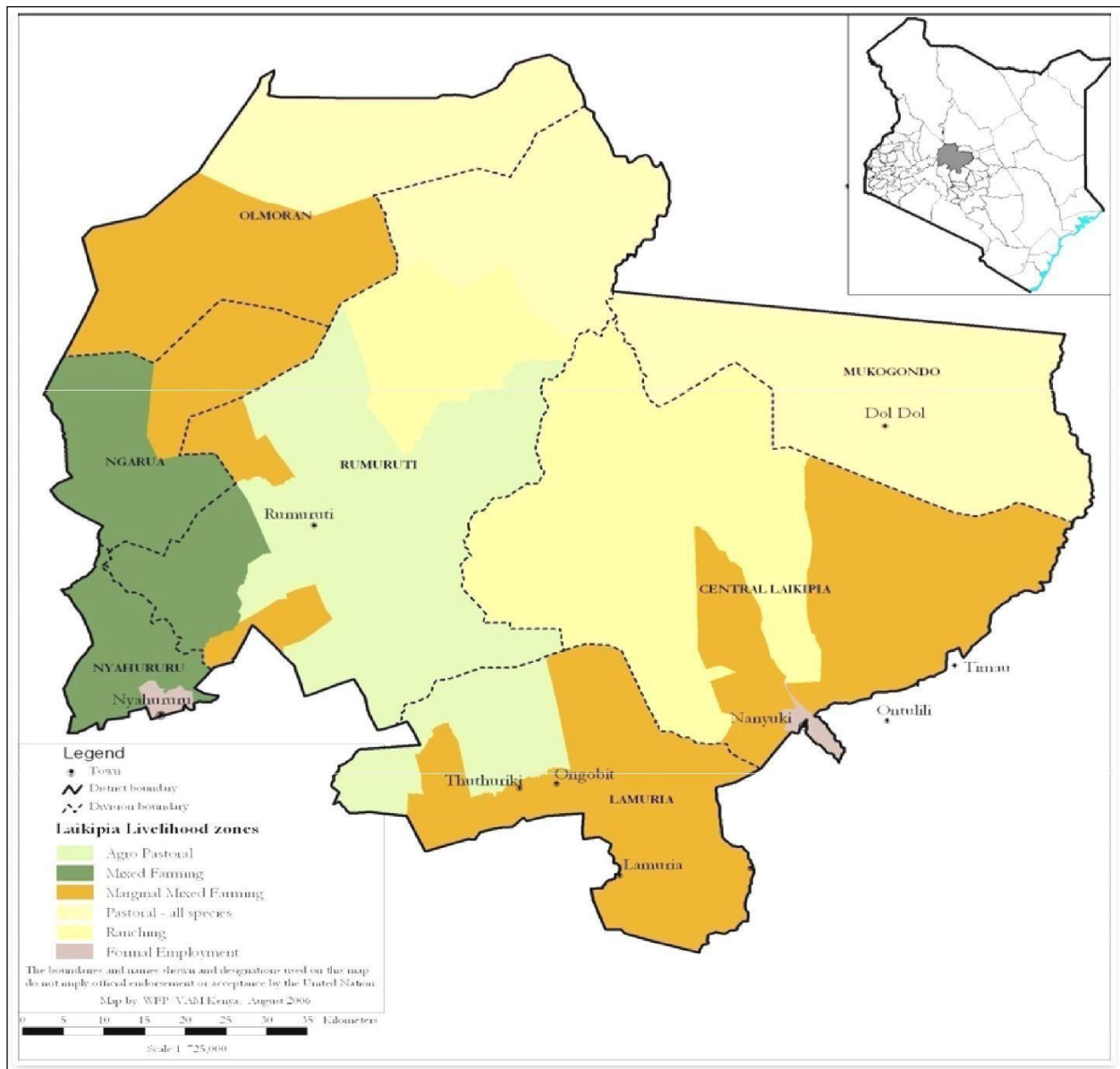


**LAIKIPIA COUNTY**  
**2017 LONG RAINS FOOD SECURITY ASSESSMENT REPORT**



**A Joint Report by the Kenya Food Security Steering Group (KFSSG)<sup>1</sup> and  
 Laikipia County Steering Group  
 July, 2017**

<sup>1</sup> Kennedy OSANO (WFP), Stephen MURITHI (NDMA) and Laikipia Technical County Steering Group (CSG)

## **EXECUTIVE SUMMARY**

The mixed farming and marginal mixed farming livelihood zones of the county are classified in stressed (IPC Phase 2) while the pastoral all species livelihood zone is classified in crisis phase (IPC Phase 3). The poor performance of the 2017 long rains season has seen a decline in food stocks at household level to 48 percent of normal with the average maize price retailing at 61 Ksh per kilogram in June which was 57 percent above the LTA. There has been steady increase in maize price from January attributed to shortage of maize at the market and household level due to prolonged drought. The projected production was 7, 30, 8 and 57 percent of their long term average (LTA) for maize, beans, wheat and potatoes respectively. Milk productivity declined for all the livelihood zones with mixed farming, marginal mixed farming and pastoral all species currently having 1.5, 1 and less than 0.5 litres per household compared to the normal 5, 4.5 and 2 litres for mixed farming, marginal mixed farming and pastoral zone, respectively. Milk prices also increased by 50 percent to Ksh 70 per litre further compounding household food access.

The poor body condition of livestock as a result of poor forage had significantly led to reduced livestock prices thereby reducing the purchasing power of pastoralists. The tropical livestock unit (TLU) in the mixed farming and marginal mixed farming were stable however, in the pastoral livelihood zone, the TLUs were 5-6 for all households compared to the normal TLU of 10-11 attributed to migration, livestock mortality and sales (normal/off-take/destocking). The continued earlier than normal out-migration especially in the pastoral zone has so far led to about 95, 80 and 40 percent of cattle, sheep and goats respectively moving out of the zone.

According to the Integrated Phase Classification (IPC) for Acute Malnutrition conducted in July 2017, Laikipia County reported a Serious Nutrition Situation (Phase 3; GAM WHZ 10.0 – 14.9 percent). Further analysis of data from NDMA sentinel sites show that proportion of children under five with mid-upper-arm circumference (MUAC) <135 mm has been steadily increasing from January (3.5 percent) to June where it stood at 6.7 percent and currently is at 19 percent above the LTA. The main contributory factors to deteriorating nutrition situation in the county were inadequate dietary intake, disease burden and household level food insecurity. These factors compounded with the chronic issues prevalent in the county like insecurity, limited access to quality health services and inappropriate child care and feeding practices, increase the vulnerability of the population, and aggravate malnutrition rates. Current situation is further worsened by the ongoing nationwide nurse's strike which has led to disruption of health care service delivery in the County. Likewise, the the major contributing factors to food insecurity in the county include; poor performance of the long rains which were 50 percent of normal, low demand for livestock in the markets, high food commodity prices and decrease in prices of livestock.

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## 1.0 INTRODUCTION

### 1.1 County Background

Laikipia County is situated within the Great Rift Valley Northwest of Mount Kenya and borders Samburu County to the North, Isiolo County to the Northeast, Meru County to the South, Nyandarua, Nyeri and Nakuru Counties to the Southwest and Baringo County to the West. The county covers an area of 9,462 square kilometers with a population of 399,227<sup>2</sup>. It is divided into three sub-counties namely Laikipia West, Laikipia North and Laikipia East. The County is physically diverse, covered by open grasslands, basalt hills, and dense cedar forests, fed by the Ewaso Nyiro and Ewaso Narok rivers. The county has four main livelihood zones: mixed farming, marginal mixed farming marginal mixed farming, pastoral, and formal employment. It is home to ethnically diverse communities including the Maasai, Kikuyu, Meru, Turkana, Samburu and Pokot. Crop farming, cattle rearing on large commercial ranches, and community-owned rangelands are the main livelihoods, with 65 percent of the pastoral livelihood zone under ranching (Figure 1).

