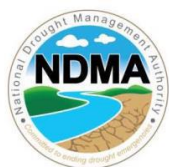


# National Drought Management Authority

LAMU COUNTY

## DROUGHT EARLYWARNING BULLETING FOR JULY 2018



A Vision 2030 Flagship Project



### July 2018: EW PHASE

Drought Status: **NORMAL**



Shughuli za kawaida

#### Drought Situation & EW Phase Classification

##### Biophysical Indicators

- The County received off season precipitation during the Month.
- The vegetation condition Index (VCI-3Month) was showing an increase of 8 percent compared to previous month.
- The VCI indicated vegetation greenness above normal. The overall drought phase in the county was at Normal in July.
- Forage condition was good across all livelihoods zones during the month.

##### Socio Economic Indicators

##### Production indicators

- All livestock species exhibited good body condition and on improving trend.
- Maize crop is in different stages of growth from flowering, grain filling and harvesting stages.
- Milk production increased by 44 percent compared to previous month of June due to in- migration of livestock.

##### Access indicators

- Terms of trade were favorable to goat sellers in mixed farming livelihood zones.
- Water access for both human and livestock was good and improving in all the livelihood zones.
- Milk consumption slightly increased and higher than the long term Average.

##### Utilization indicators

- The proportion of children at risk of malnutrition cases decreased slightly and below the normal range as indicated by percent of mid upper arm Circumference (MUAC).
- The average coping strategy increased compared to previous month.

#### Early Warning (EW) Phase Classification

Livelihood Zone	Phase	Trend
Agro pastoral/Fishing	Normal	Stable
Mixed farming/Irrigated cropping	Normal	Stable
Fisheries /Mangroves	Normal	Stable
Farming/Casual Labour	Normal	Stable
Agro pastoral	Normal	Stable
County	Normal	Stable
Biophysical Indicators	Value	Normal Range/Value
Rainfall (% of Normal)	< 46	80 -120
SPI-3Month(TAMSAT)	0.45	-0.1 to 1.0
VCI-3Month	77.85	<50
Forage condition	Good	Good
Production indicators	Value	Normal
Crop Condition(specify crop)Maize	Good	Good
Livestock Body Condition	Good	Good
Milk Production	3.3	>12.75 Litres
Livestock Migration Pattern	Normal	Normal
Livestock deaths (from drought)	No death	No death
Access Indicators	Value	Normal
Terms of Trade (ToT)	134.2	84
Milk Consumption	1.5	36 litres
Return distance to water sources	2.4	<5 Km
Cost of water at source (20 litres)	3-10	<5Kshs
Utilization indicators	Value	Normal
Nutrition Status, MUAC (% at risk of malnutrition)	5.2%	<6.6%
Coping Strategy Index (CSI)	8.82	<0.95

#### Seasonal Calendar

<ul style="list-style-type: none"> <li>▪ Short rains harvests</li> <li>▪ Short dry spell</li> <li>▪ Reduced milk yields</li> <li>▪ Increased HH Food Stocks</li> <li>▪ Land preparation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Planting/Weeding</li> <li>▪ Long rains</li> <li>▪ High Calving Rate</li> <li>▪ Milk Yields Increase</li> </ul>	<ul style="list-style-type: none"> <li>▪ Long rains harvests</li> <li>▪ A long dry spell</li> <li>▪ Land preparation</li> <li>▪ Increased HH Food Stocks</li> <li>▪ Kidding (Sept)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Short rains</li> <li>▪ Planting/weeding</li> </ul>								
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec

## 1.0 CLIMATIC CONDITIONS

### 1.1 Rainfall performance

Rainfall continued being received across the county during the month under review, with less intensity compared to the previous month as recorded in the first to third dekad of June as in figure 1 below. The ongoing off showers season is expected to decline the next month. The current NDVI values is above the historical NDVI values, thus improving with the precipitation during the off season rainfall.

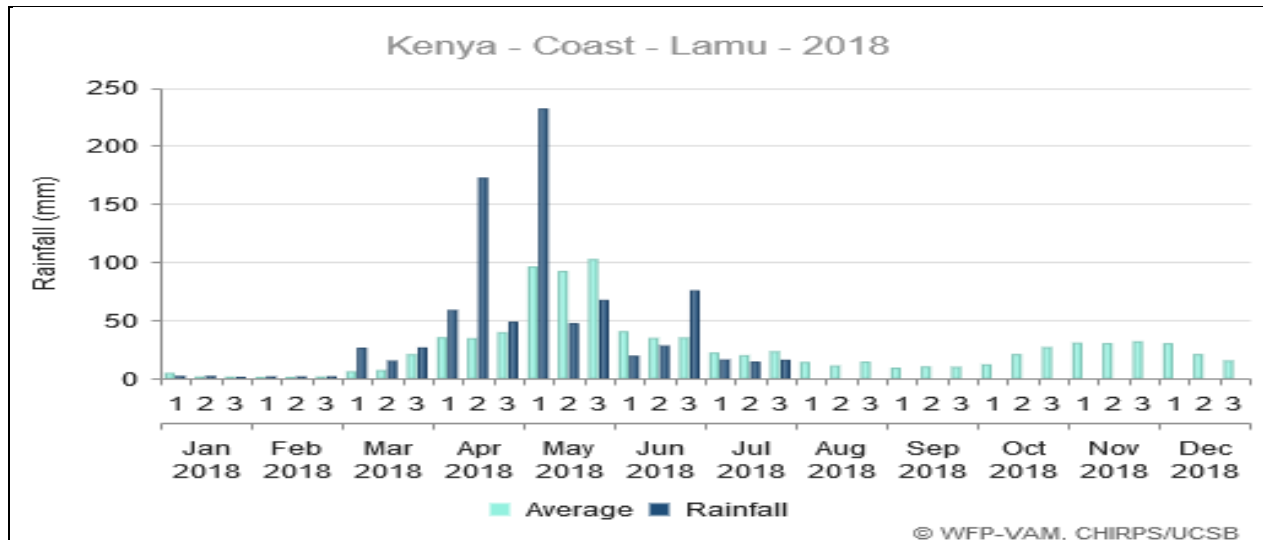


Figure 1: Rainfall Satellite data. (Source: WFP-VAM,CHIRPS/UCSB)

