of the households headed by those with secondary education and above had any of their members going to sleep hungry at night for lack of enough food in the household.

iv) Hunger Indicators by Gender of the Household Head

The study considered the gender of the household head as a key determinant of food security given the different roles played by men and women. Table 11 presents the findings of the status of household food

security based on the gender of the head of the household.

Generally, the results show that the households headed by women were more food insecure than those headed by men. Table 11 shows that female headed households had the highest proportion (26.2%) of households whose members always had to worry about not having enough food compared to 21.7 per cent of the households headed by the male respondents. Households whose members were not able to eat the kinds of foods they preferred because of lack of resources were also concentrated among the female-headed households at 37.5 per cent. To measure the severity of hunger among the male headed households and those headed by women, the survey sought responses to the question of “whether there was a time when there was no food at all in the household because there were not enough resources to go round”.

Table 11: Hunger Indicators by Gender of the Household Head

Gender	E01: Did you worry that your household would not have enough food?	E02: Were you or any household member not able to eat the kinds of foods you preferred because of lack of resources?	E03: Did you or any household member eat a limited variety of foods due to lack of choices in the market?	E04: Did you or any household member eat food that you preferred not to eat because of a lack of resources to obtain other types of food?	E05: Did you or any other household member eat smaller meals in a day because of lack of resources to obtain enough	E06: Did you or any other household member eat fewer meals in a day because there was not enough Food?	E07: Was there a time when there was no food at all in your household because there were not enough resources to go around?	E08: Did you or any household member go to sleep at night hungry because there was not enough food?
	Often & Always	Often & Always	Often & Always	Often & Always	Often & Always	Often & Always	Often & Always	Often & Always
	per cent	per cent	per cent	per cent	per cent	per cent	per cent	per cent
Female	26.2	37.5	29.2	53.8	38.5	30.8	18.5	7.7
Male	21.7	22.5	20.8	31.7	28.6	23.5	16.7	7.5

Source: AWSC/KNBS Baseline Survey on Food Security 2013

The results indicated that 16.7 per cent of the male respondents answered in the affirmative compared to 18.5 per cent of the female respondents. On the question of “whether there was a time when they ate smaller meals because of lack of resource to obtain enough food”, again the households headed by the female respondents were more affected (38.5%) compared with those headed by the male respondents (28.6%). Averages for households that slept hungry at night because there was not enough food were 7.5 per cent for the male headed households and 7.7 per cent for households headed by women.

v) Hunger Indicators by Household Size

The AWSC also sought to determine whether there was a relationship between the size of the household and food security in Laikipia County. The household sizes were

categorized into three groups: those with 1–3 members, 4–6 members, and those with more than 6 members. The results are presented in Table 12.

From the responses to questions EO1–EO6, it would appear that the level of food insecurity increased with household size, but there was a reverse tendency with regard to responses to questions EO7 and EO8; that is, the proportion of households that had any of their members or the respondent going to sleep hungry due to lack of enough food was highest among households with 4 to 6 members at 9.3 per cent, followed by those with 1 to 3 members at 7 per cent. Similarly, those who had no food at all because of lack of enough resources to go around were concentrated among households with four to six members at 18.4 per cent followed closely by those with one to three members at 17.9 per cent.

Table 12: Hunger Indicators by Household Size

Household Sizes	E01: Did you worry that your household would not have enough food?	E02: Were you or any household member not able to eat the kinds of foods you preferred because of lack of resources?	E03: Did you or any household member eat a limited variety of foods due to lack of choices in the market?	E04: Did you or any household member eat food that you preferred not to eat because of a lack of resources to obtain other types of food?	E05: Did you or any other household member eat smaller meals in a day because of lack of resources to obtain enough	E06: Did you or any other household member eat fewer meals in a day because there was not enough Food?	E07: Was there a time when there was no food at all in your household because there were not enough resources to go around?	E08: Did you or any household member go to sleep at night hungry because there was not enough food?
	Often & Always	Often & Always	Often & Always	Often & Always	Often & Always	Often & Always	Often & Always	Often & Always
	per cent	per cent	per cent	per cent	per cent	per cent	per cent	per cent
1–3 Persons	21.8	23.0	21.7	38.6	28.0	22.0	17.9	7.0
4–6 Persons	23.0	30.8	26.1	40.0	35.4	29.2	18.4	9.3
More than 6 persons	30.0	40.0	25.0	40.0	40.0	35.0	10.0	5.0

Source: AWSC/KNBS Baseline Survey on Food Security, 2013.

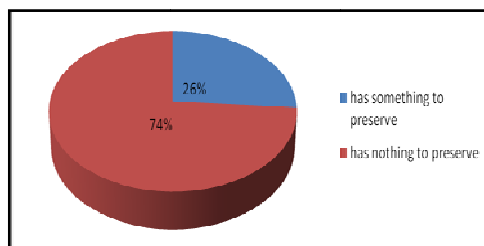
2.5 Food Preservation and Storage Methods

Preservation of post-harvest surpluses of seasonal food crops such as cereals, fruits and vegetables is an important aspect of food security as it makes the food available and affordable during off seasons. According to FAO (1997), better home and community food processing, preservation and storage, and access to marketing facilities can contribute to household food security by alleviating seasonal shortages in food supply and stabilizing market prices. Poor preservation and storage of post-harvest surpluses results in post-harvest wastage and food insecurity at the household level. This sub-section presents the findings on preservation and storage of post-harvest surpluses in Laikipia County.

2.5.1 Surplus of Non-Perishable and Perishable Foods Available for Storage

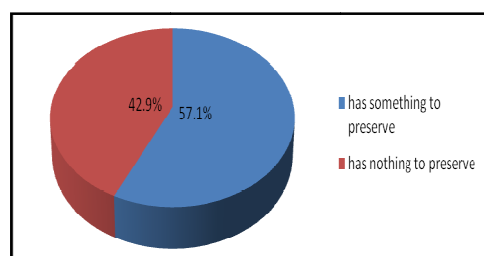
The study investigated the preservation of excess non-perishable and perishable foods by the target households. The non-perishable foods consisted of cereals such as maize and beans while the perishable foods were fruits, vegetables, milk, and meat products. The findings on those who had or did not have any surplus perishable and non-perishable foods to preserve are presented in Figures 13 and 14 respectively. From Figure 13, it is evident that most of the households (74%) had no surplus perishables to preserve while 26 per cent had some surplus perishable foods to preserve. From Figure 14, on the other hand, 42.9 per cent of the respondents had no surplus non-perishable foods to preserve while 57.1 per cent had some surplus non-perishables to preserve.

