

National Drought Management Authority

LAMU COUNTY

DROUGHT EARLYWARNING BULLETING FOR JUNE 2018



A Vision 2030 Flagship Project



June 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 June.
- 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 decreased by 21 percent compared to previous month of May due to out-migration of livestock and diseases.

Access indicators

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

Utilization indicators

- The proportion of children at risk of malnutrition cases increased slight and below the normal range as indicated by percent of mid upper arm Circumference (MUAC).
- The average coping strategy decreased 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)	>37	80 -120
SPI-3Month(TAMSAT)	0.45	-0.1 to 1.0
VCI-3Month	71.53	<50
Forage condition	Good	Good
Production indicators	Value	Normal
Crop Condition(specify crop)	Good	Good
Livestock Body Condition	Good	Good
Milk Production	2.3	>12.75 Litres
Livestock Migration Pattern	Normal	Normal
Livestock deaths (from drought)	No death	No death
Access Indicators	Value	Normal
Terms of Trade (ToT)	108.6	84
Milk Consumption	1.4	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)	5.4%	<6.6%
Coping Strategy Index (CSI)	7.28	<0.95

Seasonal Calendar

<ul style="list-style-type: none"> ▪ Short rains harvests ▪ Short dry spell ▪ Reduced milk yields ▪ Increased HH Food Stocks ▪ Land preparation 	<ul style="list-style-type: none"> ▪ Planting/Weeding ▪ Long rains ▪ High Calving Rate ▪ Milk Yields Increase 	<ul style="list-style-type: none"> ▪ Long rains harvests ▪ A long dry spell ▪ Land preparation ▪ Increased HH Food Stocks ▪ Kidding (Sept) 	<ul style="list-style-type: none"> ▪ Short rains ▪ Planting/weeding 								
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 and second dekads of May as in figure 1 below.
- The ongoing long rains season is expected to continue until the end of the next month.
- The current NDVI values were below the historical NDVI values due to poor season of the short rains. The trend is improving with the increased precipitation during the long rains.

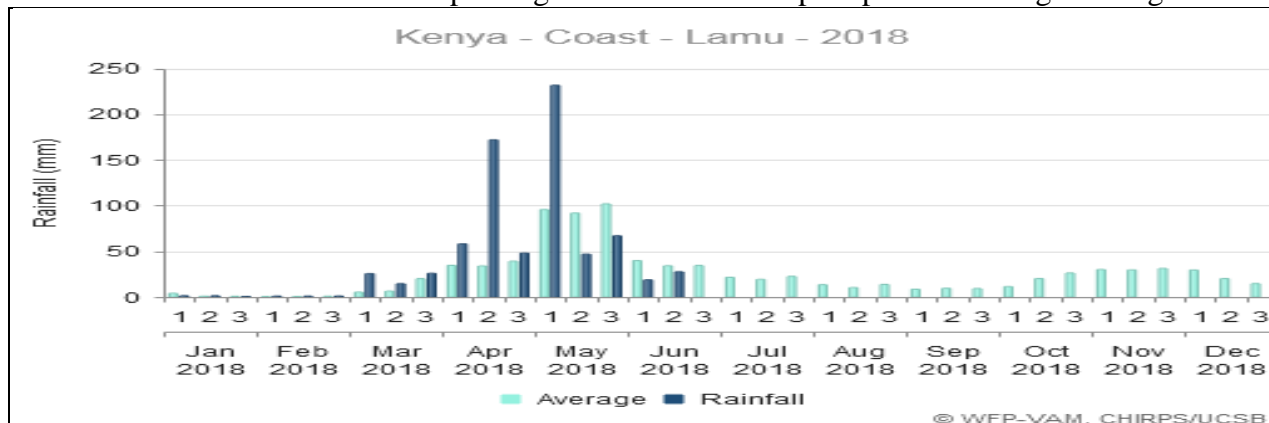


Figure 1: Rainfall Satellite data. (Source: wfp-Vam)

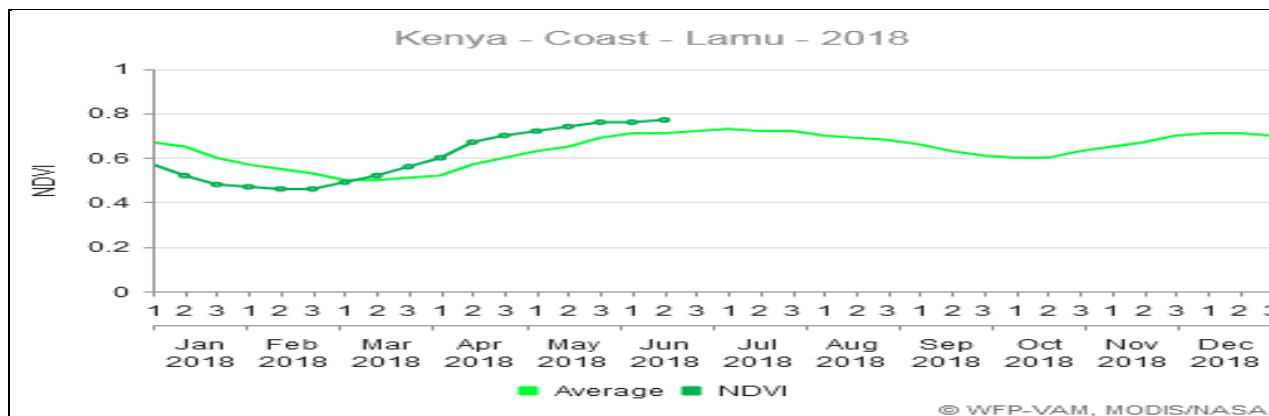


Figure 2: NDVI data. (Source: wfp-Vam)

1.2 Amount of rainfall and spatial distribution

- According to VAM WFP rainfall data, the County received a total of 18.7mm and 27.5mm of rainfall in the Month of June in the 1st and 2nd dekad respectively. This was 48.6 percent above the normal rainfall as in figure 1 above.
- This 46.2mm of rainfall was lower than the amount of 61.2 mm received in same period of the previous year.
- In addition, the current amount of rainfall received was lower than Long term average of 73.9mm.
- The performance of the rains was erratic and below normal.
- The amount of rainfall received during the month was 37 percent below the normal.
- The off season rainfalls received was unevenly distributed in both time and space 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 June 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 June was 71.53 compared to 66.1 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 table1 below.