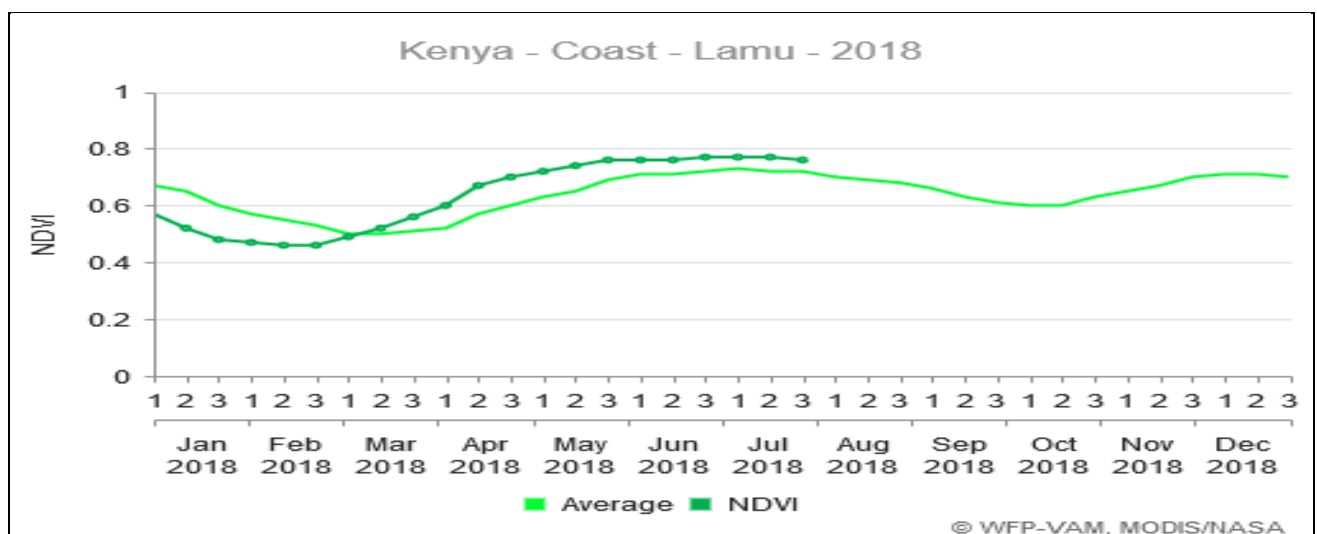


Figure 2: NDVI data. (Source: wfp-Vam)

### 1.2 Amount of rainfall and spatial distribution

- According to VAM WFP rainfall data, the County received a total of 44.5 mm of rainfall in the Month of July.
- This was a decrease of 60 percent compared to previous month and 30percent below the normal rainfall as in figure 1 above.
- This 44.5mm of rainfall was higher than the amount of 33.9 mm received in same period of the previous year.
- The performance of the rains was erratic and below normal.
- The off season showers received was poor both in spatial and temporal distribution in all parts of the livelihood zones of the county.

### 1.3 Flooding or any other hazards.

- No floods and hard report during the month under review.

## 2.0 VEGETATION CONDITION

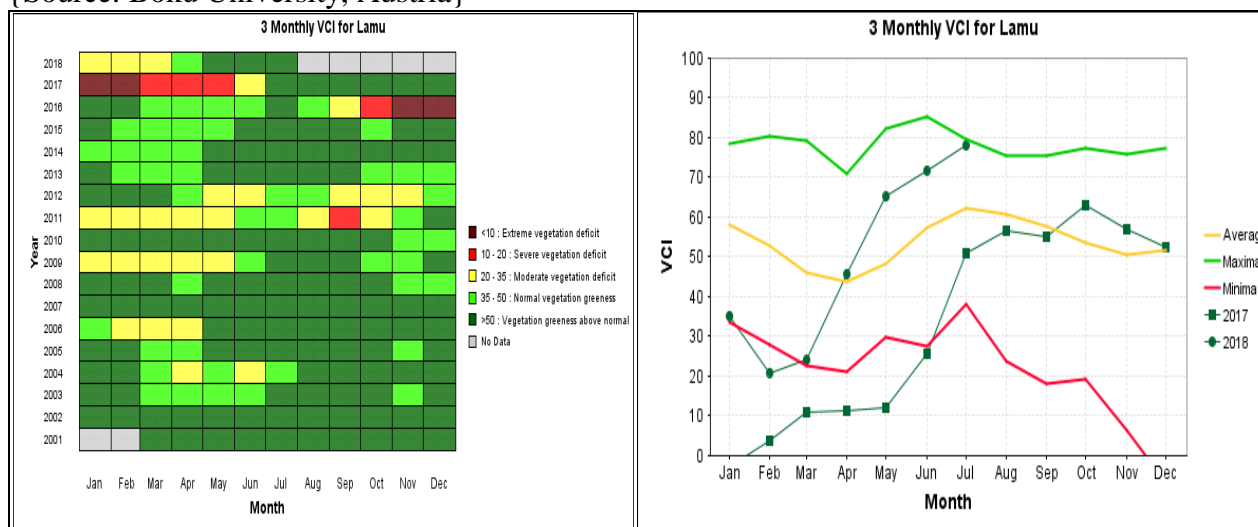
### 2.1 Vegetation Condition Index (VCI)

- The vegetation condition index for the month of July increased by 8 percent compared to the previous month. This was due to the rainfall received during the Month.
- The vegetation condition index for the month of July was 77.85 compared to 71.53 in the previous month.
- The VCI indicated vegetation greenness above normal in the County.
- The VCI-3Months is above the long-term average and the previous month as shown in the figures 3, 4 and table 1 below.