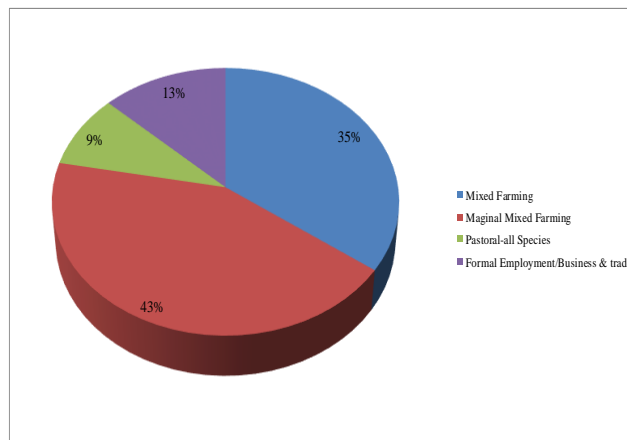


Figure 1: Population distribution by livelihood zone

### 1.2. Objectives and approach

#### 1.2.1 Objective

The overall objective of the assessment was to develop an objective, evidence-based and transparent food and nutrition security situation analysis, taking into account the cumulative effect of previous seasons in order to inform the government and relevant stakeholders on the status of food security across the livelihood zones and administrative units of the county. The assessment also aimed to identify areas with high severity of food insecurity and provide recommendations for appropriate short or long term response options. The assessment specific objectives included;

- Establish the quality and quantity of the 2017 March to May long rains at the livelihood zone level and assess their impact on all key sectors including crop agriculture, livestock, water, health and nutrition and education.
- The team was also meant to determine the impacts of other compounding factors on household food security, such as conflict, water availability, pasture and browse performance, livestock diseases and pests, crop pest and disease, food prices and floods.

#### 1.2.2 Approach

The one week assessment; conducted from 10<sup>th</sup> to 14<sup>th</sup> July 2017 involved data collection from various sources using sectorial checklist tools, including livelihood baseline data, sectorial

<sup>2</sup> KNBS National Population Census 2009

reports, price data, 2017 nutrition SMART survey and the monthly drought early warning bulletins. An initial County Steering Group (CSG) meeting was conducted to share preliminary information with other partners and the national team on 10<sup>th</sup> July at NDMA Boardroom. Thereafter, together with the formed Laikipia Technical CSG, a two day transect drive was agreed upon, planned and done across the major livelihood zones. This was to help validate the initial sectorial briefings considering in mind coverage of the major livelihood zones. During the transect drive exercise , focused group discussions (FGD) were held, stop overs at the schools, dispensaries, markets, water sources as well as National Cereals and Produce Board were organized to ascertain the county food stocks.

After the transect drive, the team jointly reviewed the data. Reports provided earlier were enriched with field interviews to come up with a report that was presented before the CSG for validation and approval. The CSG finally adopted the preliminary report and gave the KFSSG team a go ahead to draft the final county report for public awareness and government planning. The findings and recommendations were provided at both the County and Sub-county levels for planning purposes. The Integrated Food Security Phase Classification (IPC Version 2.0) was employed in classifying severity levels of food insecurity in different livelihood zones.

## 2.0 DRIVERS OF FOOD AND NUTRITION SECURITY IN THE COUNTY

### 2.1 Rainfall Performance

Generally the performance of long rains was below normal. The long rains were characterized by a late onset in the third dekad of April as opposed to the normal first dekad of March. The cumulative amount of rainfall received across the County was between 50-75 percent of normal with exception of some pockets of the pastoral livelihood zone in Laikipia North (Chumvi) which received 25-50 percent of normal rainfall and parts of Laikipia Central (Marura, Thingithu, Kinamba) which received 90-110 percent of normal rainfall. It was characterized by poor temporal and uneven spatial distribution. The long rains ceased early in the third dekad of May as opposed to the first dekad of June normally (Figure 2).

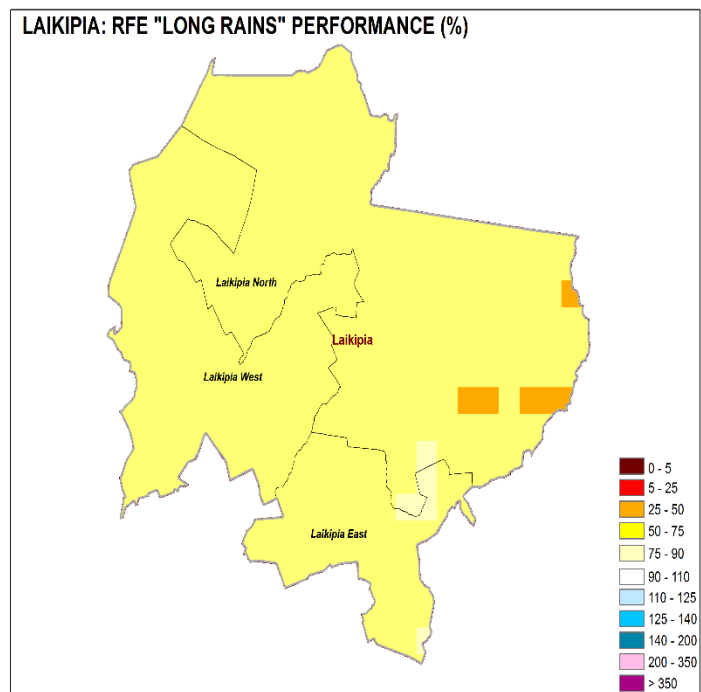


Figure 2: Rainfall Performance as a percentage of normal

### 2.2 Temperatures and Hailstone rain

The county for many months now has been experiencing sunny and dry conditions during the period with very high temperatures during the day and low temperatures at night leading to dry

dusty conditions. On 4<sup>th</sup> July 2017, a blanket of hail stones covered large portions of farm lands around Nyahururu (Laikipia West sub-county) an experience which was new, shocking and negatively affected farms. Hundreds of farmers in the county counted their losses after the hail stones destroyed crops during a heavy downpour on that night. Farmers at Gatundia and Rumuruti locations were shocked in the wake of the two-hour storm that left their farms covered in thick layers of hailstones. During the transect drive, the team interviewed famers who elaborated that it took about five hours for the hailstones to melt and some were opting to till the land afresh.

### **2.3 Insecurity/Conflicts**

In the early months of March, there was mass in-migration of livestock from neighboring counties including Isiolo, Samburu, West Pokot and Baringo into both commercial and communal ranches including Laikipia nature and conservancy, Mugie, Sosian and Suyian ranches. This thereby increased competition for pasture and water as the livestock population were above the ranches carrying capacity causing conflicts with both the host pastoral community and commercial ranchers. This later prompted the government to take an urgent action upon which Kenya police and Kenya defense forces were deployed to forcefully evict the herders to maintain order and this resulted to deaths of livestock estimated to be above 400.

### **2.4 Other shocks and Hazards**

Human Wildlife conflict were also reported in Laikipia West and North where wild animals encroached into farms and watering points destroying crops and livestock greatly affecting the expected seasons produce. This problem is perennial and was more amplified during the long rains when most of the crops in the farms were destroyed by wildlife due to their increased activity in search of water and also too much encroaching into the ranches causing competition for water by livestock and wild animals.

### 3.0 IMPACTS OF DRIVERS ON FOOD AND NUTRITION SECURITY

#### 3.1. Availability

Availability of food in Laikipia County is related to livestock production in pastoral-all species and marginal mixed farming livelihood zones and crop production in both mixed farming and marginal mixed farming livelihood zones. It therefore takes into account the available food stocks both at household level and in the market. Households, traders, millers and NCPB held an estimated 29 percent of the normal stocks of maize and minimal contribution is expected from the current season's crop. This maize can only be available for less than 1.5 months. Under normal situations at such a point in time, available maize always lasts three months. Milk production reduced from 5 litres to 1-1.5 litres in mixed farming, 4.5 litres to 0.5-1 litre in marginal mixed farming and 2 litres to 0-0.5 litres in pastoral all species zone. Considering that milk production is expected to decline further and maize stocks expected to last for about 1.5 months, the household food insecurity is expected to increase across all the livelihood zones.