Table 1: June 2018 VCI (3M)

ADMINISTRATIVE UNITS		Vegetation greenness	
County	Sub-County	VCI-3Month as at 26 th May 2018	VCI-3Month as at 26 th June 2018
LAMU	County	66.1	71.53
	Lamu East	72.4	73.66
	Lamu West	62.46	70.3

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

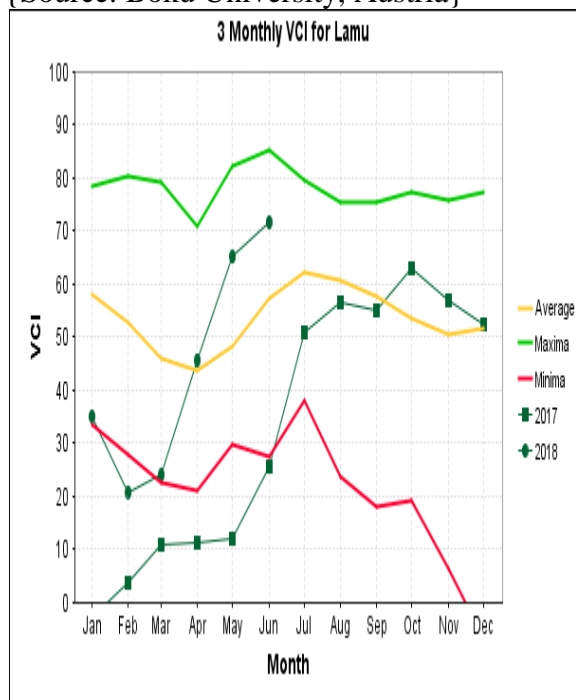


Figure 3: Vegetation Condition index (VCI)

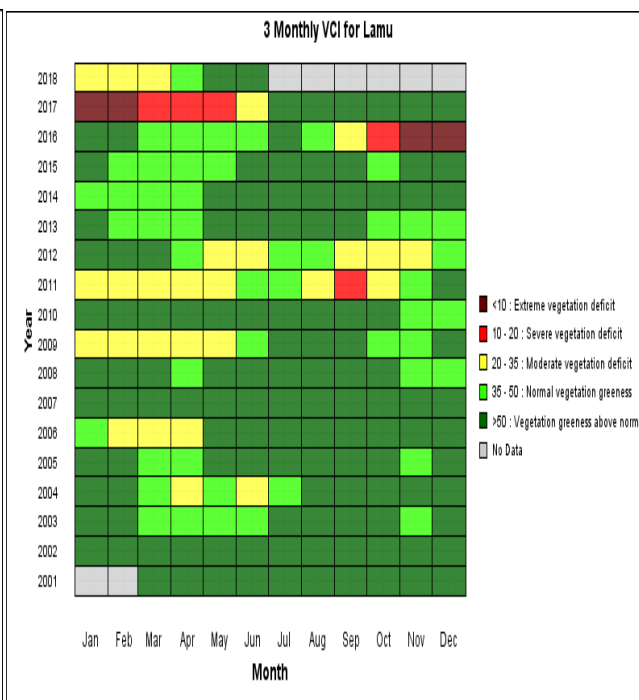


Figure 4: VCI-Lamu County

OBSERVATIONS

Pasture and Browse Conditions

2.1.2 Pasture

- 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.

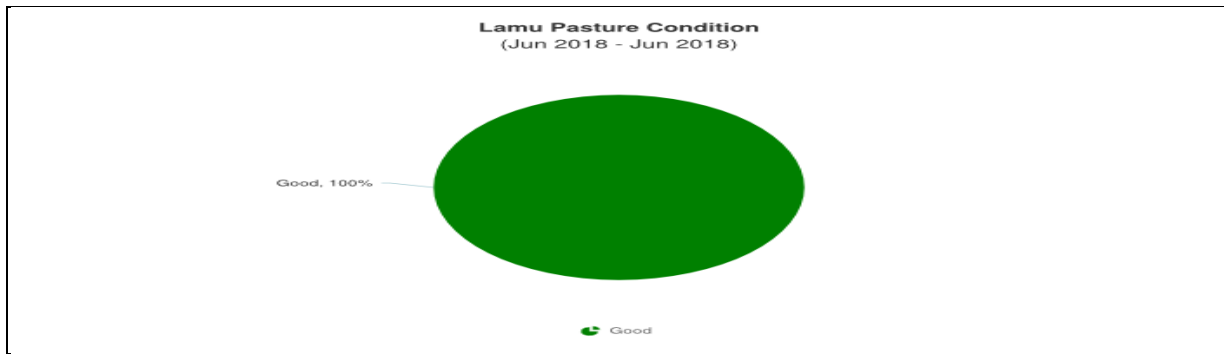


Figure 5: Pasture condition

2.1.3 Browse

- The quantity and quality of browse was good across all livelihood zones in the County.
- Community members interviewed indicated; 95percent of the respondents stated that browse was very good while 5percent stated it was good but on improving trend due to heavy 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 three months.