Figure 13: Surplus Perishable Foods Available for Storage



Source: AWSC/KNBS Baseline Survey June, 2013

Figure 14: Surplus Non-perishable Foods Available for Storage

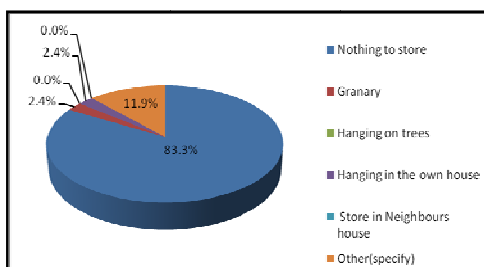


Source: AWSC/KNBS Baseline Survey June, 2013

2.5.1 Storage Methods of Perishable and Non-Perishable Foods

The study investigated the various methods used to store excess perishable and non-perishable foods. These methods are illustrated in Figures 15 and 16. Figure 15 shows that among the respondents who stored surplus perishable foods, 2.4 per cent each used the granary or hanged the food in their own houses while 11.9 per cent used other specified methods for this purpose.

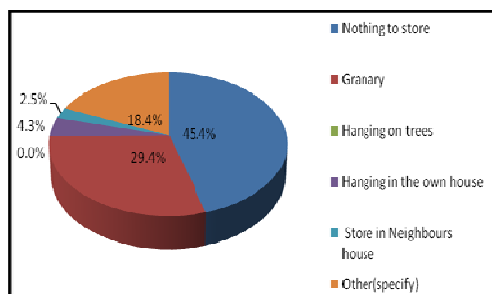
Figure 15: Methods of Storing Perishable Foods



Source: AWSC/KNBS Baseline Survey June, 2013.

Figure 16, on the other hand, shows that of the respondents who stored their surplus non-perishable food, 29.4 per cent used the granary, 4.3 per cent hanged the food in their own houses, 2.5 per cent stored in their neighbors' houses, and 18.4 per cent used other specified methods for this purpose.

Figure 16: Methods of Storing Non-perishable Foods



Source: AWSC/KNBS Baseline Survey June, 2013

2.6 Government and Donor Support Programs in Laikipia

The survey identified the various social protection programs offered by the Kenya Government and development agencies, including local and international donors, for the purpose of promoting household resilience to food insecurity by individuals lacking access to sufficient food supplies. These programs target vulnerable categories of the society, among them orphans and vulnerable children (OVCs), people living with

HIV/AIDS, persons with disability, and the vulnerable elderly. The program were implemented through relief food and/or cash transfers. This section presents the findings on the various food support programs available in Laikipia County.

2.6.1 Beneficiaries of the Available Food Support Programs

Table 13 presents the findings on the available food support programs in Laikipia County and their respective beneficiaries.

The highest proportion (7.2%) of beneficiaries of the food support programs were the recipients of food rations followed by those (3.4%) who benefited from the School Feeding Program. Other forms of support received by households in Laikipia County included the Constituency Bursary Fund Support (1.1%), the Irrigated Farming Support (0.6%), and the Constituency Development Fund Support (0.6%). There were no beneficiaries of the support programs for the vulnerable elderly, those living with HIV/AIDS, food for work, seeds and fertilizer inputs, and the National Fund for the Persons with Disability (PWDs) in Kenya. The food support programs in Laikipia County was provided by the government and various organizations as presented in Figure 17.

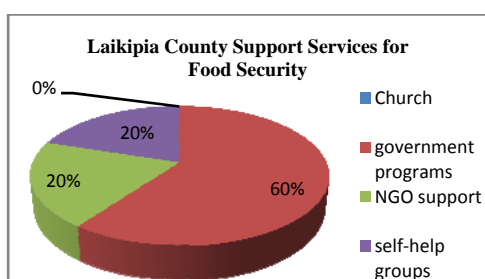
Table 13: Proportion of Beneficiaries from the Various Food Support Programs

	Support	Received Help (%)
1.	Receive help from Vulnerable Elderly Persons Cash Transfer Program	0.0
2	Receive Hunger Safety Net Support	0.0
3	Receiving Food rations	7.2
4	Receive help from HIV/AIDS Support Program	0.0
5	Irrigated Farming Support	0.6
6	Food for Work Program	0.0
7	Seeds and Fertilizer Inputs Support	0.0
8	Constituency Development Fund Support	0.6
9	Constituency Bursary Fund Support	1.1
10	National Fund for the Disabled in Kenya Support	0.0
11	School Feeding Program	3.4

Source: AWSC/KNBS Baseline Survey on Food Security, June 2013.

As shown in Figure 17, the support services received in Laikipia County were mainly from the government at 60 per cent and the NGO and self-help groups at 20 per cent each. The church was not reported as having offered any support in the county. All the beneficiaries of government support indicated that the support given was insufficient.

Figure 17: Proportion of Beneficiaries from the Various Food Support Programs



Source: AWSC/KNBS Baseline Survey on Food Security, June 2013.

2.6.2 Rating of Food Support Programs

The participants were asked to rate the various support programs based on the adequacy and quality of support. The findings of this assessment are presented in Table 14.

In Laikipia County, 14.3 per cent of the respondents reported that they received aid from the Orphans and Vulnerable Children (OVC) fund, 29.4 per cent received supported from the Hunger and Safety Net Programme, while 20 per cent received food rations. Regarding the quality of support, majority of the respondents reported that either the programmes were average or poor. For instance, 66.7 per cent in the OVC programme rated it as average while 11.1 per cent rated it as poor. Among the beneficiaries of the Hunger Safety Net Programme, 12.5 per cent rated the programme as average while 75 per cent rated it as poor.

Table 14: Rating of the Various Food Support Programs

Type of Support	Households that Receive Support	Adequacy	Quality of Support		
			Good	Average	Poor
Receive help from Orphans and Vulnerable Children Cash transfer	14.3	85.7	22.2	66.7	11.1
Receive help from Vulnerable Elderly Persons Cash Transfer		100.0		57.1	42.9
Receive Hunger Safety Net Support	20.0	80.0	12.5	12.5	75.0
Receiving food rations	29.4	70.6	15.0	55.0	30.0
Receive help from HIV/AIDS Support Program		100.0		66.7	33.3
Receive Irrigated Farming Support		100.0		14.3	85.7
Food for Work Program		100.0			100.0
Seeds and Fertilizer Inputs Support		100.0		33.3	66.7
Constituency Development Fund support		100.0	9.1	45.5	45.5
Constituency Bursary Fund support	22.2	77.8	18.2	36.4	45.5
National Fund for the Disabled in Kenya support		100.0		16.7	83.3
School Feeding Programs	23.1	76.9	18.8	37.5	43.8

Source: AWSC Baseline Survey on Food Security, June 2013.

Eighty three per cent of the respondents rated the National Fund for the Disabled as poor, while 43.8 per cent also rated the school feeding programme as poor.