#### 3.1.1 Crop Production

The main crops planted in the county during the long rains are maize, beans, wheat and potatoes. The marginal mixed farming and pastoral livelihood zones are both short and long rains dependent while the mixed farming livelihood zone is long rains dependent. Different crops contribute differently to the households' food and cash income across the livelihoods (Table 1).

**Table 1: Crop production contribution to food and cash income**

Crop Type	Livelihood Zone			
	Mixed Farming		Marginal Mixed Farming	
	Cash Income	Food	Cash Income	Food
Maize	55%	65%	12%	66%
Beans	8%	15%	40%	11%
Irish potatoes	4%	10%	24%	8%

#### Rain-fed Crop Production

The four main crops grown under rain-fed agriculture during the season were maize, beans, wheat and potatoes. The areas planted were 81, 183, 17 and 91 percent of the long-term average respectively. Farmers are projected to realize 7, 30, 8 and 57 percent of their long term average harvest for maize, beans, wheat and potatoes in that order (Table 2). The area under beans significantly increased due to supply of beans about 2 tonnes by the County Government. The decline in acreage and production of maize was mainly attributed to the late on-set and poor performance of the long rains, delayed planting, destruction by wildlife and the recent hailstones especially in Laikipia West Sub-county. Most crops as were observed during the two days transect drive across the County are wilting before maturity and have not even reached knee high. Highly diminished yields of maize are expected in both mixed farming and marginal mixed farming zones and farmers hope are on the off season rains of July.

**Table 2: Rain fed crop production**

Crop	Area planted during 2017 Long rains season (Ha)	Long Term Average area planted during the long rains season (Ha)	2017long rains season production(90 kg bags) Projected	Long Term Average production during the long rains season (90 kg bags)
Maize	28015	34500	98052	1407500
Beans	15402	8400	32344	105000
Wheat	1102	6500	16530	195000
Potatoes	235	257	775 (tons)	1350 (tons)

### Irrigated Crop Production

The main crops grown under irrigation included cabbages, onions and tomatoes. The area under irrigation for cabbages, onions and tomatoes reduced by 61, 51 and 43 percent compared with the long term average for the season and the yield is expected to decline by 46, 52 and 50 percent respectively (Table 3). The decline in production is attributed to reduced water supply in the main rivers and springs leading to water rationing and scaling down of irrigation activities.

**Table 3: Irrigated Crop Production**

Crop	Area planted during 2017 Long rains season (Ha)	Long Term Average area planted during the Long rains season (Ha)	2017 Long rains season production (90 kg bags) Projected/Actual	Long Term Average production during the Long rains season (90 kg bags)
Cabbage	32	82	1704MT	3170MT
Tomatoes	42	74	2424MT	4800MT
Onions	24	49	272MT	568MT

### Maize Stocks

Maize stocks are scarce across all livelihood zones. Households, traders, millers and the NCPB held 48, 16, 6 and zero percent of their long-term average respectively. NCPB had no stock of maize since all the old stocks had been sold and were yet to be replenished by the government imports (Table 4). The available stock held by households is mainly in the mixed farming and a few in marginal mixed farming as households in the formal employment and pastoral all species livelihood zones predominantly relied on markets for staple food supplies. The available stocks mainly constituted by maize crop harvested from the short rains season of 2016 are expected to last for twenty days compared with 3 to 4 months normally. The reduction in stocks is attributed to low production volumes in 2016 and selling early in the year as a result of high prices from Kshs 2,300 to 4,800 at farm gate. The low purchasing power of the households coupled with high staple food prices especially in the pastoral all species zone affected accessibility to staple food despite their being available in the market.



**Table 4: Amount of Maize stock held by various actors**

Commodity		Farmers	Traders	Millers	NCPB	TOTAL
Maize	Current	29700	4,890	3,200	0	49,790
	LTA	61,750	29,850	46,000	3,000	132,600

### 3.1.2 Livestock Production

Livestock production is the main economic activity in Laikipia County. The main livestock types found in the county are cattle, sheep, goats, camels and donkeys. The small stock (sheep and goats) are mostly reared for provision of basic household commodities like food and cash while the large stock (cattle and camels) are reared for the provision of food and income for major investments. Donkeys on the other hand are used as a means of transport and provision of cash income (Table 5).

**Table 5: Livestock Average Percentage Contribution of Cash Income**

Livelihood zone	Livestock average % of cash income contribution
Pastoral Zone (PZ)	90
Marginal Mixed Farming	52
Mixed Farming	30

### Pasture and Browse Condition

Currently, pasture situation in the mixed farming and marginal mixed farming zones is poor whereas in the Pastoral all species zones is depleted (most of the areas bare). Pastures in the private ranches are also depleted (No pastures in most of the ranches i.e. Mugie, Loisaba, Suyian, Kifuko, Mpala, Olenaisho, Sosian among others) in the pastoral zone attributed the forceful intrusion by herders from Samburu, Isiolo, Baringo and West Pokot counties as from early this year. The little available pasture is expected to last 2, 1 and 0.5 months in mixed farming, marginal mixed farming and Pastoral all species zones respectively. Browse is fair in both mixed farming and marginal mixed farming while poor in pastoral all species and is expected to last 3, 2 and less than a month in mixed farming, marginal mixed farming and Pastoral zones respectively. This is attributed to poor performance of 2017 long rains and the 2016 short rains leading to reduced regeneration of forage. The hard hit wards in the pastoral all species zones include Mukogodo West, Sosian, parts of Mukogodo East and Segera wards (Table 6).

**Table 6: Pasture and Browse Condition and Duration to last**

Livelihood	Pasture				Browse			
	Condition		Duration (In Months)		Condition		Duration (In Months)	
	Current	Normal	Current	Normal	Current	Normal	Current	Normal
Mixed Farming	Fair	Good	2	4	Fair	Good	3	4.5
Marginal mixed farming	Poor	Good	1	4	Fair	Good	2	4
Pastoral	Depleted	Fair	-0.5	3	Poor	Good	-1	3

### Livestock Body Condition

Generally the body condition for grazers in the county can be described as poor to emaciated in the pastoral zone (with exception of Sheep in mixed farming and marginal mixed farming) whereas it is poor to fair for the browsers in all the livelihood zones (Table 7). In comparing the zones, the body condition of livestock is worse in pastoral all species zone compared to the mixed farming and marginal mixed farming zones. This is attributed to little regeneration of pasture and browse due to the below normal 2016 short and 2017 long rains coupled with earlier than normal in-migration of livestock from Isiolo, Samburu, West Pokot and Baringo Counties into the pastoral grazing communal areas.

**Table 7: Livestock Body Condition**

Livelihood zone	Cattle		Sheep		Goat		Camel	
	Current	Normal	Current	Normal	Current	Normal	Current	Normal
Pastoral all species	Emaciated	Good	Poor	Good	Poor	Good	Fair	Good
Marginal mixed farming	Poor	Good	Fair	Good	Fair	Good	Fair	Good
Mixed Farming	Poor	Very Good	Fair	Very Good	Fair	Very Good	Good	Very Good

### Milk availability and consumption

The County milk productivity has reduced for all the livelihood zones and is extremely low for the pastoral zones where the little available litres are only produced from the sheep and goats (shoats) and a few camels. These are owned by very few households. Most livestock especially the cattle have migrated to Mt. Kenya forest and other areas in Nyeri County. All the milk produced in the households across all the livelihood zones are currently being consumed and it ranges from 0-1 litre per household. Milk prices have increased by about 50 percent above the LTA across all livelihood zones (Table 8).

**Table 8: Milk Production Consumption and Prices**

Livelihood zone	Milk Production (Litres)/Household		Milk consumption (Litres) per Household		Prices (Ksh)/Litre	
	Current	LTA	Current	LTA	Current	LTA
Pastoral all species	<0.5	2	<0.5	2	75	45
Marginal mixed farming	1	4.5	1	3	70	40
Mixed Farming	1.5	5	1.5	3.5	65	40

### Tropical Livestock Unit and Birth Rates

The tropical livestock unit (TLU) in the mixed farming and marginal mixed farming were stable i.e. were 2-3 for the poor households and 3-4 for the medium income households compared to the same values during normal times. However, in the pastoral livelihood zone, the TLUs were 5-6 for all households compared to the normal TLU of 10-11 but expected to worsen due the

continued conflicts, livestock mortality rates (currently at 7-10 percent). Variations of average TLUs across the livelihood zones was attributed to migration, livestock mortality and sales (normal/off-take/destocking). Livestock birth rates across all the species had slightly declined due to deteriorating body condition.