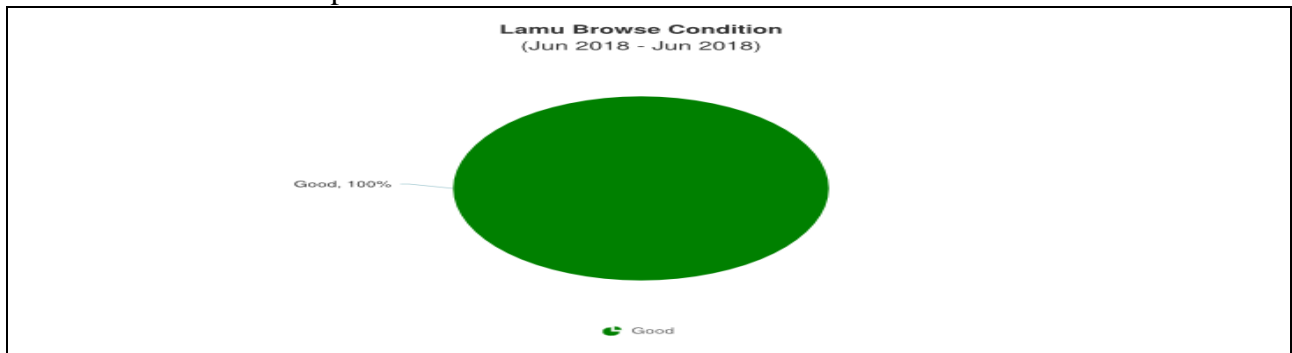


Figure 6: Browse condition

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. However, the current water situation has improved compared to previous month.
- The open water sources were recharged between 90-97 percent of their capacity due to heavy downpour during the month under review.
- The main water sources in the month of June:- Pans and dams -22.2percent, shallow wells-33.3percent, Boreholes-11.1percent, Traditional water wells-11.1percent and Rivers-22.2percent respectively as in figure 7 below.

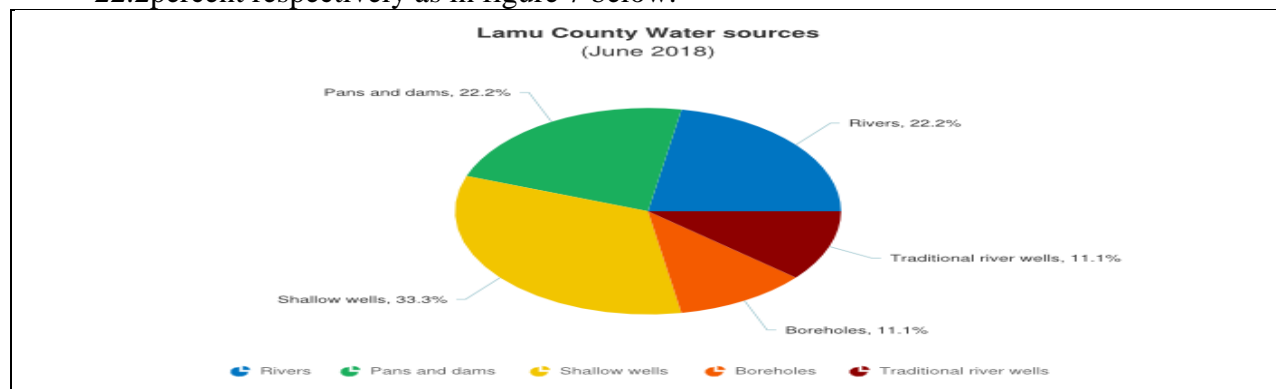


Figure 7: Main sources of Water

2.2.2 Household access and Utilization

- Average Household watering return distance was 2.4Km in June, 33percent decrease from 3.6Km in May.
- This was due to significant rainfall amount received which led to increase in water levels.
- Household return water distances per livelihood zone were as follows: The Agro pastoral - 2.7Km, Fishing & Mangrove Harvesting 1.8Km and for Mixed Farming Zone it was 1.4Km and irrigated farming 1.2Km respectively.
- The 2013-2017 average household water distances for June was 1.90 Kilometres which was lower than the current average household watering distance for June 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.

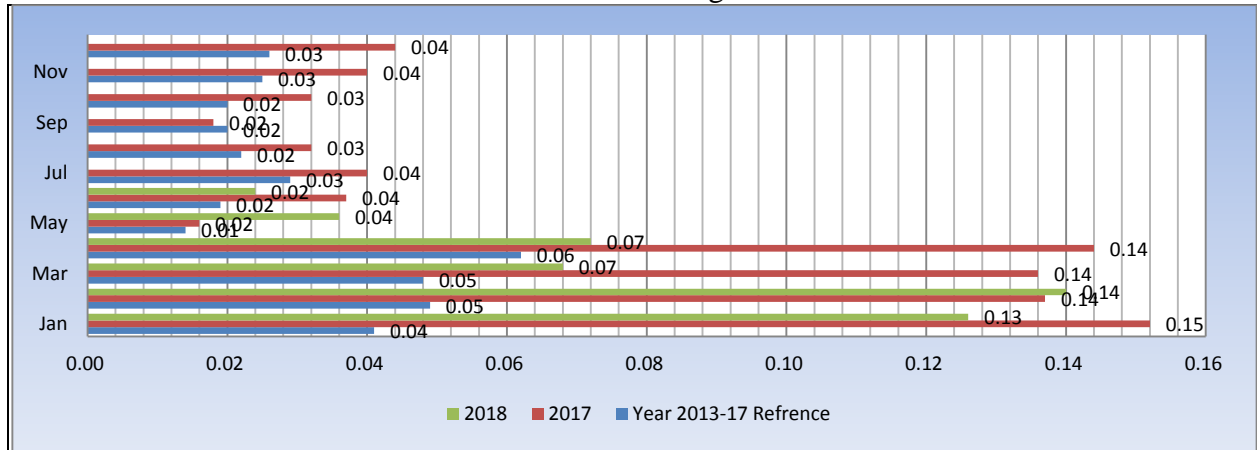


Figure 8: Household water distance

n=150

2.2.3 Livestock access to Water

- Livestock average distance to water source from grazing Area was 3.1 kilometres in the month of June from 3.9km in month of May 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 decrease from last month's distance was due to rainfall received during the month which led to good recharge of the open water sources.
- 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 water distance for June was 3.1Kilometers was higher than the long-term average of 2.80 Kilometres.