2.7 Challenges to Food Security

As illustrated in the research findings, Laikipia County was one of the counties that are food insecure. The study participants cited various challenges that contributed to food insecurity in the county including financial constraints, high market prices that keep food out of the reach of many people, poor infrastructure that hinders easy access to markets, and poor agricultural production methods that often lead to poor yields and food inadequacy. The other identified key challenges that hinder achievement of food security in Laikipia County were as follows:

- i) **Inadequate Water:** It was reported that Laikipia County generally lacks water for domestic and irrigation due to lack of enough rainfall and lack of knowledge on how to harvest rain water when available.
- ii) **Insecurity:** Laikipia County experiences a high level of insecurity in the form of

cattle rustling and normal crimes both of which endanger the activities that could enhance food security.

- iii) **Infrastructure:** The county is vast but has poor infrastructure consisting of mainly road network (Photograph 2). The poor road network hinders access to markets either to purchase farm inputs or sell farm produce. Only a small proportion of the county is connected with electricity making it difficult to practice those activities that require electricity such as pumping water for irrigation or food preservation.
- iv) **Farm inputs:** Unavailability and lack of access to certified quality farm inputs such as fertilizers, seeds and pesticides prevent farmers from improving farm outputs because they plant local seeds without using any fertilizer, which results into poor harvests.
- v) **Human - wildlife conflict:** The locals are from time to time killed by elephants and buffaloes which also destroy crops hence aggravating the situation of food insecurity.

Photograph 2: Poor infrastructure with sections of the road having no bridges – Laikipia County



- vi) **Unemployment:** There are high rates of unemployment and the majority of the employed fall in the ageing population category while many of the youths have no gainful employment. Illiteracy rates are also high since the county consists of pastoralists who attach little value to education. There has been over dependence on relief food in some parts of the county due to either insecurity (which has forced people to flee from their homes) or poor climatic conditions (which make the area unsuitable for farming).
- vii) **Poverty levels:** There are high levels of poverty, especially among the people who are landless (squatters), IDPs, and those who own small farms. The majority of these people resort to working as casual laborers on the horticultural lands and ranches.
- viii) **Veterinary services:** There are limited veterinary services for livestock in the county leading to high levels of animal deaths from disease. Corruption among the few extension officers available in the county and lack of commitment to work further aggravate the problem.
- ix) **Drug abuse** is rampant in the area, especially the consumption of locally made illicit brew. Many cases of drug abuse especially of tobacco and other drugs, are reported in schools in the area. The most common drugs are bhang and kuber. The use of drugs has made the youths inactive and unproductive because they spend most of their time in the alcohol dens, most of which are also situated near schools and operate without any restriction. Liquor licences are also issued without following the NACADA Act.
- x) **Pastoralism** is a predominant activity in the county. The pastoralist communities

have not embraced agriculture as an economic activity even after they lost most of their livestock to drought. The big ranches in the county are mostly owned by foreigners.

2.8 Information on Food Security Issues from the Key Informants

This section presents the information on food security gathered from the key informants who included community opinion leaders comprising youth leaders, women leaders, religious leaders, political leaders, and leaders of persons with disabilities.

2.8.1 Main Livelihood Activities

The major livelihood activities in Laikipia County were identified as crop farming, small retail business, livestock keeping, and employment. The percentage of female key informants who were involved in crop farming was 62.5 per cent compared to 37.5 per cent for male respondents. Both men and women were equally engaged in livestock keeping, but 80 per cent of the women reported that small business was their main livelihood activity compared to only 20 per cent of the men who engaged in small business as their main livelihood activity. On the other hand, more men (75%) indicated that employment was their main livelihood activity compared to only 25 per cent of the women.

2.8.2 Main Food and Consumption Patterns

When the key informants in Laikipia were asked to state what their main food was, 75 per cent of the women indicated that their main food was *githeri* while only 25 per cent of the men reported *githeri* as their main food. Sixty per cent of the women indicated that *ugali* was their main food compared to 40 per cent of the men who chose *ugali* as

Photograph 3: A Research Assistant Distributing Food to Children in Ol-Moran



their main food. When asked what they ate their main meal with, 25 per cent of the women stated that they ate vegetables but 75 per cent of the men said they did not eat vegetables with their staple. All women interviewed also indicated that they ate their main meal with milk. Other foods consumed in Laikipia included groundnuts, legumes, meat, and rice.

2.8.3 Challenges in Engaging in Livelihood Activities

All the women key informants cited insecurity as the major challenge to their livelihood activities while none of the male respondents perceived security as a challenge. Women also cited lack of access and high costs of farm inputs as a major challenge (66.7%) while only 33.3 per cent of the male respondents indicated this as a challenge. Further, 40 per cent of the women cited drought and unreliable rainfall as a challenge compared with 60 per cent of the men.

2.8.4 Access to Food

The same proportion (50%) of female and male respondents indicated that they produced their own food. More female respondents (66.7%), however, purchased food while only 33.3 per cent of the male respondents did so.

2.8.5 Opinion on Food Adequacy

When the respondents were asked if they considered the county as having adequate food, 44.4 per cent of the female respondents and 55.6 per cent of the male respondents considered the county to be having adequate food.

2.8.6 Coping Strategies

From the interviews with the key informants, it appeared that women and men used different coping strategies to deal with food shortage. All the women used borrowing food as a coping strategy, while none of the

male respondents resorted to this measure. An equal percentage of women and men indicated having received relief food (50%). In addition, all the women respondents stated that they did casual labor and sought help from relatives as coping strategies when faced with food shortage. Male respondents in Laikipia County reported that they never received help from relatives in times of food shortage.

2.8.7 Access to Land and Land Use

When the informants were asked if men and women had equal access to land, most men (66.7%) agreed that this was the case while only 33.3 per cent of the women responded in the affirmative. Both women and men informants stated that they used their land for crop farming and for securing loans.

2.8.8 Availability of Markets

The respondents were also asked if there were markets to buy food from or sell their produce at. Sixty seven percent of the women said markets to sell produce were available compared to 33 per cent of the men. On the availability of markets to buy food, 60 per cent of the women said markets were available while only 40 per cent of the men responded in the affirmative.

2.8.9 Access to Government Food Programs

In response to how they accessed government food support related programs, all the women indicated that they obtained support through the provincial administration. The male respondents, on the other hand, said they accessed food programs through training and capacity building activities.

2.8.10 Suggestions for Improving Government Food Support Programs

When asked about suggestions on how to improve government support programs, both the female and male respondents mentioned upscaling of farm inputs and increasing the amount of support as the key issues. Other key concerns mentioned by both men and women were the provision of financial support and access to agricultural extension facilities.