**Table 1: July 2018 VCI (3M)**

ADMINISTRATIVE UNITS		Vegetation greenness	
County	Sub-County	VCI-3Month as at 26 <sup>th</sup> June 2018	VCI-3Month as at 30 <sup>th</sup> July 2018
LAMU	County	71.53	77.85
	Lamu East	73.66	73.75
	Lamu West	70.3	80.23

Figures below show three Months Vegetation Condition Index (VCI) matrixes for Lamu County {Source: Boku University, Austria}



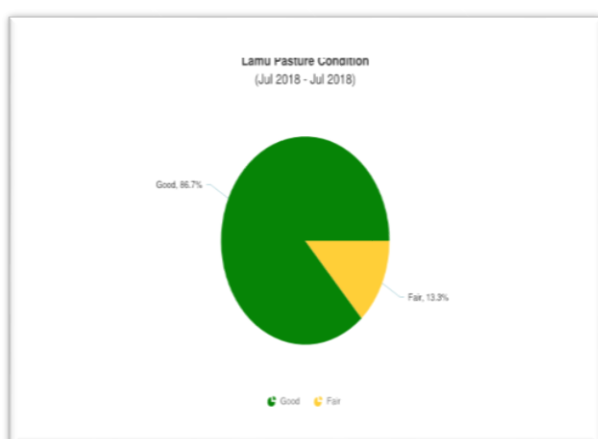
**Figure 3: Vegetation Condition index (VCI)**

**Figure 4: VCI-Lamu County**

## OBSERVATIONS

### Pasture and Browse Conditions

#### 2.1.2 Pasture



**Figure 5: Pasture condition**

Pasture condition was good across all livelihood zones both in quality and quantity. 95 percent of Community members interviewed stated that pasture was very good while 5 percent indicated that pasture was good but with improving trend as in figure 5. Pasture condition by livelihood zones; Agro pastoral is good, mixed farming is good and fishing/ mangrove was good as well. The available pasture is expected to last not more than three months due to the presence of in-migrant livestock from neighbouring counties. The current pasture situation is within the normal range .

### 2.1.3 Browse

The quantity and quality of browse was good across all livelihood zones in the County. Community members interviewed indicated; 90percent of the respondents stated that browse was very good while 10percent stated it was good but on improving trend due to off seasons rains and low rate of transpiration as in figure 6. Browse condition by livelihood zones; Agro pastoral and fishing mangrove was very good while mixed farming was good. The available browse quantity is above normal compared to normal year. The browse is expected to last for more than four months. The current browse situation is above the normal range .

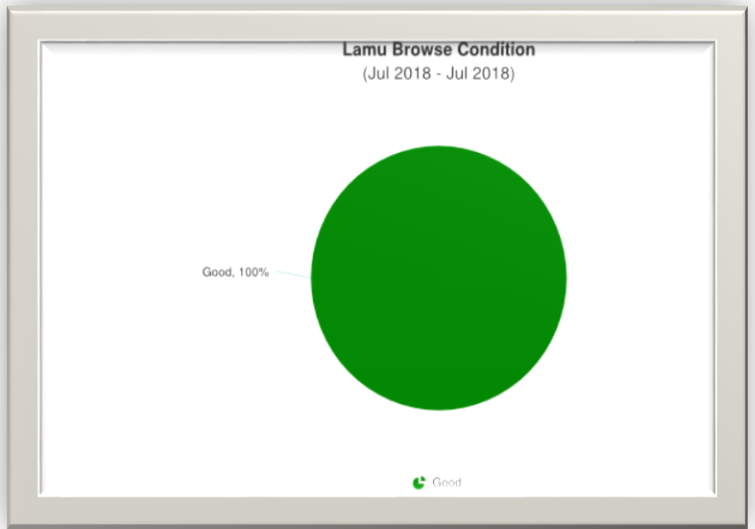


Figure 6: Browse condition

## 2.2.0 HYDROLOGICAL DROUGHT

### 2.2.1 Water Sources and Availability

The state and condition of water sources in the County was good across most livelihood zones except for Bahari ward where the rains performed poorly. However, the current water situation remained the same compared to previous month. The main water sources in the month of July:-Pans and dams-26.7percent, shallow wells-36.7percent, Boreholes 6.7percent, Traditional water wells-6.7percent, piped water system-6.7 and Rivers-16.7percent respectively as in figure 7 below. The status of main sources of water is above normal at this time of the year.

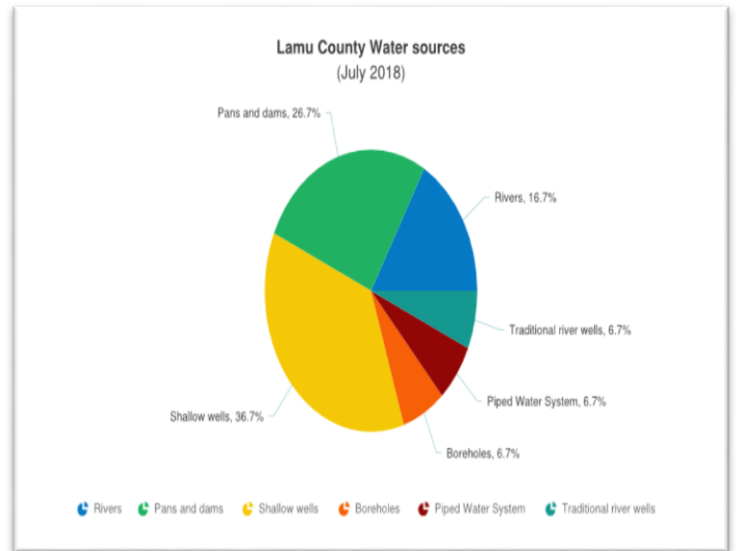


Figure 7: Main source of water

### 2.2.2 Household access and Utilization

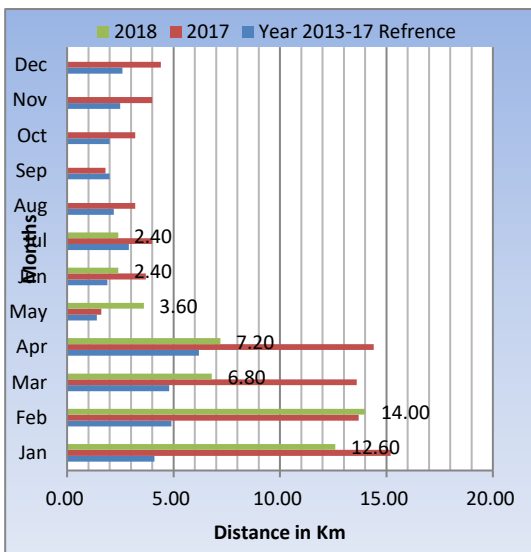


Figure 8: Household water distances

Average Household watering return distance was 2.4Km in July, remained stable compared to previous month. This was due to significant rainfall amount received which led to increased in water levels. Household return water distances per livelihood zone were as follows: the Agro pastoral -2.5Km, Fishing & Mangrove Harvesting 1.2Km and for Mixed Farming Zone it was 1.5Km and irrigated farming 1.2Km respectively. The 2013-2017 average household water distances for July was 2.90 Kilometres which was higher than the current average household watering distance for July as in figure 8. The average household water consumption per person per day is at 15-20 litres in all livelihood zones. Water costs at source are 3-5Kshs in town/village centres for 20 litre Jerrican.