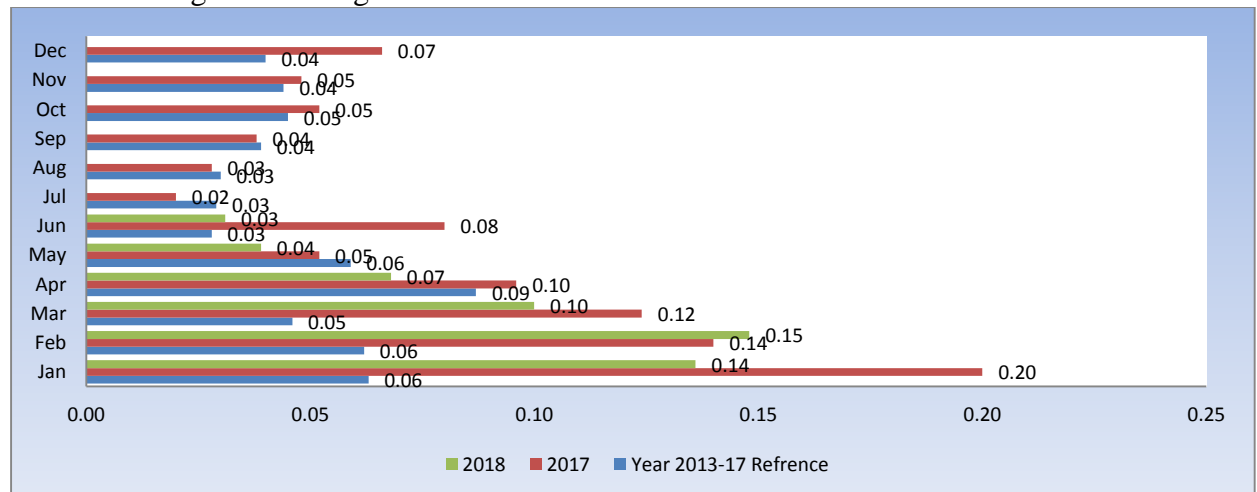


Figure 9: Grazing distance -Km

n=150

2.2.4 Household Income

- The main household income for the month of June was as follows: Casual labour 63percent, Employment 14percent, trade 16percent sale of Livestock/Livestock products 7percent respectively as in figure10 below.
- However, casual labour increased by two percent while there was decrease in sale of livestock products compared to previous month.

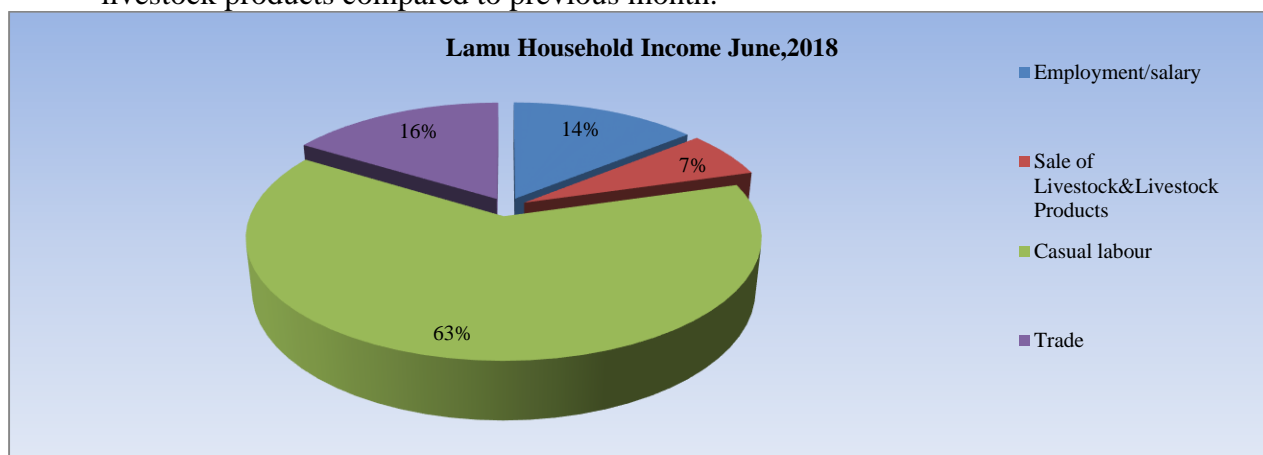


Figure 10: Households sources of income

2.4 Implication to Food Security

- The off season rainfall recorded during the month of June improved recharging of major open water sources leading to reduced distance access to water for both livestock and domestics uses in Agro pastoral and Mixed farming zone.
- Fishing and Mangrove zones livelihood zones which were previously affected by salinity of water improved 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 out-migration of livestock from Didewaride, to nearby counties of Tana River.
- There were also in migration of livestock from Ijara to Kiunga and Bargoni areas.

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 few incidences of Livestock diseases reported from Bargoni and Kiunga area during these Months.

3.1.4 Milk Production

- Milk production decreased from 2.9litres in May to 2.3litres in June, 2018. This was higher than the long-term average of 1.10 litres in June as in figure11 below.
- Milk productions were distributed as follows: Mixed farming zone Produced (1.5litres), Fishing zone 0.5litres, and Irrigated zone (1.0litres) while the Agro pastoral zone produced average of 1litres.
- In comparison to a normal season, the current household milk production is below the normal by 81percent.
- Milk prices are retailing at an average price of Kshs.40-60 per liter 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 relocating to the nearby counties of Tana River owing to less pests and easy accessibility.