### **Livestock Mortality and Diseases**

There were reported livestock deaths occasioned by the harsh drought experienced around March-April, continuous cattle rustling and forceful eviction of herders from the private and communal ranches during the months of February through to March this year. The County department of livestock estimated the mortality rates to be at 7, 5, 3 and 1 percent for Cattle, Sheep, Goats and Camel respectively across all the livelihood zones in the entire County. There were reported cases of Lumpy Skin Disease (LSD) and Foot and Mouth disease (FMD) in all the livelihood zones. Cases of rabies were reported in Nanyuki and Umande wards in Laikipia West Sub-county.

### **Migration**

There were cases of migration reported in the pastoral all species Livelihood Zone experienced earlier than normal both in and out-migration to the areas Mukogodo and Ngare Ndare forests, Mt. Kenya forests and a few private ranches whose resources have been depleted. In the pastoral zone, it was estimated that about 95, 80 and 40 percent of cattle, sheep and goats respectively have migrated out of the zone. The migration described as not normal by the county department of livestock was mainly in search of pasture and water.

### **Livestock Water and Markets**

The major water sources for livestock were pans, sand dams, boreholes and rock catchments for the pastoral zone and rivers, water pans and boreholes for both the mixed farming and marginal mixed farming zones. Most of the surface water source; water-pans, rivers and sand dams in the pastoral areas had dried up (about 70 percent) due to low recharge levels resulting to increased trekking distances. The main livestock markets are Doldol, Kimanjo and Chumvi in the pastoral all species zone. Main livestock in these markets were Cattle, Goats, Sheep, Camels and Poultry. There were reduced livestock marketing activities in the pastoral markets as most of the cattle had migrated out and the few available were not in good body condition. More volumes of livestock were being traded in the marginal mixed farming zone followed by the mixed farming zone and dismal in the PZ zones due to the out-migrations that have occurred in the pastoral zone.

### **3.2 Access**

The County livestock market operations were not normal in some areas due to the migration caused by the prolonged drought conditions. Despite the stability of maize prices in the month of June, purchasing power in all the livelihood zones reduced due to poor crop production and low livestock prices as a result of poor body condition respectively. Most surface water sources had dried up especially in the pastoral all species zone, a few boreholes had also broken down and constant conflicts for pasture and water as well as human-wildlife conflicts made access to water increasingly difficult as reflected in the reduced consumption, increasing distances and waiting time at sources.

### 3.2.1 Market operations, market supply and traded volumes

The main markets in the county are Nyahururu and Sipili in the mixed farming zone, Rumuruti, Nanyuki and Olmoran in the marginal mixed farming zone and Doldol, Kimanjo and Chumvi in the pastoral all species zone. Major markets across the livelihood zones were operational although some markets had low livestock volumes due to migration, low demand due to below average body conditions and increased distances to markets from grazing areas. The major livestock traded included goats, sheep, cattle and camels. The major food items traded in the market include; maize and maize flour ‘posho’, rice, sugar, milk beans, and wheat flour. A majority of the households in the pastoral livelihood zones were depending on the markets for food commodities.

#### Maize Price

Average maize price in the County retailed at 61 Ksh per kilogram in June 2017 which was 57 percent above the LTA. There has been steady increase in maize price from January to May 2017 attributed to shortage of maize at the market and household level due to prolonged drought. However the slight decrease noted in June was due to the national government’s intervention of subsidizing maize that prompted the traders to respond by dropping the maize prices (Figure 3).

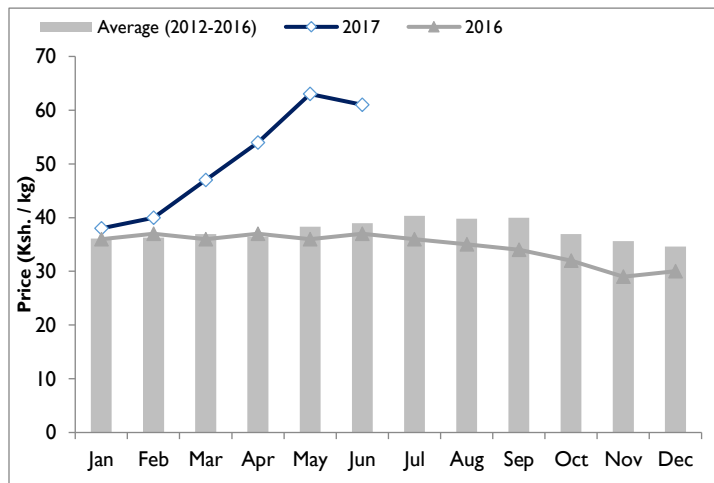


Figure 3: Maize Prices

#### Goat Prices

The average price for a goat in June 2017 was Ksh 3025 reflecting a 2 percent decline from the long term average of Ksh 3,093. The reduction in price is due to the current poor body conditions of livestock especially in pastoral all species zone. During the transect drive and the Focus Group Discussion held at Kimanjo market, the team was informed that prospective buyers were taking advantage of the drought and setting low buying prices for the goats in the market. Out-migration of livestock especially cattle migrated to other counties including Mt. Kenya area in Nyeri County resulted in a reduction in the volume of livestock traded in the markets (Figure 4).

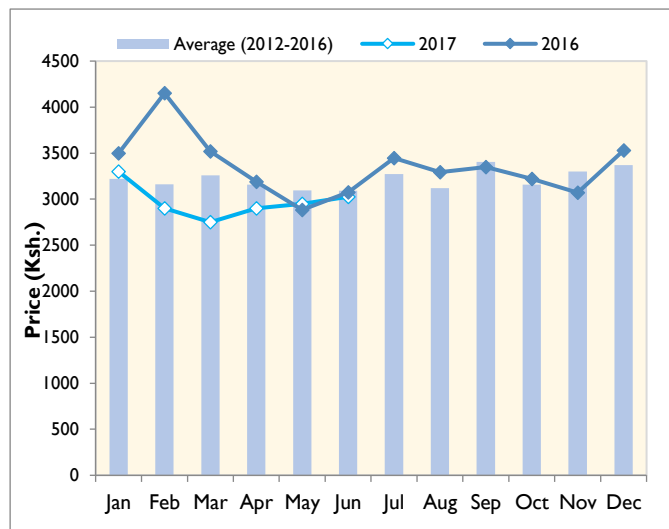


Figure 4: Goat prices

### 3.2.2 Terms of Trade

The June 2017 terms of trade (ToT) was 38 percent below the LTA with households being able to purchase 50 kg of maize from the sale of a goat. The ToT has been steadily declining since January 2017 compared to the LTA as well as 2016. The decline is attributed to low livestock prices versus high maize prices implying a significant reduction in purchasing power especially for the pastoralists community eventually reducing their household food availability and consumption and resulting to increasing food insecurity (Figure 5).