2.8.11 Opinion on Community Involvement

When the key informants in Laikipia were asked for their opinion on community involvement to address food insecurity, 50 per cent of the women and men respondents rated the community as being *very actively involved*, 75 per cent of the women rated the community as being *involved*, while only 25 per cent of the men rated the community as being *involved*.

2.8.12 Socio-economic factors hindering attainment of food security

When the respondents were asked about economic-related issues that hinder the achievement of food security, the differences in their responses became evident. All the women respondents identified poor infrastructure, marketing issues such as exploitation by middlemen, lack of access to credit, and lack of income. The men, on the other hand, considered high costs of inputs and commercialization of land as economic hindrances to the attainment of food security. Regarding social issues, women cited general insecurity, drug and alcohol abuse, family disputes, poor family planning and repugnant cultural practices as obstacles to the attainment of food security while the men identified bad cultural practices, lack of education, and negative attitudes towards agriculture as the main social impediments to the attainment of food security.

2.8.13 Alternatives for Attainment of Food Security

The key suggestions by most women were provision of irrigation water, high yielding crop varieties, affordable farm inputs, and farming education while the men recommended the provision of irrigation water and affordable seed and fertilizer.

2.9 Summary of the Research Findings

The findings indicate that Laikipia County is food insecure because 17.2 per cent of its people often and/or always had no food at all in their households because there were not enough resources to go around. In addition, 7.5 per cent of the respondents or members of their households, often and/or

always went to sleep hungry at night because there was not enough food. In total, an average of 12 per cent of the respondents were suffering from chronic food insecurity. It is worth noting that households headed by women were found to be more food insecure than those headed by men. This observation correlates with the fact that men and women were said not to have equal access to land which is a critical resource in food security considering that 35 per cent and 34 per cent depend on livestock and crop farming respectively as their main source of accessing food. These results suggest that to achieve food security at the county level, the various challenges must be addressed while at the same time strategically targeting the individual needs of the food insecure households.

Discussion and Analysis

This chapter discusses the key findings of the baseline survey on food availability, access, sustainability, and utilization in Laikipia County. The discussion focuses on the crucial issues raised by participants from Laikipia County during the household survey, namely: demographic data; sources of accessing food; and general issues relating to food security such as availability, access, consumption, and sustainability.

3.1 Demographic Data and Hunger

3.1.1 Relationship between Age and Hunger

The research findings from Laikipia County show that most of the respondents were drawn from the 26 to 35 years age bracket followed by those in the 36 to 45 and 46 to 55 years age brackets respectively. The majority of the key informant respondents belonged to the age groups 36 to 45 and 46 to 55 years both of which represented 33 per cent of all respondents in each category. Among the key informants for this study, the age groups 26 to 35, 56 to 65, and 66 years and above had the least number of respondents. In the household survey, the majority of the respondents belonged in the age group 26 to 35 years. The key informant respondents included political leaders and youth leaders each constituting 12.5 per cent of this category, women leaders at 50 per cent and religious leaders at 25 per cent. These observations suggest that one's profession or social status in the community did not seem to be a determining factor of the age of becoming a household head.

Generally, food insecurity was reported mostly by those in the age group 55 to 64 years followed by those in the 25–34 years age range. Household heads in the age bracket of 55–64 years and those aged more than 64 years were the most food insecure. The vulnerability to food insecurity observed among households headed by the elderly individuals, especially those aged more than 64 years, may be attributed to the fact that the elderly people are most probably not active members in the society and are even regarded as dependents. The majority of the respondents in this category were own food producers and had limited income with a few depending on pension and social security benefits.

In addition to lacking money to purchase food products to ensure access to enough food and adequate nutrition, older adults face unique barriers less often experienced by individuals in other age groups. Research shows that food insecurity in older adults may result from one or more of the following factors: functional impairments and health problems and/or limitations in the availability, affordability, and accessibility of food (Lee & Frongillo, 2001) which lead many of the households headed by the elderly towards becoming food insecure.

3.1.2 Relationship between Marital Status and Hunger

Regarding the relationship between marital status of respondents and household food status, the findings revealed that the highest percentage of households whose members

always had to go to sleep hungry were headed by people in a living-together arrangement followed by households headed by those in polygamous relationships. Although households of divorced, separated, and widowed household heads would be expected to face higher risks of food insecurity, this study revealed that it was the households headed by those in a living-together type of relationship that registered the highest levels of food insecurity. The possible explanation for this finding is that “living together” could be a food security coping strategy by some household heads compelled to enter into relationships due to financial constraints. In addition, household heads in polygamous marriages require more resources to buy enough food and other basic household needs because they often have larger household sizes compared to those in monogamous families.

3.1.3 Relationship between Gender and Hunger

During the household survey, 120 male and 65 female household heads were interviewed. This high discrepancy in numbers was due to the fact that households in Kenya still follow the patriarchal system where men are the household heads unless a woman assumes the role of household head upon the death of her husband or remains unmarried and lives on her own or with her children as a single mother. The sex ratio of female to male respondents for the key informant interviews was 60 to 40, that is, for every six women key informants interviewed, only four men were interviewed. This study specifically targeted women leaders except in the categories of religious leaders, persons with disabilities, and political leaders which were left open to either gender.

With regard to gender and food insecurity, the findings revealed that female headed households were more vulnerable to food insecurity than male headed households. This observation could be attributed to various forms of discrimination relating to such factors as access to productive resources like land or the ownership and control of productive resources, more particularly land. While 35 per cent and 34 per cent of the respondents said they relied on livestock keeping and crop farming respectively as their main source of accessing food, men and women do not enjoy the same rights with regard to access to land. Ninety percent of the respondents said there was no gender equality in access to land, a factor that could lead to increased vulnerability to food insecurity by the female-headed households.

Although women occupy a critical position in the agricultural food chain, they encounter many obstacles due to restricted land rights, inadequate education, and outdated social traditions which usually limit their ability to improve the food security status of their households and communities at large. Women also face various forms of discrimination, such as greater reluctance on the part of input providers to offer credit for fertilizer purchases to female headed households than male headed households and less scope to borrow money from formal financial institutions and/or to buy food on credit.

3.1.4 Relationship between Education and Food Security

The majority of Kenyans attend primary level of education, but the numbers of educated Kenyans reduce as the level of education increases. In Laikipia County, 60 per cent of the respondents had received primary school education, 28 per cent had secondary

education, and 2 per cent had university education. Among the key informants, who were also community leaders, the majority had attained secondary and college education each constituting 40 per cent of those interviewed while a much lower proportion had primary school education and university education at 10 per cent each. The difference in the levels of education of the household heads and the key informant respondents could be explained by the fact that education level is often a criterion for one to qualify to hold a leadership position within the community. The study targeted community leaders to participate as key informants since they are knowledgeable on issues affecting the community. Mostly, such knowledge is obtained through attending formal education or at the work places, where one must have attained a specific minimum level of education to serve in certain positions.