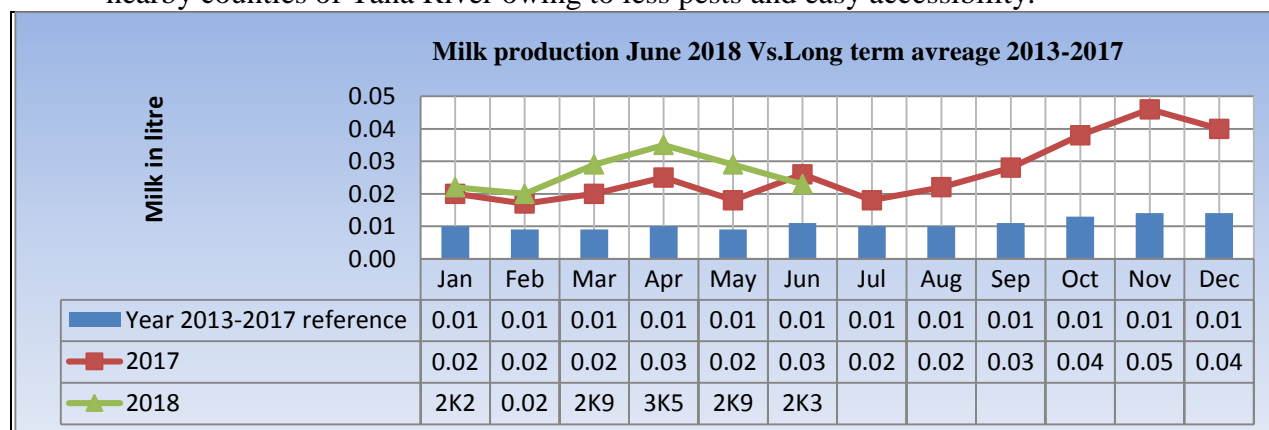


Figure 1: Milk production

n=150

3.2 Rain fed crop production

3.2.1 Stage and condition of food crop

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

3.2.2. Crop Harvest

- Few Crop farmers have harvested their long rains crop production while others are harvesting green maize in mixed and Pastoral farming livelihood zones.

3.2.3 Implications on Food Security

- The good body condition of livestock species 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 June was Kshs 24,450 which is slight increase from previous month as in figure 12 below.
- This increase in price could be attributed to high demand and fewer supplies in the markets owing to long rains experienced during this month.
- The cattle average market prices were distributed as follows: Faza 30,000 Kshs, Witu 28,000 Kshs, Kiunga 30,000 and Mokowe 23,800 Kshs respectively.
- The average market cattle price for the month of June was, however higher than the 2015-2017 long-term average price of Ksh.15, 900.

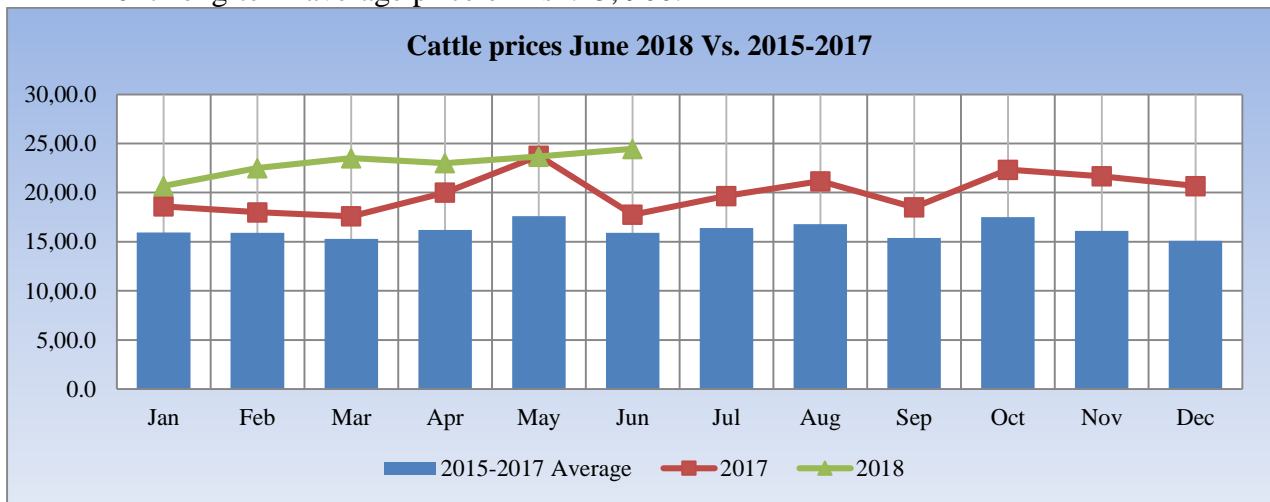


Figure 2: Cattle prices

4.1.2 Small Ruminants Prices

4.1.3 Goat Prices

- Goat prices for medium size animal remained stabled at Kshs 4,750 for the month of June as shown in figure13 below. This stability in price of goats could be attributed to the weather not conducive for the survival of Goats and low demand.
- The goat average market prices were distributed as follows: Mpeketoni Kshs 3,000, Witu Kshs 5,000 Kiunga Kshs 6,000 and Mokowe Kshs 5,000 respectively.
- The long-term average goat price for the month of June was Kshs. 3,470 which was lower than the current average price for the month of June.