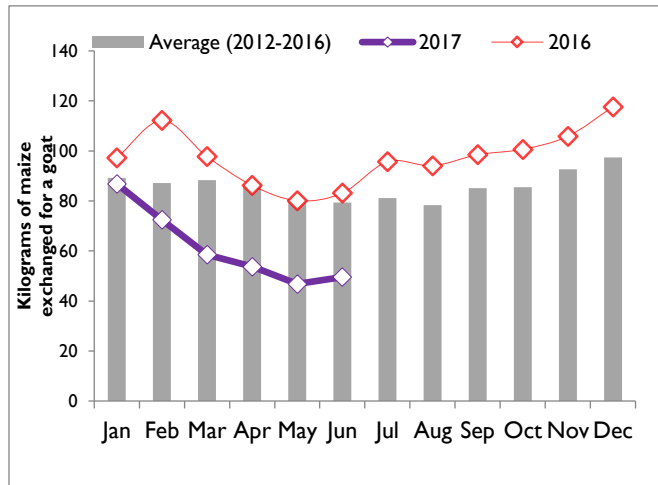


Figure 5: Terms of Trade

### 3.2.3 Income Source

In the formal employment/business trade livelihood zone, petty trade and formal waged labour contributes 60 and 30 percent income respectively. In the mixed farming zone, livestock, food crop and poultry production contributes 52, 20 and 10 percent income respectively. In the marginal mixed farming zone, food crop, livestock and cash crop production contributes 40, 30 and 10 percent income respectively. Livestock production and remittance/gifts contributes 90 and 5 percent income respectively in the pastoral all species zone. In pastoral zone where households entirely depends on livestock as the major source of income, the current low prices due to poor body condition and prevailing low production of milk is making them more food insecure as their purchasing power is significantly reduced.

### 3.2.4 Water and Sanitation

The main sources of water for the county were boreholes, shallow wells, rivers, springs earth dams and pans. The long rains were below average about 50-75 percent of normal, late and poorly distributed thereby unable to fully replenish the county's various water sources. The major water sources in use were underground water sources (boreholes and shallow wells) accounting for about 47.3 percent of the county water sources. About 80-90 percent of surface water sources in the pastoral all species zone including pans and dams had completely dried up due to lower recharge levels by the long rains; about 10 percent. Those in the mixed farming and marginal mixed farming zones were at about 30 percent full. Rivers were moderately depressed but flowing as a result of recent off-season rains experienced. Access to water from boreholes was reported to be occasionally disrupted by the breakdown of pumping systems and poor management by the project management committees.

### Water Distance, Waiting Time and Consumption

Generally, the return distances to water sources in the county variedly increased across the different livelihood zones with pastoral livelihood zone recording the highest distance as over 70 percent of its main water source drying up forcing households to trek further distances to access water (Table 9). In the pastoral areas served by boreholes and water pans, return trekking distances had increased from the average 5–8 Km to about 15-20 Km. The current waiting time

at water sources across the livelihood zones also increased with pastoral areas recording the highest waiting time of about 180 minutes compared to the normal 30 minutes. This was also attributed to drying up of most water source leading to increased population pressure at water points by immigrant households from water scarce areas that have settled close by to access water. In parts of Mukogodo East (Lorien sand dam dried up, Karikuri pumpset broken down) and West (Timamtut dam silted up) Segera (Naibor hand pump broken down) and Sosian wards (Olomorani borehole broken down). The water shortage necessitated water trucking interventions both to the community and institutions.

**Table 9: Watering Distance, Consumption and Waiting Time**

Livelihood Zone	Watering Distance		Consumption		Waiting Time	
	Current	Normal	Current	Normal	Current	Normal
Pastoral	15-20km	5-8km	5l/pp/d	15l/pp/d	180 min	30min
marginal mixed farming	3-5 km	2-2.5 km	18l/pp/d	28l/pp/d	60 min	30 min
mixed farming	1-1.5 km	0.5-0.8 km	12l/pp/d	15l/pp/d	20 min	10 min

Water consumption has decreased across the county except for the formal employment/business trade livelihood zone where consumption levels were normal at 20 litres per person per day (lpppd). In the pastoral zones, the consumption was at 5lpppd below the average of 15lpppd, while in the marginal mixed farming areas, consumption ranged at 18lpppd, below the normal of 28lpppd and in mixed farming the consumption was at 12lpppd below the average of 15lpppd. The reduced consumption was owed to the increased water scarcity and increased waiting time at water sources resulting to reduced availability and consumption at household level negatively impacting on food security by constraining food preparation and utilization especially in the pastoral areas.

### **Cost of Water**

The cost of water remained free for water from water pans, shallow wells and directly from the rivers in the county and remained constant at 5-10 Ksh per 20 litre jerrican from water kiosks. However, there were some extreme cases like in Loren, Bokish and Nyakumu in the pastoral areas, Olmorani in the marginal mixed farming and Kinamba in mixed farming where it was costing 20 Ksh per 20 litre jerrican. The additional costs was also due to the transportation costs. Conflicts (Cattle rustling) in places like Kinamba also led to the increased cost as the borehole serving Kinamba was intentionally broken down by the fighting communities leading to scarcity of water.

### 3.2.5 Food Consumption

According to the World Food Programme (WFP) food security outcome monitoring (FSOM) study in Laikipia in May 2017, the percent of households with poor, borderline and acceptable food consumption was 14, 26.2 and 59.8 percent respectively compared to 1.3 and 9.7 percent for borderline and acceptable same period in 2016. The declining food consumption could be attributed to effects of the poor rainfall performance in that part of the county where rains ranged from 50-75 percent of normal. The low amounts, poor and uneven spatial distribution of rainfall resulted in accelerated deterioration of forage and livestock body conditions and productivity leading to unfavorable terms of trade and diminishing purchasing power especially in the pastoral zones. According to the SMART survey of June 2017, 7.7 percent of households consumed less than 3 food groups, 48.6 percent consumed between 3-5 food groups and about 43.7 percent consumed more than five food groups.

### 3.2.6 Coping Strategy

The coping strategies index (CSI) for the month of May 2017 in Laikipia in terms of livelihood coping strategies, the percentage of households not adopting coping strategies was 10 percent while those adopting stress, crisis and emergency coping strategies was 45.2, 20.3 and 24.6 percent respectively. In May 2016, the percentage of households adopting stress, crisis and emergency coping strategies according the FSOM study were 26.7, 25.3 and 45.3 percent respectively. According to the SMART survey conducted in June 2017, the average CSI was 19.5.

### 3.3 Utilization

There was generally an increase in the number of reported morbidity cases for both children below the age of five years and the general population from January to June 2017 compared to the same period last year. Due to reducing food consumption and dietary diversity, the proportion of children with MUAC <135 mm was 19 percent above the LTA. According to SMART survey of June 2017, only 25.9 percent of the households in the survey were reported to be treating their water.

#### 3.3.1 Nutritional Status

##### Morbidity and Mortality Patterns

The most common diseases reported in Laikipia were diarrhea, Upper Respiratory Tract Infections and malaria. Notably there was a sharp increase in Malaria cases from January to April compared to same period last year, however a drop was noted in the month of May and June 2017, with could be attributed to nurse's strike that led to disruption of primary health care service delivery across the

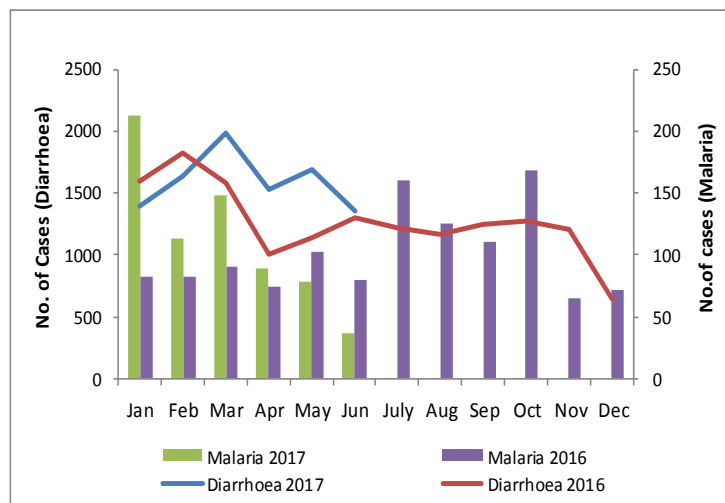


Figure 6: Under-five morbidity Pattern

county. Likewise, a sharp increase in diarrhea cases among children under-five was reported from January to June 2017 compared to same period last year. Overall, a general increase in occurrence of water borne diseases including dysentery and typhoid was noted reportedly due to contamination of surface water sources (water pans and shallow wells) especially in areas with low latrine coverage in the pastoral areas. No disease outbreak was reported in the County. There is no data for crude and under five mortality rates for the County.