### 2.2.3 Livestock access to Water

Livestock average distance to water source from grazing Area increased by 29percent compared to the previous month as in figure 9.

Grazing return water distances per livelihood zone were as follows: the Agro pastoral -3.9Km, Fishing & Mangrove Harvesting 1.5Km and for Mixed Farming Zone it was 1.8Km and irrigated farming 2.6Km respectively. The increase of grazing water distance compared to last month was due to flooding of grazing areas. Watering frequencies for livestock species was same. Most of the livestock species were watered daily due to high recharge levels of the open water sources. The current average grazing distance for July was 4.4Kilometers higher than the long-term average of 2.90 Kilometres.

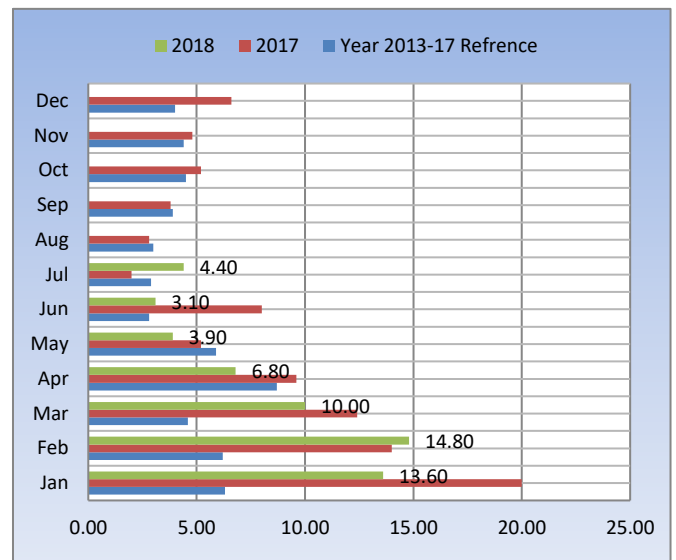


Figure 9: Grazing distance-Km

### 2.2.4 Household Income

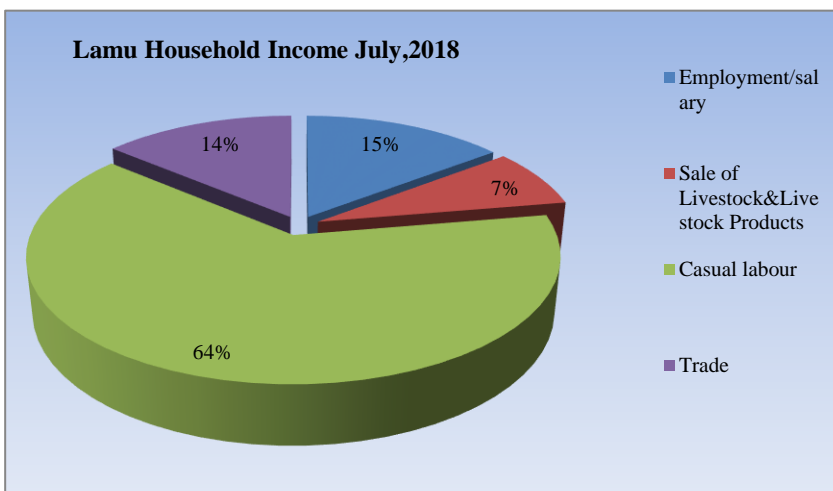


Figure 10: Household sources of income

The main household income for the month of July was as follows: Casual labour 64percent, Employment 15percent, trade 14percent sale of Livestock/Livestock products 7percent respectively as in figure10 below. However, casual labour and employment increased by one percent each compared to the previous month.

## 2.4 Implication to Food Security;

- The off season rainfall recorded during the month of July improved recharging of open water sources leading to reduced distance access to water for both livestock and domestic uses in Agro pastoral and Mixed farming zone.
- Fishing and Mangrove zones livelihood zones which were previously affected by salinity of water can access low salinity due recharge of the shallow wells in the Islands.
- The distances to water sources have had a positive impact on the body condition of animals and household hygiene standards.

### 3.0 PRODUCTION INDICATORS

#### 3.1.0 Livestock Production

##### 3.1.1 Livestock Migration Patterns

There was in- migration of livestock from Ijara to mixed farming of Bargoni area.

The livestock belonging to the residents of Lamu that migrated in the month of April to Tana River have migrated back to Agro pastoral areas of Didewaride and Chalaluma of Witu ward.

##### 3.1.2 Livestock Body Condition

The livestock body condition was good for cattle and goats in both the Mixed farming and Agro Pastoral and was fair in fishing/Mangrove livelihood zones. This is attributed to increased quality and quantity of pasture and browse due to ongoing rainfall.

In comparison to similar periods during previous years, the body condition of all species was good and this is attributed to improving forage condition in all the livelihood zones. However, due to ongoing long rains, the body conditions are expected to improve further.

##### 3.1.3 Livestock Diseases

There were no incidences of Livestock diseases reported during these Months.

##### 3.1.4 Milk Production

Milk production increased from 2.3litres in June to 3.3litres in July, 2018. This was higher than the long-term average of 1.0 litre in July as in figure 11 below. Milk productions were distributed as follows: Mixed farming Produced 1.6litres, Fishing 1.5litres, and Irrigated 1.0litres while the Agro pastoral Zone produced average of 1.5litres. Milk prices are retailing at an average price of Kshs.40-60 per Litre across the livelihood zones which is the normal milk price at these period of the year. The change of the household milk production recorded is due to animals returning back to their homestead.