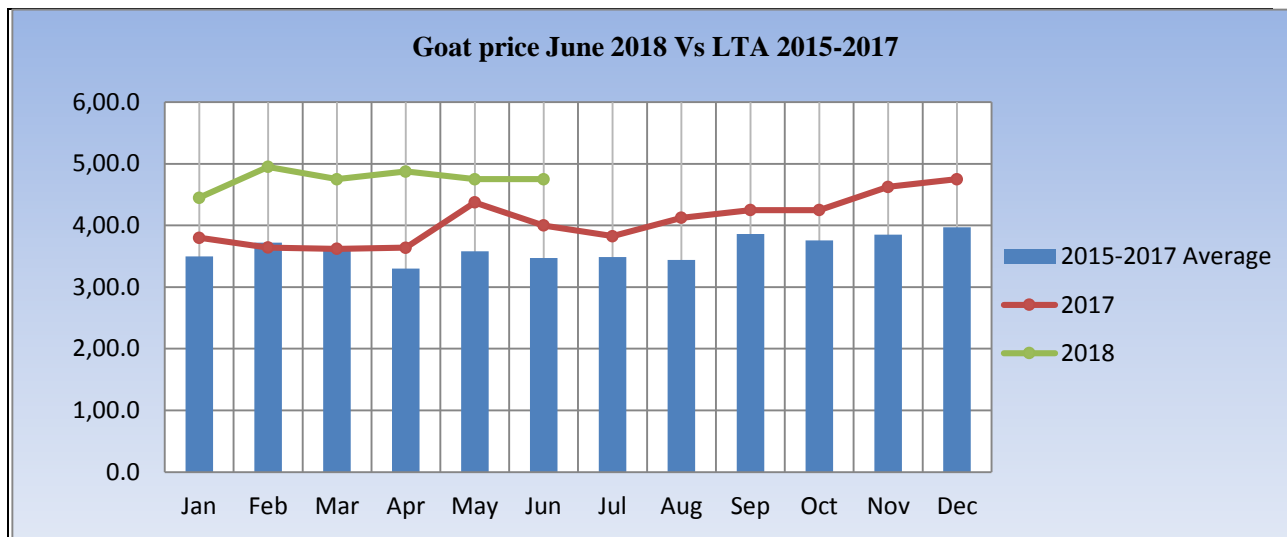


Figure 3: Goat prices

4.2 Crop prices

4.2.1 Maize price

- Average price of a Kg of maize in the Month of June was Kshs 44.0/Kg which was an increase from Kshs 41 during the previous month due to low supply in markets as shown in figure 14 below.
- The prices were distributed as follows: Hindi centre Kshs 55, Patte Kshs 50, Witu Kshs 35, Mpeketoni Kshs 35 and Kiunga Kshs 50 respectively. However, price ranges is determined by commodity supply in the different markets.
- The average price of maize in June was lower when compared with the long term-average price of Kshs 47.

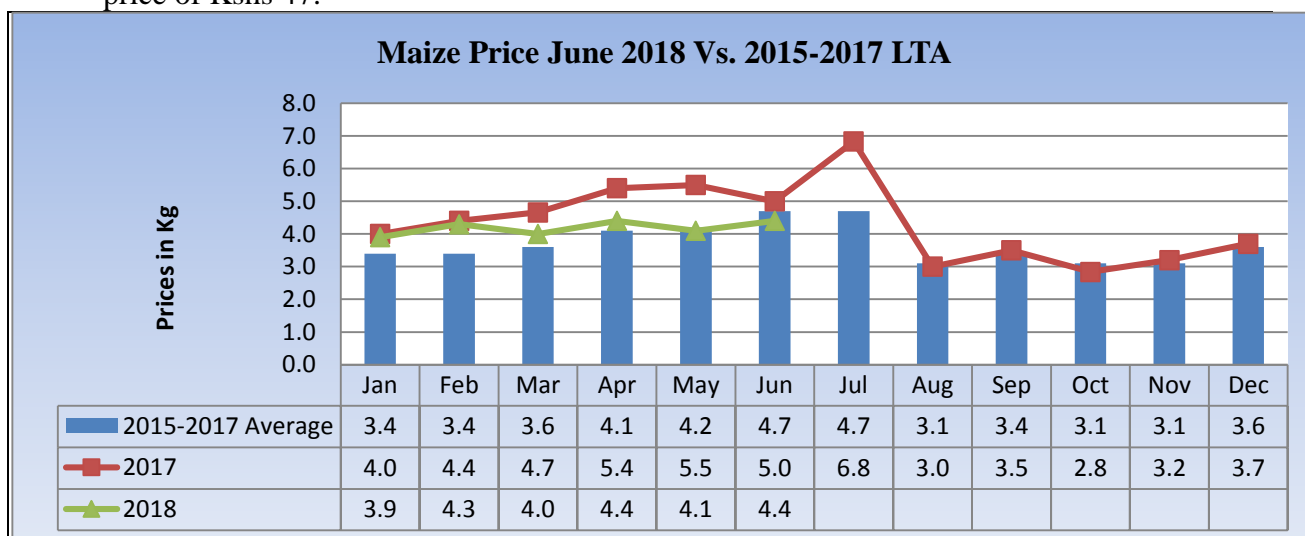


Figure 4: Maize prices

4.2.2 Beans

- Average price of Kg of beans was Kshs 103 in June, a decreased compared to the previous month as in figure 15 below. The decreased price was attributed to the harvest of green grams and cowpeas.
- The beans price was distributed as follows: Mswakini /Hindi centre Kshs 120, Patte Kshs100 and Witu Kshs 95, Mpeketoni Kshs 80 and Kiunga Kshs 120 respectively. However, price range is determined by commodity supply in the different markets.
- The long-term average price of beans was Kshs 105 which is higher compared to the current beans price for the month of June.