In terms of the relationship between level of education and food insecurity, the findings revealed that food insecurity was high among households that were headed by persons with low levels of education. The converse was true with regard to food security. Thus, in Laikipia County households headed by those who had primary level of education were the most food insecure, followed by those with non-university diplomas or certificates. Similarly, the majority of households whose members had to sleep hungry due to lack of enough food were headed by persons with primary level of education, followed by those headed by persons with pre-primary level of education. Also, the highest percentage of households that experienced episodes where there was no food at all due to lack of resources were headed by persons with pre-primary level of education followed by those with primary level of education.

A low literacy level has adverse effect on food security because it impedes access to and utilization of agricultural information for household food security by farmers. A higher education level offers an individual better opportunities to adopt modern methods of farming to boost farm produce. Education also gives an individual the opportunity to hold better paying and secure jobs and hence the purchasing power to buy food.

3.1.5 Household Size and Food Security

Kenya's demographic situation, as per the 2009 population census, shows a relatively high fertility rate of 4.6 births per woman, which translates to an average family size of six members. In the current survey, 63 per cent or the majority of the respondents had four to six members in their households while those with more than six members accounted for the lowest proportion of the survey respondents at 12 per cent. Among the key informants, 50 per cent had six members in their households, 20 per cent had five and seven members each, and 10 per cent belonged to households with eight members.

The households with 4–6 members experienced the highest level of food insecurity at 9.3 per cent by indicating that they often/always went to sleep hungry. With regard to household size and food insecurity, the research findings for questions 1–6 in the survey revealed that households with more than six members were severely affected. This observation could be attributed to the fact that, as family size increases, the amount of food consumed in one's household increases accordingly as every additional household member shares the same limited food resources. Furthermore, in areas where households depend on less productive agricultural land, such as Laikipia County, increasing household

size results in increased demand for food and in situations where such demand cannot be matched with the existing food supply from own production, the outcome will be household food insecurity.

A rather inconsistent observation was that, compared to the smaller households with 3–6 members, fewer households with more than six members were encountered that often/always suffered total lack of food because there were not enough resources to go around and whose members often/always went to sleep hungry. This observation could be attributed to the small number of participants from households with more than six members.

Alternatively, the participants had reached the more stabilized age group where some of the offspring of the household were grown up enough to also bring some food to the home, thereby ensuring that members of the household did not go to sleep hungry.

3.2 Manifestation of Hunger along the Four Dimensions of Food Security

Food security exists when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life (FAO, 2010). Household food security means applying this concept to individuals within the household. Conversely, food insecurity exists when people do not have adequate physical, social, or economic access to food (FAO, 2010). Chronic hunger is also a sign of food insecurity hence the hunger module was used to determine the status of food security at the household level in the 20 sampled counties. The researchers assessed the status of food security at the household level in the ten months prior to the survey conducted in June 2013. The eight questions

in the hunger module are designed to assess the four dimensions of food security, that is, availability, accessibility, utilization, and sustainability and hence household heads were asked to rate the status of food security in their households based on these questions.

Both the quantitative data collected from the household heads and the qualitative data collected using the key informant guide, the institutional guide, the FGD guide, and the debriefing meeting illustrate that Laikipia County is food insecure.

3.2.1 Food Availability

Food availability deals with the supply side of food security and is determined by the level of food production and food stored. This element of food security was measured using questions E03, E06, and E08 of the Food Security Module. The unavailability of food was illustrated in various ways; for instance, eating a limited variety of food would imply that members of a household may have food but the lack of diversification would signify food insecurity.

Food utilization is a significant dimension of food security and may be determined by the quantity and quality of dietary intake. Participants in both the key informant interviews and the focus group discussions implicated that most households consumed a limited variety of food due to insufficient income, high food prices, and lack of food diversity in the markets. Lack of food diversity often leads to health challenges, especially malnutrition and diet-related diseases hence having a high percentage of households eating a limited variety of food may imply a high level of malnutrition.

Eating fewer meals, which means missing some meals due to inadequate amount of food available in the household to cater for all meals, was also an indicator of lack of

food availability. Skipping meals is a more serious manifestation of food insecurity and poverty than eating smaller meals since households that have little income can at least afford to eat smaller meals but not skip meals. Opinion leaders in the integrated research stated that whenever food was inadequate, households skipped some meals to facilitate the preparation of one meal that would be enough for all members of the household.

Based on research findings, food insecurity adversely affects households in the low income category because they have to forego other important non-food expenditures, such as health care and education in order to buy food. The researchers learnt that middle income households spend a large proportion of their income on food. The most cited reasons for eating small meals were lack of adequate resources to buy enough food and inadequate food where some households rationed the little food they had to avoid starvation. Eating small meals was used as a coping mechanism for food insecurity although it implied that there was underutilization/under consumption of food which is another indicator of food insecurity.

There were also households experiencing chronic food insecurity by going to sleep hungry due to the limited availability of food or lack of access to it. In the integrated research, the opinion leaders indicated that households slept hungry because they did not have food surpluses since they produced only enough for immediate consumption. This observation implies that households that slept hungry had a higher incidence of not having food at all in their households. The opinion leaders stated that this situation was occasioned by low food availability resulting from output fluctuations attributed to such factors as erratic rainfall; poor quality seed; high cost of inputs, especially fertilizer; poor

producer prices; and pests infestation and plant diseases.

3.2.2 Food Accessibility

Food accessibility, which deals with the supply side of food security, is determined by the level of food production and food stored. This element of food security was measured using questions E04, E05, and E07 of the Food Security Module.

Lack of or limited access to food leads to eating food that is not of one's preference. Lack of resources to obtain other types of food refers to a situation whereby financial constraints hinder access to a variety of foodstuffs often leading to food insecurity. Lack of or limited access to food also causes members of a household to eat small quantities of food for breakfast, lunch, and dinner but they do not skip any of these meals. Eating small meals was used as a coping mechanism for food insecurity and implies underutilization/under consumption of food, which is an indicator of food insecurity. The most cited reason for eating small meals was lack of adequate resources to buy enough food and inadequate amounts of food within the household; thus, the households ration the little food they have to avoid starvation.

Based on the indicators of the Hunger Module, lack of food in the household is a high manifestation of food insecurity because it shows that there is serious starvation in those households. During the focus group discussions and key informant interviews in the integrated research, the opinion leaders stated that some of the factors that contribute to food insecurity in Laikipia County include changing climatic conditions due to global warming and poor agricultural practices both of which have led to serious crop failure in the last few years. The opinion leaders also indicated that

because business activities in the county were operating at a low level owing to low purchasing power and lack of capital for expansion, traders did not get sufficient income to buy enough food. The leaders also observed that food security support services were limited, poorly targeted, and poorly administered even though many residents were food insecure.