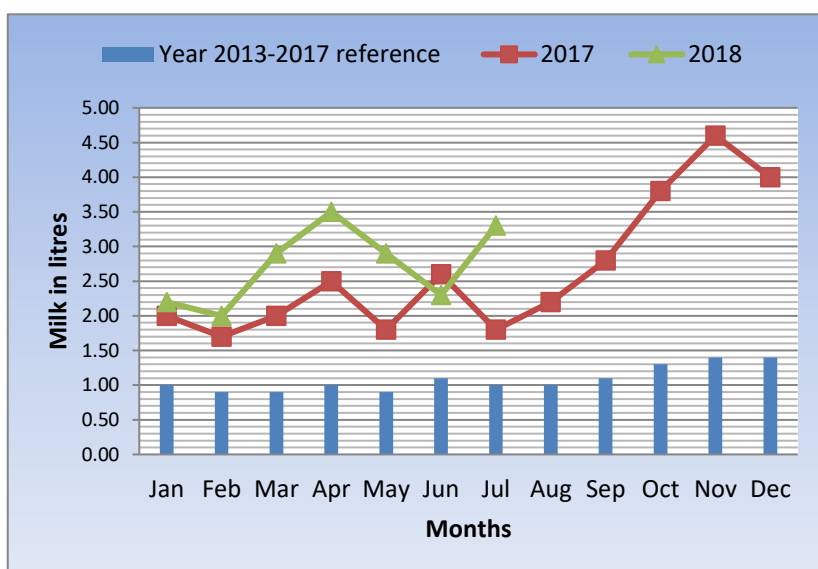


Figure 11: Milk production

### 3.2 Rain fed crop production

#### 3.2.1 Stage and condition of food crop

The main crops grown are Maize, Cowpeas, Green grams and Simsim in the County. Weeding is the main activity in the farms during the month under review. Farm crops are at flowering, grain filing and harvesting stages in all livelihood zones. The general crops situation is fair to good as observed in most parts of the county.

#### 3.2.2. Crop Harvest

Weeding and Harvesting were activities ongoing currently. Harvesting of maize ,green maize, green grams and cowpeas is ongoing in all the livelihood zones except parts of Bahari ward where rainfall performance was poor. The harvest is below normal due pest infestation, under growth, poor corn output of the maize plants.

#### 3.2.3 Implications on Food Security;

The good body condition of livestock species especially goats across the livelihood zones increased the prices resulting to improved income for livestock farmers.

## 4.0 MARKET PERFORMANCE

### 4.1 Livestock marketing

#### 4.1.1 Cattle Prices

Average cattle market price in the month of July decreased by 8percent compared to previous month as in figure 12 below. This decrease in price could be attributed to low demand and high

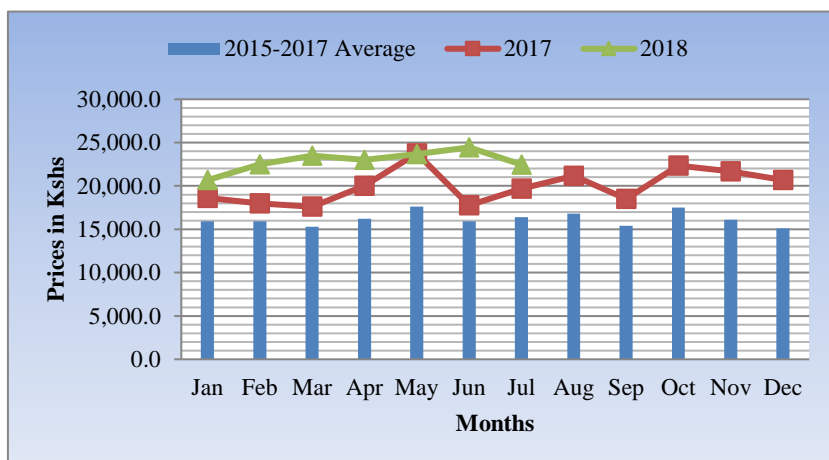


Figure 12:Cattle prices

supplies in the markets owing to long rains experienced during this month. The cattle average market prices were distributed as follows: Faza Kshs 30,000, Witu Kshs 16,000, Kiunga Kshs 29,700 and Mokowe Kshs 22,000. The average market cattle price for the month of July was, however higher than the long-term average price of Kshs.16, 400.

#### 4.1.2 Small Ruminants Prices

#### 4.1.3 Goat Prices

Goat prices increased by three percent in July compared to previous month of June. This price was

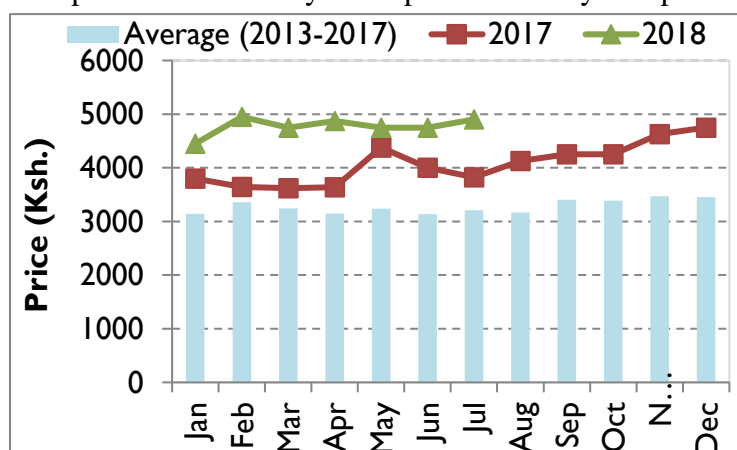


Figure 13:Goat prices

higher than the long term average by 53percent and the price recorded in previous year at a similar time and following seasonal trends as shown in figure13 below. This increase in price of goats could be attributed to the coming Eid festival of local community. The goat average market prices were distributed as follows: Mpeketoni Kshs 3,000, Witu Kshs 4,000 Kiunga Kshs 5,700 and Mokowe Kshs 5,000.

## 4.2 Crop prices

### 4.2.1 Maize price

In July Maize prices dropped from kshs 44 to 37 with a reduction of 16percent, this was lower than the long term average of kshs 43 during the previous month due to high supply in markets as long rains harvest shown in figure 14 below. The prices were distributed as follows: Hindi centre Kshs 50, Patte Kshs 50, Witu Kshs 33, Mpeketoni Kshs 25 and Kiunga Kshs 50 respectively. However, price ranges is determined by commodity supply in the different markets. The average price of maize in July was lower when compared with the long term-average price of Kshs 47.