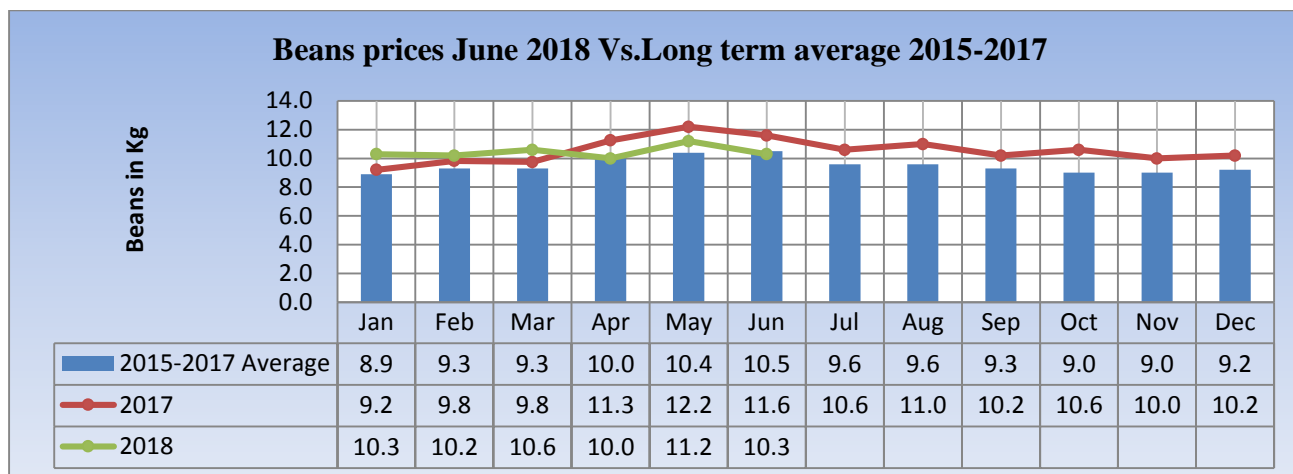


Figure 5: Beans prices

4.3 Livestock Price ratio/Terms of Trade

- The average Term of Trade (ToT) for the month of June was 108.6kg, decrease compared to 115.2Kg during the previous month as in figure 16 below.
- Sale of a medium goat in June would cost a household about 108.6 kg of maize. This showed the exchange ratio decreased in favour of crop farmers to goat sellers. However, this was determined by supply in the different markets.
- The ToT was 104Kg in Lamu West and 120Kg in Lamu East. The ToT for June was higher than the long term average of 75Kg.

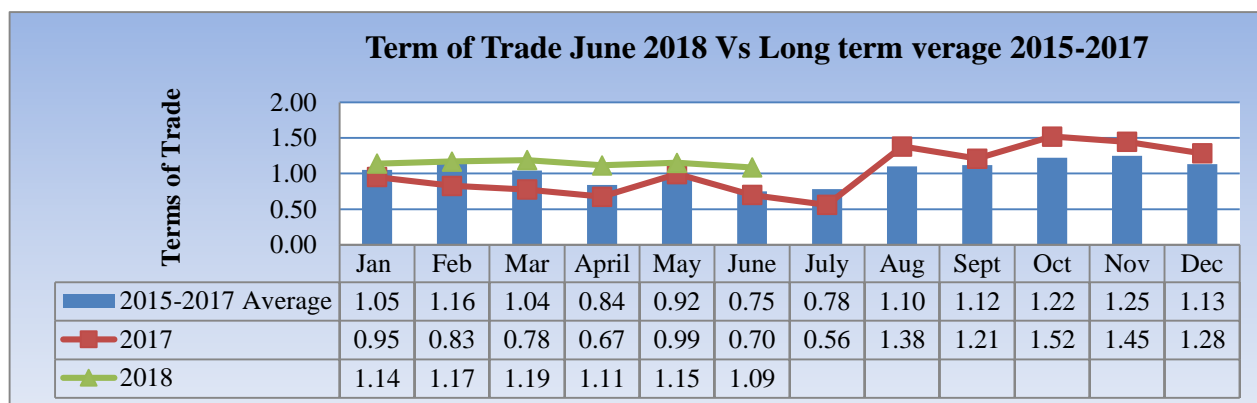


Figure 6: Terms of Trade

4.4 Implication on food security

- The good body condition of livestock has increased livestock prices especially for cattle and stable for goats, therefore livestock farmers are able to get better value for their livestock contributing to food security in Mixed and Agro pastoral zones.
- Maize prices increased due to high 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 were favorable in the mixed farming livelihood zones compared to agro pastoral livelihood zone.

5.0 FOOD CONSUMPTION AND NUTRITION STATUS

5.1 Milk for Household Consumption

- Milk Consumption was 1.4litres in the month of June which decreased slightly compared to 1.6 litres during the previous month as in figure 17 below.
- The decrease in milk consumption level is as a result of low production attributed to the animal health that are deteriorating due to diseases and weather condition.
- June long term average milk consumption of 0.70 litres which was lower than the current average of milk consumption.

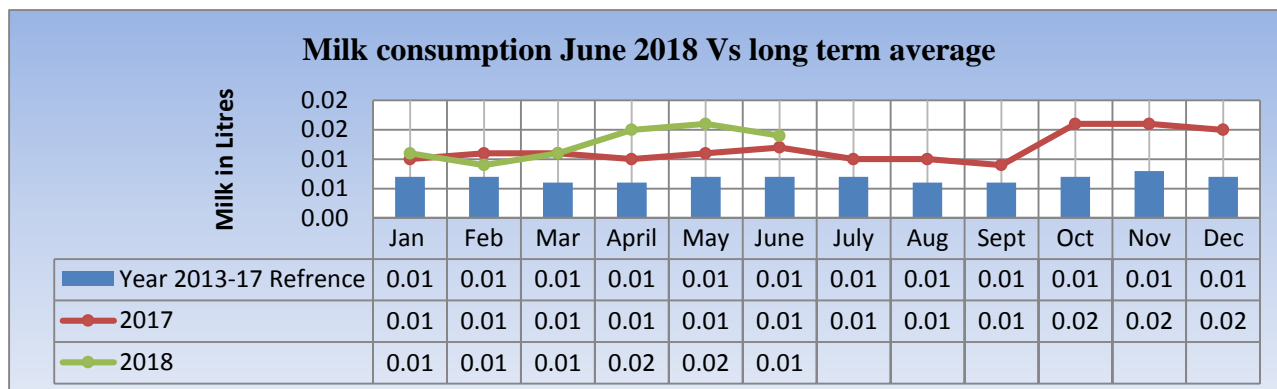


Figure 7: Milk production

5.2 Health and Nutrition status

5.2.1 MUAC

- The proportion of children under five at risk of malnutrition with Mid Upper Arm Circumference below 135mm was 5.4 percent in June an increase from 5.3 in May indicating declining situation. This increase was attributed to decreased milk production and low consumption.
- The rates of Malnutrition cases are increasing in the Agro pastoral and Mixed farming Zones of Witu, Hindi wards.
- This figure of 5.4 percent MUAC for June was a decrease compared to long term average of 5.6 percent as in figure 18 below.