3.2.3 Food Utilization

Eating food of one's preference is an important aspect of food security. However, some households ate food they did not prefer to eat due to various reasons such as lack of sufficient income to buy food of their preference. Similarly, opinion leaders in the integrated research indicated that they ate foods they did not prefer to eat due to lack of sufficient income to buy food of their preference. Apart from low income, limited variety of food in the market and poor transport infrastructure also hindered many households from accessing the food of their choice.

3.2.4 Food Sustainability

With regard to sustainability, there were those respondents who said they worried about not having food. Lack of food sustainability may be due to inconsistency of supply, access, and utilization of food. The integrated research revealed the factors responsible for worrying about not having enough food as small parcels of land, erratic climatic conditions, crop failure, lack of income to buy food, shortage of food supply in markets, and fluctuations in food prices. A situation where households worry over lack of food or over hunger will have an impact on individual development, the health of families and communities, and the development of the county.

The livelihood activities for Laikipia County, as mentioned by the key informants, were crop farming and livestock keeping at 34.5 per cent each, small businesses at 17.2 per cent, and formal employment at 13.8 per cent. The main challenges encountered while engaging in the livelihood activities were low and unreliable rainfall, high costs of farm inputs, insecurity, lack of market for farm produce, pest infestations and diseases, floods, poor farming methods, poor infrastructure, unemployment, and human-wildlife conflict. Most of the respondents (44%) reported that they purchased food, 39 per cent produced their own food, and 17 per cent received food aid or support. The majority of the respondents reported that Laikipia County was not food secure, despite appreciating that the county had fertile soils and a conducive climate for farming. When people do not have enough food, some of the coping strategies they rely on are relief food and help from relatives, casual work, planting crops that take a short time to mature, borrowing food, and eating less or skipping meals by the adults so as to have more for the children.

The suggested strategies for ensuring the availability of enough food in Laikipia County, should aim at improving crop production by promoting and adopting better farming methods (modern) for maximum yields, buying farm produce in bulk during harvesting time, adopting proper storage methods to avoid food contamination, and engaging in other economic activities such as business. Also, the quantity and quality of agricultural extension services should be enhanced because currently there is inadequate human resource and underfunding of the sector. Laikipia County, therefore has a low level of adoption of agricultural technology resulting from limited

3.3 Main Sources of Livelihood

research and poor links between farmers and extension officers.

The constraints to economic activities, which have a negative impact on food security by affecting crop production, include low quality of farm inputs, low technical skills/knowledge, and high cost of key farm inputs (such as seeds and fertilizers). Prevalence of animal and crop diseases and limited access to capital and credit facilities also lead to high post-harvest losses arising from to inappropriate handling of agricultural and livestock products. Additional constraints to livestock production in the county include poor or low yielding animal genetic stock, endemic pests and diseases, and low prices for animals. Lack of capital to expand businesses, weak purchasing power, and weak financial services were identified as impediments to the development of small enterprises and other business activities all of which culminate into traders not having sufficient income to purchase enough food. The research also revealed that poor infrastructure in most parts of the County also affects distribution and marketing of farm inputs and agricultural produce respectively.

3.4 Food Preservation and Storage

Food storage and preservation is a key factor in determining household food security as it ensures reduced wastage, availability of food for later use, and preparedness for catastrophes and emergencies in periods of scarcity. From the foregoing discussion, it is apparent that the majority of the respondents did not have food to store, indicating lack of food surplus at the household level. This situation is a clear manifestation of food insecurity in most households in Laikipia County. It is also clear from the research findings that the majority of the respondents did not have reliable

preservation methods for non-perishable and cooked foods but instead used conventional methods of food storage which are unreliable. Most people still used traditional methods of preserving food such as drying and coating with ash, which may not be effective in keeping food fresh over a long period often leading to spoilage of the little food available and hence food insecurity.

It is noteworthy to mention that the absence of food preservatives, especially for grains, compels farmers to sell their produce at low prices immediately after harvesting to avoid wastage. In this way, food insecurity results from the fact that many farmers are unable to store food for future use. For this reason, food preservatives should be made affordable to encourage food storage. Storage is an aspect of the post-harvest process which food goes through on its way from the field to the consumer (USAID, 2011). The research findings revealed that in Laikipia County, contemporary food preservation techniques have not been adopted by the majority of farmers. Instead, most of the agricultural output of small scale farmers is kept at the household level for local use and is stored using traditional technique such as putting in sacks and keeping in the house, granaries, and also hanging to prevent from attack by vermin. Storage of cereals and other non-perishables at the household level has many advantages such as enabling farmers to easily access their produce and facilitating selling when necessary thus minimizing transportation and handling costs.

Another traditional method of food storage is aerial storage where unshelled maize cobs and other unthreshed cereals are suspended in bunches or sheaves using a rope or plant material, under leaves, from the branches of trees, or at the top of poles driven into the ground. The grain dries in the

air and sun until it is needed by the farmer for consumption or marketing but this method exposes the grain to the environment and pests. To ensure food security and avoid wastage, modern food preservatives should be made affordable and their use by farmers encouraged. The respondents indicated that cooked food was stored by suspending it from ropes within the houses and covering the food tightly. Some people preserved the food in the fridge or dried it over a fire before placing it in cupboards without covering. Alternatively, the food was stored in a clean environment in the coolest part of the house. Food kept for future use was warmed but not fried.

3.5 Food Consumption Patterns

Staple food crops are significant sources of both food security and earnings for most of the households in Kenya (USAID, 2010). Maize is the staple food crop in Kenya and the availability or lack of maize has always been regarded as a measure of the status of household and nationwide food security. Maize in Kenya is essentially used in the form of maize flour to prepare maize meal (*ugali*). In addition, dry maize grain is often mixed with other foodstuffs such as potatoes, beans, and vegetables to prepare *githeri* and *muthokoi*. The Kenya National Food and Nutrition Security Policy (FNSP, 2011) states that in Kenya food availability has over time been understood in terms of cereal supply and food security in terms of having enough maize.

The integrated research findings revealed that *ugali* was the main staple food consumed by residents of Laikipia County at 50 per cent followed by *githeri* (mixture of maize and beans) at 40 per cent. The main accompaniments of the main foods were vegetables (specifically *sukuma wiki*, *managu*, *terere*, *kunde*, cabbage, etc.) at 39

per cent, followed by tubers and milk at 17.4 per cent each, legumes at 9 per cent, and meat and groundnuts stew at 4.3 per cent each. The other foods consumed in the County were rice at 30 per cent. Eating non-traditional foods and engaging in diverse economic activities should be encouraged since this will help in boosting food security by diversifying sources of food and earning more income.