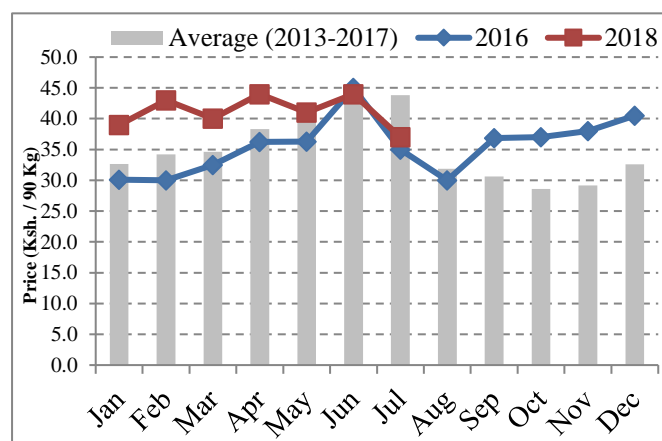


Figure 14:Maize prices

### 4.2.2 Beans

Average price of Kg of beans was Kshs 109 in July, an increase compared to the previous month as in the figure 15 below. The increased price was attributed to low production due to flooding.

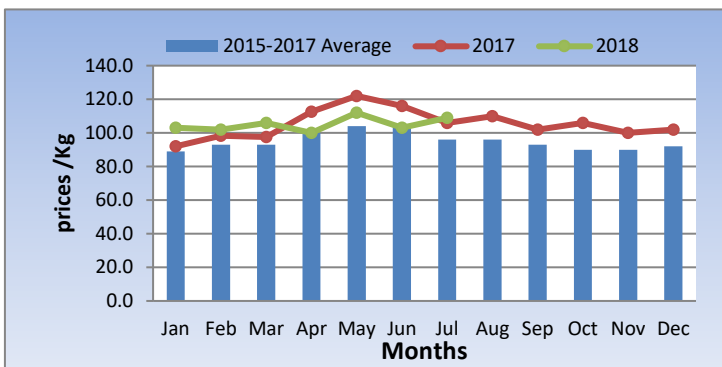


Figure 15: Beans prices

The beans price was distributed as follows: Mswakini /Hindi centre Kshs 140, Patte Kshs100 and Witu Kshs 100, Mpeketoni Kshs 80 and Kiunga Kshs 120. However, price ranges is determined by commodity supply in the different markets. The long-term average price of beans was Kshs 96 which is lower compared to the current beans price for the month of July.

### 4.3 Livestock Price ratio/Terms of Trade

The terms of trade (TOT) increased by 19percent compared to previous month of June. This was higher than the long term average by 83percent and 47 percent that was recorded at a similar period last year as in figure 16 below. Sale of a medium goat in July would cost a household about 134kg of maize. This showed the exchange ratio increased in favour of goat sellers to crop farmers. However, this was determined by supply in the different markets. The ToT was 148.8Kg in Lamu West and 113.3Kg in Lamu East. The ToT for July was higher than the long term average of 78Kg.

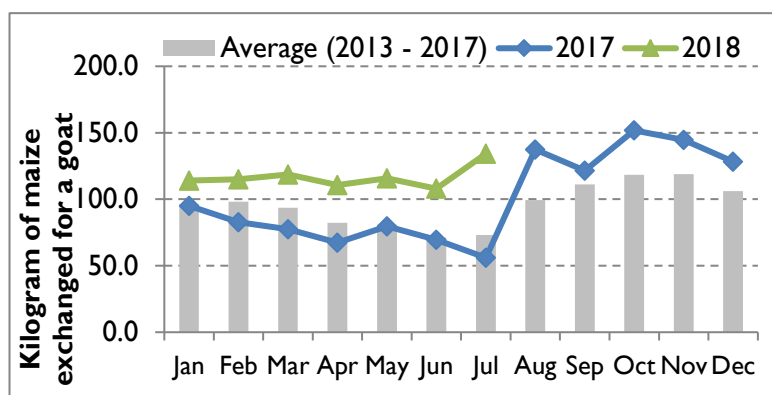


Figure 2: Terms of Trade

### 4.4 Implication on food security;

- The good body condition of livestock have increased livestock prices especially for goats and stable for cattle, therefore livestock farmers are able to get better value for their livestock contributing to food security in Mixed and Agro pastoral zones.
- Maize prices decreased due to long rains harvest demand and low supply in the markets.
- Farmers are able to sell livestock (especially goat and cattle) at fair prices, hence improves food security at household level.
- The Terms of Trade was favorable to pastoral compared to crop farmers.



## 5.0 FOOD CONSUMPTION AND NUTRITION STATUS

### 5.1 Milk for Household Consumption

Milk Consumption was 1.5litres in the month of July, which was slight increase compared to 1.4 litres during the previous month as in figure 17 below. Increased in milk consumption level is as a result of improved production of the commodity. July long term average milk consumption o was 53percent lower than the current average of milk consumption.