### Immunization and Vitamin A supplementation

Analysis of routine vitamin A supplementation and immunization coverage data based on DHIS show that coverage of both is poor and below the national target of 80%. The proportion of children under one year who are fully immunized from January to June 2017 stood at 66.5 percent compared to 67 percent, same period last year. On the other hand, Vitamin A supplementation for children aged 6 - 11 months reduced from 51.8 percent (January to June 2016) to 42.5 percent in January to June 2017. Reduction is largely attributed to poor documentation of VAS at health facilities given that vitamin A is dispensed along other vaccines and the effects of ongoing nurse’s strike that has led to major disruption of basic health service provision including vaccination and micronutrient supplementation programs. However, it is important to note that, during Malezi Bora campaigns in the month of May, Vitamin A was supplemented in the Early Childhood Development (ECD) centers but possibly the reports have not been uploaded in the District Health information System (DHIS).

### Nutrition and Dietary Diversity

According to the SMART survey conducted in the county in June 2017, the rate of global acute malnutrition (GAM) by weight for height Z scores was 11.5 percent, severe acute malnutrition (SAM) was 2.2 percent and chronic malnutrition stunting was 25.2 percent. The results according to the WHO cut offs indicate a serious nutrition situation that needs immediate interventions. Further analysis of data from NDMA sentinel sites show that proportion of children under five with mid-upper-arm circumference (MUAC) <135 mm has been steadily increasing from January (3.5%) to June where it stood at 6.7 percent and currently is at 19 percent above the LTA. The main contributory factors to deteriorating nutrition situation in the county were inadequate dietary intake, disease burden and household food insecurity. These factors compounded with the chronic issues prevalent in the County like insecurity, limited access to quality health services and inappropriate child care and feeding practices, increase the vulnerability of the population, and aggravate malnutrition rates.

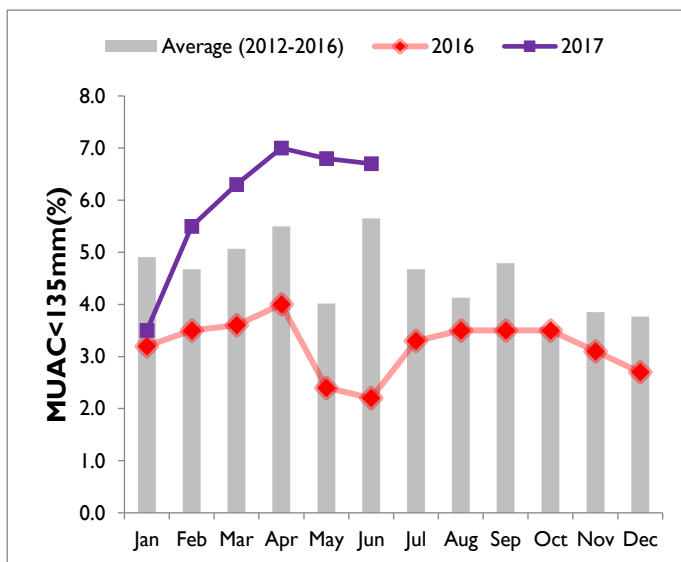


Figure 7: Proportion of Children under-five years with MUAC<135mm

### 3.3.2 Sanitation and Hygiene

According to nutrition SMART survey carried out in June 2017, the proportion of households that practiced hand washing at four critical times was at 1.9 percent, while hand washing by soap



and water was at 49.7 percent. In terms of sanitation, handling of household and human waste is generally poor and is expected to worsen in the water scarce areas. About 72.8 percent of households dispose their human waste at pit latrine, whereas 28.8 percent use bush and open fields. Latrine coverage in June 2017 was 79 percent having increased by 2 percent from 2016. Only 25.9 percent of the household in the survey area reported to be treating water of whom 22.3, 2.8 and 0.6 percent boil, use chemical and herbs, respectively.

### 3.4. Trends of Key Food Security Indicators

The indicators in Table 10 signify a worsening situation in food availability, access, and consumption as compared to the status in February 2017.

**Table 10: Trends of key food security indicator for the county**

Indicator	Short Rains Assessment, Feb 2017	Long Rains Assessment, Jun 2017
<b>Livestock body condition</b>	Good	Poor
<b>Waiting Time</b>	MMF.....20 Min MF.....45Min Pastoral.... 20 Min	MMF.....60 Min MF.....20Min Pastoral.... 180 Min
<b>Water consumption (lpppd)</b>	14	5-12
<b>Price of maize (per kg)</b>	36	61
<b>Price of goat</b>	3500	3076
<b>Terms of trade</b>	97	50
<b>Milk Availability</b>	MMF.....4 Litre MF.....4 Litre Pastoral.... 1 Litre	MMF.....1 Litre MF.....1.5 Litre Pastoral.... Less than 0.5 Litres
<b>Food Consumption Score</b>	Poor.....0% Borderline.....1.3% Acceptable.....98.7% (May 2016)	Poor.....14% Borderline.....26.2% Acceptable.....59.8% (May 2017)
<b>Percent of children U-5yrs with MUAC&lt;135 mm</b>	3.5	6.7

*MMF (marginal mixed farming), MF (mixed farming)*

### 3.5 Education

#### Enrolment

The Primary School Enrolment for Liakipia County is as shown in the table 11 below and it indicates that for all the three levels of education, the number of girls is lower than that of boys. However, there is not a huge disparity between boys and girls at the secondary level compared with other schools within the Agro- pastoral cluster – boys represent 51% and the girls 49% and almost attaining gender parity. The main reason is attributed to availability of 19 boarding schools mainly for girls and 71 day schools allowing many girls to remain safe either in the watch of teachers at the boarding school or in the watch of the parents while attending to day school. The gender representation of boys and girls enrolled at both ECDE and Primary level stands at 48% and 49% respectively. Generally, comparing 2016 to 2017, there was an increase of 1 percent for boys and 2 percent decrease for girls in public primary school enrollment. The slight reduction was attributed mainly to the challenges related to drought where a number of

girls went to help their parents with chores like fetching water and herding animals among other household chores.

**Table 11: School enrollment rate Laikipia County**

	<b>Boys</b>	<b>Girls</b>	<b>Total</b>
<b>ECD</b>	12087	11072	23159
<b>Primary</b>	43993	42157	86150
<b>Secondary</b>	14724	13992	28716

### **Attendance**

Overall, there was a 10% reduction on the attendance rate of learners in 2017 when compared with that of 2016 and across all school levels in Laikipia County. In 2016 attendance was 87% and in 2017 it dropped to 77%. This is attributed mainly to the delay in disbursement of funds under the Home Grown School Feeding Programme (HGSFP) by government. The last allocation for the programme was received in February and was meant to last the schools up until May and the programme only covers about half of the public schools (Mostly in Laikipia West and North), while the rest are not covered. School meals is a major factor determining attendance in this county. Also, the allocated resources could not buy adequate stocks of food since the food prices have increased three times that of 2016.

### **Drop Out and Transition Rates**

The current drop-out rates is at an average of 3 percent for the whole County but Laikipia North and West recorded slightly higher rates at 5.7 percent and 6.5 percent respectively. This was attributed to the high cost of education in boarding schools. Most families that lost their livestock and had low crop yields meant they had nothing to sale so as to raise school fees. Most of the resources were diverted to ameliorating food stress situations resulting from the impact of drought among households. There were requests by communities in these areas to the government for establishment of more day schools to tackle drop out issue. The transition from primary to secondary stands at 65 percent which is 5 percent below the national target of 70 percent. This is mainly due to a considerable gap between the total number of public secondary schools (at 105) and primary schools (at 290) in the County.

### **School Meals Programmes**

Schools in Laikipia West and North of the County benefits from the Home Grown School Meals programme supported by government while many more schools are not reached. Parents have supported the community school feeding programmes in schools not reached, but due to drought impact, the communities' support was weakened.