3.6 Government/Church/Donor Support Food Programs

Data analyzed from the findings revealed that the various support programs available in Laikipia County were largely inadequate and in poor or average state. In Kenya, the government has been implementing cash transfer programs targeting orphans and vulnerable children since 2004 in addition to implementing several social protection interventions. Although many Kenyans are food insecure, only a small percentage of respondents confirmed that they received cash transfer services from the government. The low percentage of cash transfer beneficiaries is attributed to the fact that most of the support programs were still in the pilot stage; hence, they only targeted few individuals. Most of the participants during the focus group discussions, however, complained that the small number of available support programs were not properly administered and consequently the deserving beneficiaries did not benefit much.

The highest proportion of support received to improve food security comes from the government in the form of food rations and *njaa marufuku* programs which distribute food to the locals through the provincial administration. The majority of the beneficiaries indicated that the assistance was inadequate and would like the programs improved by providing financial support to

the hunger stricken, increasing the support, building food storage facilities, providing adequate agricultural extension services, and providing farmers with certified farm inputs. If the people in Laikipia County are given support, they can achieve food security, as the soils are fertile but lack of water and certified farm inputs have been the main impediments to food security in the county. There is also a strong need for regular

monitoring and evaluation mechanisms for cash transfer programs to determine the extent to which these programs alleviate food insecurity. The fact that safety net programs have many aspects in common suggests a strong case for harmonizing the indicators used to monitor them, especially given the constrained budgets and limited capacity for designing and maintaining monitoring and evaluation systems.

Proposals, Recommendations and Conclusion

This chapter covers proposals, recommendations, and conclusions based on the findings of the research study conducted in Laikipia County as outlined in Chapter 2.

4.1 Recommendations

This section presents some of the key policy and programmatic recommendations towards ensuring food security in Laikipia County as given by the research participants. These recommendations are derived both from the quantitative data obtained from the baseline survey of households heads in the county and the qualitative data from the FGDs, institutional representatives, testimonials, and debriefing meetings on food security held with stakeholders from Laikipia County. The recommendations include the following:

- a) **Water for irrigation** should be made available by harvesting rainwater, drilling boreholes, constructing dams, securing water pans, and providing water tanks. Piped water should be supplied to all residents in the county at an affordable cost.
- b) **Agriculture extension officers** should be employed in larger numbers and the few who are already there retrained through refresher courses to update their skills on new technologies so that they can be more effective in helping farmers to use their lands maximally. The county should also invest in new technologies like greenhouses to maximize agricultural production.
- c) **Infrastructure** should be improved to facilitate the sale of produce and livestock by rehabilitating the existing earth/murram road network and building bridges where roads cross to enhance safety when crossing such rivers during rainy seasons. An improved road network will also facilitate access to farm produce and livestock markets as well as to the hospitals to enhance access to health facilities by all.
- d) **Security** in the county should be enhanced through disarming of all community members that pose a security threat/concern. These communities or individuals should be supported to engage in occupations that will enable them contribute to the county's development and to food security. The government should also repossess all idle land and redistribute any illegally acquired land to squatters and IDPs to improve food security in Laikipia. The development and implementation of land policies should be hastened to control the buying of large tracts of land by foreigners while leaving the community landless.
- e) **Social protection** should be enhanced by providing subsidized fertilizer to improve farm productivity. The use of improved quality certified seeds will increase crop yields. In addition, effective agricultural and livestock extension services at the grass roots will ensure that all farmers have access to information on modern

and innovative farming methods besides using land maximally.

Subsidized fertilizer should be packaged in smaller quantities of 20 kg, 10 kg, and 5 kg to make it accessible to more farmers because the 50 kg pack is not affordable by most small scale farmers. The fertilizer supply network should also be devolved to the locational level where everyone can access the inputs.

Agricultural training institutions should be established in the county to train farmers on better methods of farming, while facilitating the local extension officers in order to cover all the farmers in the county. There should be a price and quality control board to ensure that the farmers get good quality seeds for better yields at an affordable price.

An electric fence should be built around the parks to address the human-wildlife conflict. Enclosing the wild animals will keep them away from destroying crops and human life. There should be compensation for the crops that are destroyed by wild animals.

- f) **Government support program** should involve the citizens and the church in the identification of beneficiaries and disbursement of funds to curb favoritism and corruption. The county government should also offer bursaries and other forms of support from the CDF to bright children while at the same time being accountable to avoid misappropriation of funds. Laws governing the utilization of these funds should be enforced and any corrupt individuals punished.
- g) **An enabling business environment** should be created to enhance citizen's livelihood activities through providing space for small scale traders and empowering both the youth and women to start small enterprises. The

installation of electricity in rural markets and creation of employment opportunities at the county level, combined with a wage increase for casual laborers, will reduce unemployment rates. The government should also build slaughter houses and install cooling facilities to enable livestock farmers to engage in the business of slaughtering and selling meat products. Farmers should also be compensated adequately for their farm produce by eliminating middlemen who exploit them.

- h) **School feeding programs:** The government should increase the number of primary schools and facilitate school feeding programs in order to retain the pupils at school. There is also need to build technical colleges in the area to equip the youths with skills for self-employment. This action will reduce insecurity, drug abuse, and the consumption of illegal brew in the county. The respondents also recommended that there should be family life education programs in the villages and informal settlements to support family planning.

4.2 Key Policy and Programme Proposals

The following are some key proposals by AWSC based on recommendations by participants from Laikipia County and literature review on best practices from countries that have implemented programs and legal frameworks for enhancing food security. The research findings from Laikipia County illustrate that about 12 per cent of the county's population consists of people who are often or always hungry and require strategic interventions to ensure they are food secure. Food insecurity has negative

implications, especially for children and the development of their potential. Therefore, the implementation of Article 43(1)(c) of the Constitution, which guarantees every person the “right to be free from hunger, and to have adequate food of acceptable quality”, must be a development priority for all Kenyans.

The research findings also revealed that the main sources of accessing food or the sources of livelihood for the majority of the respondents from Laikipia County were livestock keeping (35%) and crop farming (34%). Another 17 per cent of the respondents depended on trade/small businesses while 13.8 per cent relied on employment as their main source of accessing food. The following proposals aim at addressing the multidimensional aspects of food security in Laikipia County.

4.2.1 Support Programmes for Hungry Households that Depend on own Production

The national and county governments should establish a program to support those severely affected by hunger to ensure that they have access to food through either increased production, creation of employment for casual laborers, and provision of opportunities for markets and trade. As in the case of India, in order to ensure efficient and transparent targeting of the food-poor households, we recommend the development of a clear legal framework to ensure the implementation of support programs for the hungry people of Laikipia for the purpose of addressing this dehumanizing situation while responding to Article 43 (1)(c) of the Constitution.