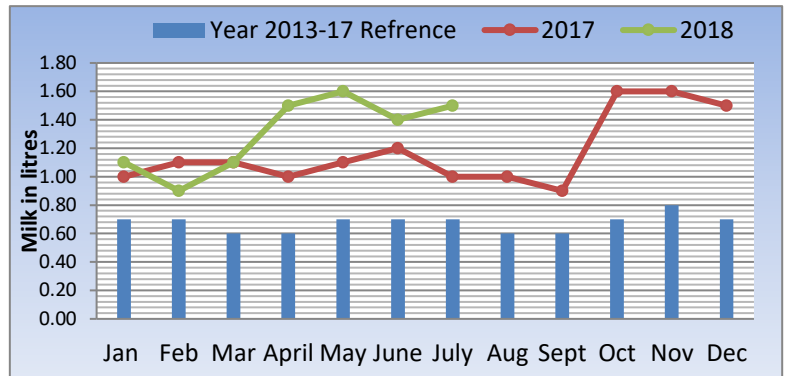


Figure 17: Milk consumption

### 5.2 Health and Nutrition status

#### 5.2.1 MUAC

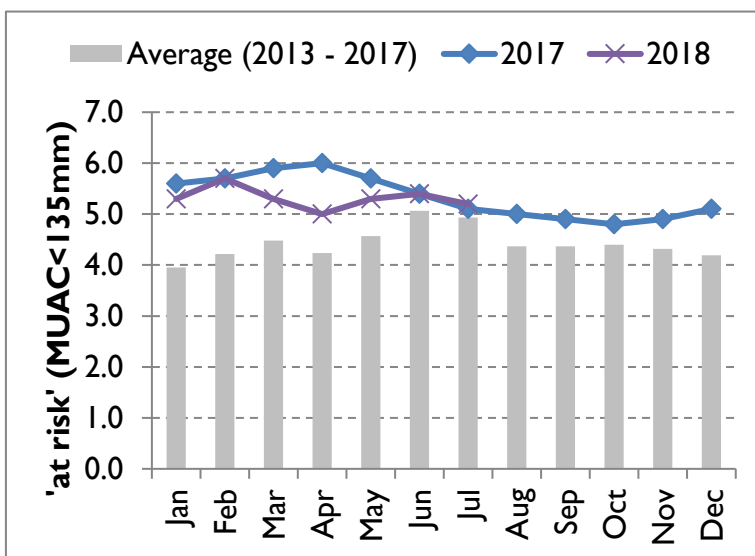


Figure 18: MUAC

The proportion of children under five at risk of malnutrition with Mid Upper Arm Circumference below 135mm decreased to 5.2 percent compared to previous month of June. This decrease was attributed to increased milk production and consumption at household level. The rates of Malnutrition cases are increasing in the Agro pastoral and Mixed farming Zones of Witu, Hindi wards. This figure of 5.2 percent MUAC for July was an increase compared to long term average of 4.9 percent as in figure 18 below.

#### 5.2.2 Health

There were no cases of major disease outbreak both for children and general population in the County.

### 5.3 Food consumption score

Acceptable food consumption was noted in Agro pastoral and fishing /Mangrove zone with 93.3 and 100 percent of households respectively, owing to availability of food in the markets, however households have low purchasing power. Household percentage with poor food consumption increased from zero to 1.7percent at mixed farming livelihood zones.

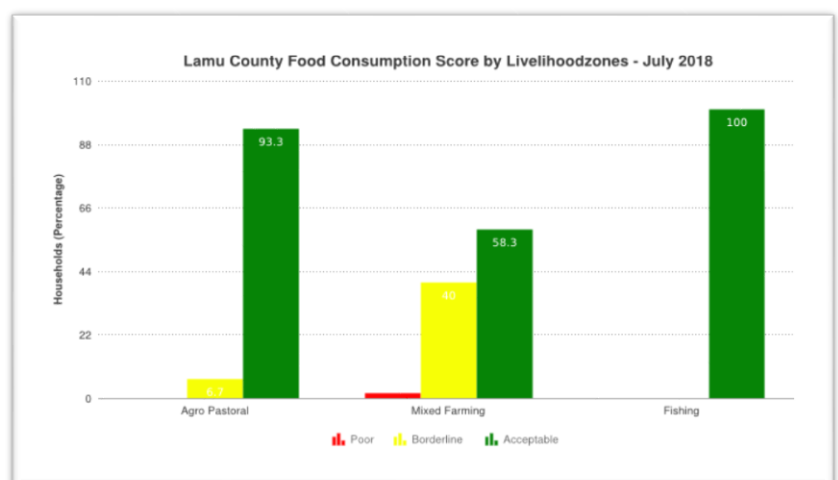


Figure 19: Food consumption score

### 5.4 Coping strategy index

The mean coping strategy Index in the Month of July increased by 8percent(8.82) compared previous month (8.13) in June, indicating decreased coping strategies at household level. Agro pastoral Zone had CSI of 9.6; Mixed Farming livelihood zone had 9.6 while Fishing Livelihood zone had a copying strategy index of 5.8 as figure 20 below. Common coping strategies employed by food insecure households in the month of July were; Reduction in the number of meals, Purchase on credit/remittances from relatives, Borrow food from friends or relatives, and Opting for less preferred or less expensive food.

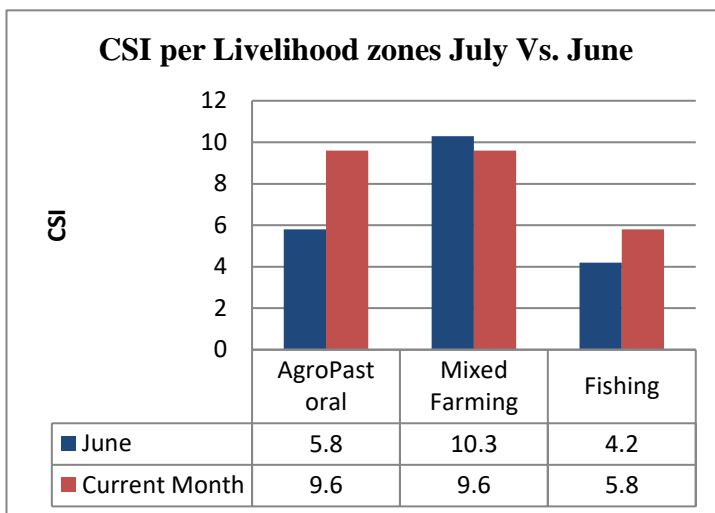


Figure 20:Coping strategy index

### 5.5 Implication on Food Security

- High milk consumption at household levels across all the Livelihood zones could lead to increased dietary diversification and thereafter a positive impact on food insecurity.

## **6.0 CURRENT INTERVENTION MEASURES (ACTION)**

### **6.1 Food and Non-food interventions**

#### **6.2 Drought Response Interventions**

- Cash transfer by the Social protection department to 3000 households for older persons, Orphans and people with severe disabilities respectively for the entire county.
- The cash transfer will improve the purchasing power of the households to access food of their preferences.
- RPLRP carried out restocking of breeding goats in affected areas during the previous drought in the County.160 households have benefited from the project in both sub-Counties.