## **4.0 FOOD SECURITY PROGNOSIS**

### **4.1 Prognosis Assumptions**

Laikipia County food security prognosis for the next six months is based on the following assumptions:

- Terms of trade (ToTs) will likely continue to reduce through October but will improve minimally from November increasing the household purchasing power and food consumption momentarily
- Market prices especially for livestock are likely to go down as the body condition continues to deteriorate
- The forecasted October- November short rains' onset is likely to be timely with good rainfall amounts and better distribution
- Farm inputs including certified seed stock and fertilizers services are likely to be availed and subsidized by the County Government in a timely manner
- Majority of migrated livestock will likely remain in their dry season grazing grounds in October even as forage regenerates continuing conflict and further increasing household milk scarcity and poor dietary diversity at household level

### **4.2 Outlook for 3 and 6 months**

#### **4.2.1 Food security outcomes from August – October 2017**

Over the next three months, pastures in the mixed farming and marginal mixed farming which are already poor are likely to be depleted by early August unless the off- season rains currently being experienced continues. The increasing trekking distances to water sources will further result in decrease in livestock prices as body conditions deteriorate. There is a high likelihood of decreasing terms of trade through to October as livestock prices reduce against rising food prices. Levels of malnutrition are likely to increase. The earlier than normal migration of animals in search of pasture and browse will likely continue and escalate conflicts leading to displacement of population especially along the borders of the livelihood zones as communities in pastoral areas would be tempted to encroach into the farms in mixed farming and marginal mixed farming. The proportion of the population with poor food consumption score and dietary diversity in the next three months is likely to increase and the mean coping strategy score increase as communities employ emergency coping strategies to meet food needs. Households in mixed farming and marginal mixed farming livelihood zones are likely to remain in the Stressed Phase (IPC Phase 2) with pastoral livelihood zone remaining in Crisis Phase (IPC Phase 3).

#### **4.2.2 Food security outcomes from November 2017 – January 2018**

The food security situation is expected to slightly improve if the short rains are timely. With a projected above normal short rains performance, range land conditions will be rejuvenated fully hence livestock production will be above average. From October however, as livestock productivity begins to improve and so will terms of trade. Malnutrition is likely to reduce as a result increased options of accessing food at household level. Livestock are expected to move back to their normal grazing fields, birth rates will be expected to stabilize leading to production of normal to above normal milk amounts resulting to improved production and consumption of milk. There is therefore a high likelihood of households improving from their current phase to better phases across the livelihood zones.

## 5.0 CONCLUSION AND INTERVENTIONS

### 5.1. Conclusion

The mixed farming and marginal mixed farming livelihood zones of the County are classified in Stressed (IPC Phase 2) with a majority of the households having minimally adequate food consumption but unable to afford some essential non-food expenditures. The pastoral all species zone is classified in Crisis Phase (IPC Phase 3) with majority of the households having significant food consumption gaps, high and above usual acute malnutrition and experiencing adverse effects of drought on water and pasture availability. The current livestock poor body condition (cattle are emaciated) and earlier than normal migrations of their livestock has affected the livestock prices and supply thereby reducing the buying capacity hence significantly reducing their income sources resulting to increased food insecurity. A significant proportion of households (24.6 percent) are currently employing emergency coping strategies in the pastoral areas. Key factors to monitor include resource-based conflicts as well as human-wildlife conflicts, the nutritional status of children aged below five years and market prices. Other factors include access to water, livestock diseases, rangeland conditions and household food stocks.

### 5.2. Sub-county Ranking

Sub County	Food rank Security	Main food security threat	Population in need of humanitarian assistance
Laikipia North	1	Depletion of pasture, conflicts, drying of open water sources, Rising TOT, emaciated livestock body condition, less than 0.5 milk availability, livestock mortality 7-10%, reduced TLU's	35-40
Laikipia East	2	Poor rainfall on-set and performance, depletion of pastures, poor crop performance, in-migration of livestock, rising TOT, poor livestock body condition	25-30
Laikipia West	3	Late on-set and poor performance of rainfall, human-wildlife conflict/conflict-cattle rustling, livestock diseases, livestock migration, fall army worm infestation, frost/hail stones	10-15

## 5.2. Ongoing Interventions

### 5.2.1 Non Food Interventions

- General food distribution by the national government in selected areas across the three sub-counties; Laikipia North, West and East.
- School Meals Programme (HGSMP) supported by National Government benefitting public primary school-going children

### 5.2.2 Non-food interventions

Sub County	Intervention	Location	No. of beneficiaries	Implementers	Impacts	Cost	Time Frame
<b>A. AGRICULTURE SECTOR</b>							
All	Distribution of early maturing and drought escaping crop seed	All	3,165	Directorate of Agriculture, (Crops Section)	The seed was distributed in the Long rains season which is experiencing highly depressed rainfall hence low impact on food security alleviation	370,400	March to July 2017
All	De-silting of 13 water pans	All	1300	Directorate of Agriculture (Irrigation Section)	No substantial amount of rain water has been harvested hence low impact	26,000,000	February to June 2017
L. West	52 Shallow wells for irrigation	Githiga Olmoran	260	Directorate of Agriculture (Irrigation Section)	Not much in the meantime	2,100,000	February to June 2017
All	Construction of farm ponds with dam liners and drip kits	All	500 HHs	Directorate of Agriculture (Irrigation section)	Low rainfall experienced in the season hence low impact	9,800,000 (only pond liners supplied) 4,000,000 (drip kits)	February to June 2017
All	Distribution of drought escaping crop seed	All	3,165	Directorate of Agriculture, (Crops Section)	The seed was distributed in the Long rains season which is experiencing highly depressed rainfall hence low impact on food security alleviation	370,400	March to July 2017
<b>B. LIVESTOCK SECTOR</b>							

Laikipia North	Shoats' Up grading		13 Group ranches	Africa Wildlife Foundation(AWF)/LLMA SACCO	Improved food security	2M
”	Livestock water provision/Bee keeping/Market infrastructure		2,500	Laikipia North Stakeholders' Forum(LNSF)/CDTF	”	26M
”	Local poultry promotion (capacity building)		50 HHs	CARITAS, Nyeri	”	60,000
“	Community capacity building in shoats		Sub-county wide	County Government	Improved production & value chain	
Githiga	Rehabilitation of Kinamba water supply	Kinamba	12000	County government/Laikipia		
<b>C. WATER SECTOR</b>						
Githiga	Rehabilitation of Kinamba water supply	Kinamba	12000	County government/Laikipia		
<b>D. HEALTH AND NUTRITION SECTOR</b>						
All three sub counties	Vitamin A Supplementation	In all health facilities	37,121.5	37,419.7	County Health Department	569573.6
All three sub counties	Zinc Supplementation	In all health facilities	20,708	County Health Department	1,863,720	Jan- Dec 2017
All three sub counties	Management of Acute Malnutrition (IMAM)	In 46 health facilities across the county	8,572.3	County Health Department	15,865.971	Jan- Dec 2017
All three sub counties	IYCN Interventions (EBF and Timely Intro of complementary Foods)	In the three sub counties across the county	19.803	County Health Department		Jan- Dec 2017

All three sub counties	Iron Folate Supplementati on among Pregnant Women	In the three sub counties across the county	19.803	County Health Department	13,367,,025	Jan- Dec 2017
All three sub counties	Deworming	In the three sub counties across the county	8,572.3	County Health Department	795,110,4	Jan- Dec 2017
All three sub counties	Provision of Micronutrient powders ( MNPs)	In the three sub counties across the county	37,121.5	37,419.7	County Health Department	3,966,493
<b>OTHER PUBLIC HEALTH INTERVENTIONS</b>						
All three sub counties	Health and Nutrition Education at all health facilities and community	In the three sub counties across the county	98 health facilities	County Health Department	Non	Jan- Dec. 2017
Laikipia North Sub County	Increase Toilet Coverage (CLTS)	3 Wards of Laikipia North Sub County	6 Locations	County Health Department	150,000	Jan – Dec. 2017
<b>E. EDUCATION SECTOR</b>						
Laikipia county	Homegrown school meals programme	Laikipia north, east , central , west and Nyahururu	45897	MOE	High attendance rates, high transition, reduced drop out and high transtionrat es.	27,538,200
Laikipia central, Laikipia north	Provision of plastic tanks	Tigithi, Segera, solio, Mukogodo west	5 schools ( 1000 students)	NDMA	Provision of water for cooking, drinking. Reduced time for looking for water.	2,500,000
Laikipia county	Drought mitigation funds	32 schools across the county	1280	MOE	High attendance of students,	6,400,000

					reduced dropout rates	
Laikipia North	Water tankering	Mukogodo east and west	6881	County government of Laikipia	Provision of water for cooking, drinking, reduced time for looking for water	
Laikipia central and Laikipia north	Relief food	Laikipia North and Laikipia central	Laikipia central pry – 13306			