The AWSC recommends that through targeting the 34 per cent of the county’s population that relies on own production to supply their food needs, the national

government, through the county government, should support the implementation of family/household programs as contained in the following proposals:

- a) **Rain Water Harvesting:** Facilitate the provision of subsidized roofing materials (iron sheets) for housing and water tanks to facilitate rain water harvesting.
- b) **Capacity Building in Agriculture:** Support capacity building on better farming methods as well as utilization of the extension services to improve food security. This action will entail the employment of agricultural extension officers to train farmers on methods of increasing agricultural production through the use of modern farming techniques and the latest agricultural information such as the use of improved seed varieties, pesticides, green houses, fertilizers, irrigation, crop diversification, use of machinery, and artificial insemination.
- c) **Cold Storage Facilities for Perishable Foods:** From the research, 57 per cent of the respondents said they stored non-perishable food while 26 per cent stored perishable food. Poor storage and lack of markets were common problems faced by almost all the respondents. We recommend that the county invests in the construction of accessible food markets with cold storage facilities to cater for the surplus perishable food and thus stabilize food prices. This measure will help the 26% of the respondents whose main source of food is through trade/small businesses.
- d) **Value addition:** The county government should invest in the establishment of small-scale organic food processing plants and non-traditional crop production units run by county residents

to transform agricultural commodities into high value products.

- e) **County Water Storage and Strategic Food Reserves:** Wastage and losses incurred as a result of plant diseases and pests infestation, poor weather, destruction by wild animals, and lack of adequate storage facilities during surplus production have resulted in massive food insecurity as reported during the survey. We recommend the establishment of county strategic food and water reserves to help alleviate the food insecurity problem in Laikipia County.
- f) **Water for Irrigation and Domestic Use:** Facilitate the purchase of materials such as tanks, pipes, water pumps, borehole drilling machinery, gutters, and other equipment/materials for rain water harvesting in schools, health centers, and urban centers.
- g) **Cash Transfer:** The County government has shown commendable effort towards the allocation of funds to the elderly in addition to what the national government has allocated for this group through such programs as OVCs, PWDs, and school feeding programs. Many respondents (85.7%), however, were dissatisfied with the manner in which funds from these programs were managed, allocated, and distributed. We, therefore, propose that the county government should establish a Food Security Committee to oversee the proper targeting of beneficiaries including monitoring and evaluating the implementation process as well as providing exit strategies for the beneficiaries.

4.2.2 Employment Creation - One Job for every Poor Household

The Government should develop a policy that allows the county and national governments

to identify the poor and hungry households and create employment for at least one person in these households for at least 200 days in a year. This intervention will cater for the respondents from Laikipia County who stated that they were engaged in casual labor as a source of livelihood. The beneficiaries of such programs will be engaged in green jobs which include water conservation and water harvesting; drought-proofing (including afforestation and tree planting to increase the forest cover to 10 percent of Kenya's land mass; construction of irrigation canals, including micro and macro irrigation works; and construction of roads and maintenance of government buildings and other structures.

4.2.3 Economic Empowerment of Youth and Women

The government's efforts to provide employment, especially for the youth and women, are indeed commendable. The various initiatives such as the Women Enterprise Fund, the Youth Enterprise Fund, and the Uwezo Fund will make it possible for many youth and women to engage in gainful employment although a lot still needs to be done. The majority of the youth are unemployed and some have even resorted to social ills in search for a source of livelihood. Our research revealed that 44.7 per cent of the respondents from Laikipia were youth between the ages of 15–34 years and job creation will make it possible for them to engage in meaningful employment. It is important that the youth are given relevant training and knowledge on the existing funding opportunities and entrepreneurial skills so as to make the best use of these facilities.

4.2.4 Developed and Improved Infrastructure

There is need for improvement of the county's poor infrastructure through rehabilitation of the existing road network, especially in the county's interior. An effective road network will ease the movement of goods and access to markets, which is likely to lead to lower food prices.

4.2.5 Implementation Mechanisms for the Laikipia County Food Security Program

Given the research findings discussed in detail in this report, we propose the establishment of County Food Security Committees comprising the county executive officer in charge of agriculture, two social services persons of opposite gender with knowledge and experience in matters related to food security (appointed by the Governor), and two persons of opposite gender to represent special interests (also appointed by the Governor). These committees will monitor the food security and nutrition situation and evaluate the progress of implementation of food security programs in the county. They will also provide guidelines for appropriate targeting as well as the criteria for the selection of food insecure families and individuals in the county.

4.2.6 Increased Security

The research findings indicate that insecurity was a major contributor to food insecurity across the county. Insecurity, as reported by the respondents, is caused by raiders who terrorize residents, steal livestock, and destroy crops. Insecurity in the area is further exacerbated by human-wildlife conflict.

4.2.7 Drug and Alcohol Abuse

The abuse of drugs and alcohol in the county, especially by the youth, also contributes to food insecurity. There is need for enhanced support for the activities of NACADA in

dealing with this menace. The county should also establish rehabilitation centers for the victims of alcohol and drug abuse.

4.2.8 Enforcement Mechanism for Ensuring Food Security

The AWSC proposes that a legislative framework should be developed to support the enforcement of food security programs aimed at the implementation of Article 43(1)(c) of the Constitution. In this framework, it is proposed that a Food Security Authority should be established and the governors take responsibility at the county level. This recommendation is in line with the best practices in other countries such as Columbia, Mauritius, South Africa, and India.

4.3 Conclusion

The baseline survey extensively covered Laikipia County so as to determine the food security situation in the county. It is clear from the research findings that the county is experiencing a high level of food insecurity, a situation that calls for immediate interventions to ensure food security. It is possible to attain sustainable food production in Laikipia County, but first the underlying causes of scarcity of resources must be addressed and interventions harnessed to the grassroots to enable both state and non-state actors to be involved in strategizing for food security measures. Under Schedule IV of the Kenya Constitution 2010, the county government has the responsibility of feeding its people by adopting agriculture as one of its functions. The residents of Laikipia County were very specific in their articulation of what needs to be done to maximize their capacity and ensure that the county becomes food secure. Consequently, it is important for the county government to conduct an impact analysis on

existing trends so as to close any gaps in developing a food secure society; otherwise the idea of a food secure county will only be a dream for Laikipia.

The adoption and implementation of the proposed interventions will ensure that every resident of Laikipia County is food secure, an

achievement that will go a long way towards realization of the MDG 1, Vision 2030, and above all, the Constitution of Kenya, Article 43 (1)(c) that guarantees every person the “right to be free from hunger, and to have adequate food of acceptable quality”.

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