## **7.0 EMERGING ISSUES**

### **7.1 Insecurity**

- Suspected Al-Shabaab attack has left one police officer dead and two others injured in Milihoi, along Hindi- Mpeketoni road in Lamu County.
- The insurgents plotted an ambush on the officers and fired an explosive damaging their vehicle and claiming one life. The assault another personal vehicle was also burned down.

### **7.2 Migration**

- There were no abnormal cases of human migration during the month.

### **7.3 Food security prognosis**

- Households expected to continue employing consumption related coping strategies.
- Markets will continue to operate normally despite poor infrastructure and insecurity.
- The improving livestock body condition expected to improve the purchasing power of farmers to access commodities in the markets hence improve food insecurity at household level.
- Cereal prices are expected to decrease while that of goat projected to increase, thus terms of trade expected to improve for livestock farmers.
- Nutrition status will improve in the coming months due improved milk production and consumption.
- Forage conditions projected continue improving and hence stabilize livestock body conditions, production and prices in coming months. Main Food commodities prices are expected to decrease.
- The July 3-Month Vegetation Condition Index indicating above normal greenness for the entire County and hence expected to improve further.
- Most of the open water sources are fully recharged, thus both household and livestock trekking distances will reduce.

## **8.0 RECOMMENDATIONS BY SECTORS;**

### **8.1 Water**

- Constructions/rehabilitation of water pans for preparedness.
- Conducting of hydro geological survey and drilling of boreholes.
- Promotion of rain water harvesting, repair of Djabias, roof catchment areas, installation of gutters and tanks in Villages and Institutions.

### **8.2 Livestock**

- Accelerate completion of Nagele Livestock market for Linkage to other Livestock markets.
- Livestock disease surveillance, Vaccinations and control to curb spread of livestock diseases.
- Upscale efforts aimed at stock piling livestock feeds in strategic hay reserves for use during the dry season by providing farmer groups with pasture seeds so as to maximize production over the long rains season.
- Promote Pasture and fodder planting in the county during and after the long rains.
- Provision of hay band machines for harvesting.
- Promote livestock insurance services.

### **8.3 Agriculture**

- Build Capacity of crop farmers to plant drought resistance food crops.
- Mobilization and sensitization of farmers' on crop insurance.

### **8.4 Health and Nutrition**

- Strengthen malnutrition screening and active case search as well as strengthen integrated management of acute malnutrition in the community.
- Enhance disease and nutritional surveillance in hot spot areas.

### **8.5 Education**

- Support to schools feeding programmes for the most vulnerable communities focusing on the most vulnerable areas in the county to minimize drop outs.
- Provide Food for fees for students hailing from Vulnerable and poor families.
- Provision of boarding facilities to vulnerable communities within the County.

### **8.6 Peace and Security Sector**

- Peace and security meetings should be enhanced in the County
- Inter Counties peace and security to be enhanced in order to avert future conflicts.

### **8.7 Information Communication Technology**

- Promote use of ICT on Drought information sharing and development programmes.

## REFERENCE TABLES

**Table 1: Drought Phase Classification**

Normal	Alert	Alarm	Emergency
All environmental Agricultural and pastoral indicators are within the seasonal ranges	Meteorological drought indicators move outside seasonal ranges	Environmental and at least two production indicators are outside Long term seasonal ranges	All Environmental, Metrological and Production indicators are outside normal ranges.
<b>Recovery:</b> The drought phase must have reached at least Alarm stage. Recovery starts after the end of drought as signalled by the environmental indicators returning to seasonal norms; local economies starting to recover			

**Table 2: Standardized Precipitation Index (SPI)**

Color	SPI Values	Metrological Drought Category
	> +1.5 or more	Wet Conditions
	0 to +1.5	No drought
	-0.1 to -0.99	Mild drought
	-1 to -1.99	Severe drought
	<-2 and less	Extreme drought

**Table 3: Vegetation Condition Index Values (VCI)**

Color	VCI values 3-monthly average	Agricultural Drought Category
	≥50	Wet
	35 to 50	No agricultural drought
	21 to 34	Moderate agricultural drought
	10 to 20	Severe agricultural drought
	<10	Extreme agricultural drought

**Table 4: Livestock Body Condition**

Level	Classification	Characteristics (this describes majority of the herd and not individual isolated Stock)
1	Normal	Very Fat Tail buried and in fat
		Fat, Blocky. Bone over back not visible
		Very Good Smooth with fat over back and tail head
		Good smooth appearance
2	Moderate	Moderate. neither fat nor thin
3	Stressed	Borderline fore-ribs not visible. 12th & 13th ribs visible
4	Critical	Thin fore ribs visible
5	Emaciated	Very thin no fat, bones visible
		Emaciated, little muscle left

### **Definition of Early Warning Phases**

The EW phases are defined as follow:

**NORMAL:** The normal phase occurs when **biophysical drought indicators ( VCI and SPI) show no unusual fluctuations** hence remain within the expected ranges for the time of the year in a given livelihood zone, division or county

**ALERT:** The alert phase is when either the **vegetation condition index or the standard precipitation index (biophysical indicators) show unusual fluctuations below expected seasonal ranges** within the whole county/sub-county or livelihood zones.

**ALARM:** The alarm phase occurs when both **biophysical and at least three production indicators fluctuate outside expected seasonal ranges** affecting the local economy. The production indicators to be considered are livestock body condition, crop condition, milk production, livestock migration and livestock mortality rate.

If **access indicators** (impact on market, access to food and water) move outside the normal range, the status remains at “alarm” but with a worsening trend. Proposed access indicators include ToT, price of cereals, availability of cereals and legumes, and milk consumption. The trend will be further worsening when also welfare indicators (MUAC and CSI) start moving outside the normal ranges.

**EMERGENCY:** In the emergency phase, **all indicators are outside of normal ranges**, local production systems have collapsed within the dominant economy. The emergency phase affects asset status and purchasing power to extent that seriously threatens food security. As a result, coping strategy index, malnutrition (MUAC) and livestock mortality rates move above emergency thresholds

**RECOVERY:** **Environmental indicators returning to seasonal norms.** The drought phase must have reached at least Alarm stage. Recovery starts after the end of drought as signalled by the environmental indicators returning to seasonal norms while production indicators are still outside the normal seasonal range but local economies start to recover. The status changes to normal once the bio physical and production indicators are back to normal range.