### 5.3 Recommended Interventions

#### Immediate interventions

<b>A. AGRICULTURE SECTOR</b>							
<b>Sub County</b>	<b>Ward</b>	<b>Intervention</b>	<b>No. of beneficiaries</b>	<b>Proposed Implementers</b>	<b>Required Resources</b>	<b>Available Resources</b>	<b>Time Frame</b>
All	All	Identification of the vulnerable persons in need of food aid		Special programmes Interior, CFSSG	Cash, Personnel	Vehicles, Personnel	Immediate (July 2017)
All	All	Procurement and Distribution of food aid		Special Programme, Interior, CFSSG	Cash, Personnel, Vehicles	Vehicles, Personnel	July 2017
All	All	Up-scaling adoption of climate smart production technologies such as CA	1000 farmers doing 4285 hectares of maize	DALF FAO	Cash Technical staff	Technical staff	July 2017 to June 2018
All	All	Intensify climate resilience building initiatives such as farm forestry	100000	DALF KFS, LWF	Cash Technical staff	Technical staff	3 years



All	All	Farmer compensation on crop losses due to drought	3000	NDMA	Cash		October 2017
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### Medium term/Long Term interventions

Sub County	Ward	Intervention	No. of beneficiaries	Proposed Implementers	Required Resources	Available Resources	Time Frame
All	All	Construction of stores for strategic grain reserves	100,000	State Department of Agriculture & CGL	Financial and Technical		2 to 10 years
All	All	Establishment of government supported supplies shops in the pastoral areas	100,000	Special programmes, Interior	Financial		2 to 5 years
All	All	Identification of suitable sites and construction of mega dams and water pans to irrigate 10,000 hectares	460,000 (irrigated maize crop targeted to produce 700,000 bags of maize in two seasons)	SDA DALF	Financial		1 year

### B. LIVESTOCK SECTOR

County	Intervention	Sub County	No. of beneficiaries		Proposed Implementers	Required Resources	Available Resources	Time Frame
			H/Hs	Animals				
<b>Laikipia</b>	(1) Provision of supplementary feeds:- (a) Concentrates:- (i) Range cubes / Pellets	Laikipia North, West and East	4,000	17,000	County Govt. (Dept. of Livestock); NDMA / Partners	41 M	Human resource	July - Oct. 2017
	(ii) Mineral supplements (UMMB blocks)	Laikipia North, West and East	4,000	17,000	County Govt. (Dept. of Livestock); NDMA /	17 M	Human resource	July - Oct. 2017

					Partners			
	(b) Provision of Hay & molasses	Laikipia North, West and East	5,000	20,000	County Govt. (Dept. of Livestock); NDMA / Partners	30 M	Human resource	July - Oct. 2017
	(2) (a) Slaughter off-take of Shoats (especially in the PZ and some MMF areas).	Laikipia North and West	4,500	9,000	County Govt. (Dept. of Livestock); NDMA / Partners	20 M	Human resource	July - Oct. 2017
	(b) Slaughter off-take of cattle (especially in the PZ and some MMF areas).	Laikipia North and West	2,600	2,600	County Govt. (Dept. of Livestock); NDMA / Partners	15 M	Human resource	July - Oct. 2017
	(3) (a) Strategic de-worming of Shoats	Laikipia North, West and East	4,200	150,000	County Govt. (Dept. of Livestock); NDMA / Partners	4 M	Human resource	July - Oct. 2017
	(b) De-worming of cattle (core stock).	Laikipia North, West and East	1,900	8,000	County Govt. (Dept. of Livestock); NDMA / Partners	1 M	Human resource	July - Oct. 2017
	(4) Vaccination against FMD.	Laikipia North, West and East	5,300	40,000	County Govt. (Dept. of Livestock); NDMA / Partners	6.8 M	Human resource	July - Oct. 2017
	(5) Vaccination against Rabies.	Laikipia North, West and East	2,700	3,700	County Govt. (Dept. of Livestock); NDMA / Partners	1.2 M	Human resource	July - Oct. 2017

	(6) Tick control by use of pour-on acaricide.	Laikipia North, West and East	4,000	32,000	County Govt. (Dept. of Livestock); NDMA / Partners	1.8 M	Human resource	July - Oct. 2017
	(6) Strategic treatment of animals by use of Tetracycline antibiotics	Laikipia North, West and East	5,300	66,000 shoats & 20,000 cattle.	County Govt. (Dept. of Livestock); NDMA / Partners	1.4 M	Human resource	July - Oct. 2017
	(6) Strategic provision of animal multivits.	Laikipia North, West and East	5,300	66,000 shoats & 20,000 cattle.	County Govt. (Dept. of Livestock); NDMA / Partners	1.6 M	Human resource	July - Oct. 2017

### C. WATER INTERVENTIONS

#### Immediate recommended Interventions

Sub County/ Ward	Intervention	Location	No. of beneficiari es	Proposed Implement ers	Require d Resourc es	Availabl e Resourc es	Time Fra me
Githiga	Desilt dams Service boreholes, Provide fuel subsidy, Chlorination of shallow wells	Kinamba Ndindika Mwenje Mithiga	1500 3500 2400 1800	NDMA/cou nty Govt/GOK	funding after survey and designin g	Technic al personne l	
Marmanet	Desilt dams Service boreholes Provide fuel subsidy Chlorination of shallow wells	Thigio Gituamba Karaba Melwa	1200 1000 2700 3500	NDMA/cou nty Govt/GOK	funding after survey and designin g	Technic al personne l	
Igwamiti	Pipeline extension Servicing of hand pumps Chlorination of shallow wells	Igwamiti  Mahianyu	3500	NDMA/cou nty Govt/GOK	funding after survey and designin g	Technic al personne l	

#### Medium and Long Term recommended Interventions

Githiga	Construct large dams Drill boreholes Develop springs	Kinamba Ndindika Mwenje Mithiga	8000	NDMA/cou nty Govt/GOK	Human Funds	Human (technical )
Marmanet	Construct large capacity dams Rehabilitate existing dams Drill boreholes Develop springs Improve roof catchments' and storages	Thigio Gituamba Karaba Melwa	5000	NDMA/cou nty govt/GOK	Human Funds	Human (technical )
Igwamiti	Pipeline extensions Drill boreholes Develop springs Rehabilitate dams Improve roof atchments' and storages	Igwamiti Mahianyu	15000	NDMA/cou nty govt/GOK	Human Funds	Human (technical )

#### **D. HEALTH AND NUTRITION**

<b>Sub County /Ward</b>	<b>Intervention</b>	<b>Location</b>	<b>No. of beneficiaries</b>	<b>Proposed Implementers</b>	<b>Required Resources</b>	<b>Available Resources</b>	<b>Time Frame</b>
All three sub counties	Provision of Water treatment Chemicals	In the three sub counties across the county	9000 Households	Health Department @ County level	<b>270,000</b>	None	Jan – Dec.2017

#### **Medium and Long term Recommended Interventions**

<b>Sub County /Ward</b>	<b>Intervention</b>	<b>Location</b>	<b>No. of beneficiaries</b>	<b>Proposed Implementers</b>	<b>Required Resources</b>	<b>Available Resources</b>	<b>Time Frame</b>
All three sub counties	Carry out integrated outreaches	across the county	22,5000 children and PLW	Health Department @ County level	<b>1,200,000</b>	None	Jan – Dec.2017
All three sub counties	Mass Screening	across the county	21,547 and PLW children	Health Department @ County level	<b>1,130,006</b>	None	Jan – Dec.2017