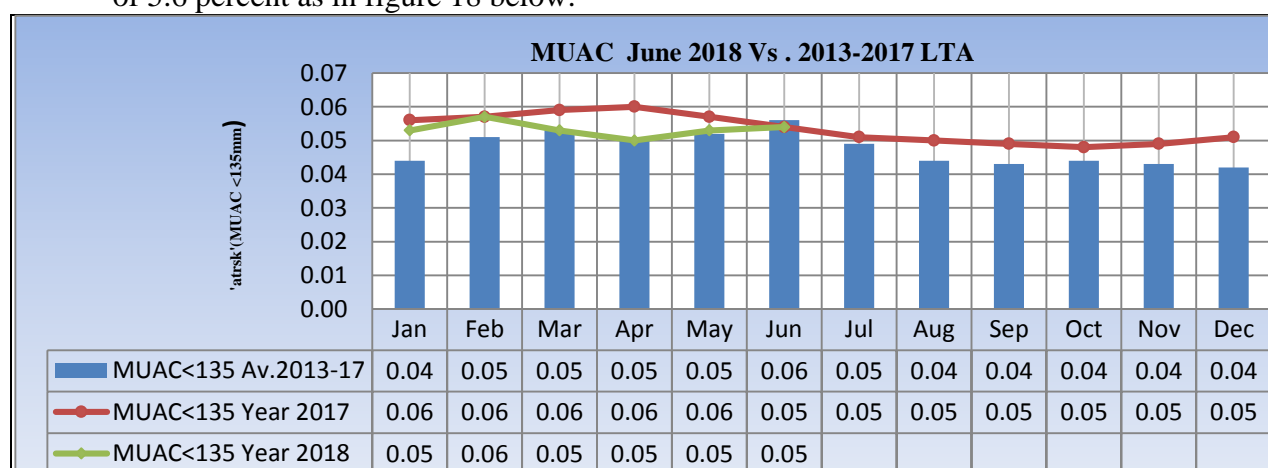


Figure 8: MUAC

n=150

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 (FCS)

- Acceptable food consumption was noted in Agro pastoral and fishing /Mangrove zone with 100 and 100 percent of households respectively, owing to availability of food in the markets with improved purchasing power.
- Household percentage with poor food consumption decreased significantly to zero at all livelihood zones.

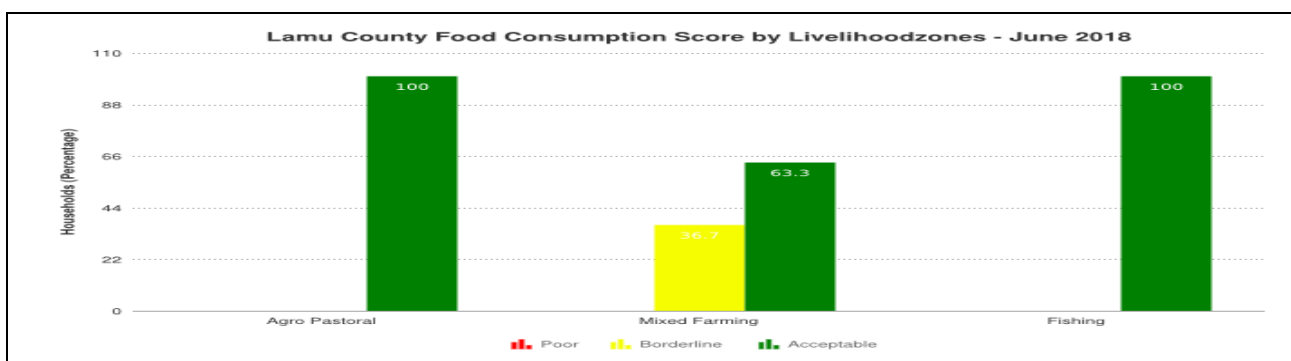


Figure 9: Food consumption score (FCS)

5.4 Coping strategy index

- The mean coping strategy Index in the Month of June decreased to 7.28 from 8.13 in May, indicating decreased coping strategies at household level.
- Agro pastoral Zone had CSI of 5.8; Mixed Farming livelihood zone had 10.3 while Fishing Livelihood zone had a copying strategy index of 4.2 as figure 20 below.
- Common coping strategies employed by food insecure households in the month of May were:
 - ✓ Opting for less preferred or less expensive food.
 - ✓ Reduction in the number of meals.
 - ✓ Purchase on credit/remittances from relatives.
 - ✓ Borrow food from friends or relatives.

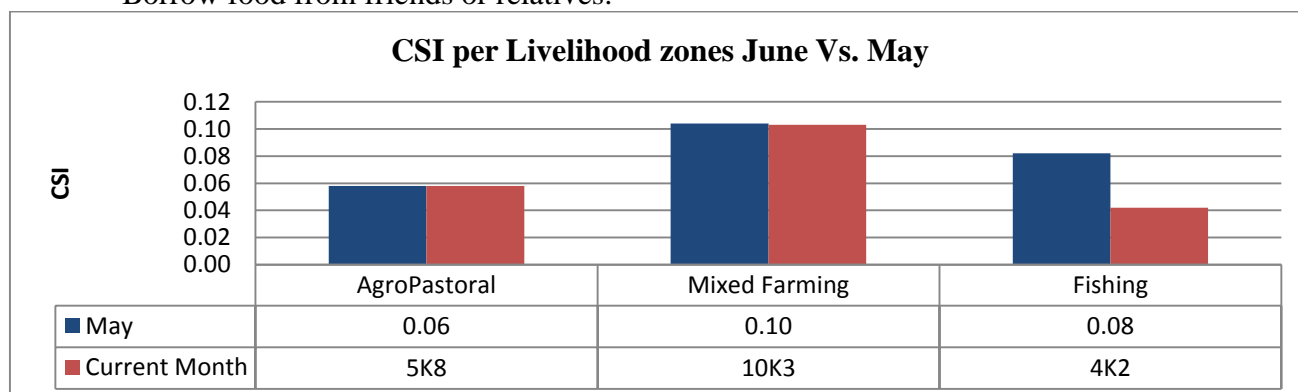


Figure 10: Coping strategy index (CSI)

5.5 Implication on Food Security

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

6.0 CURRENT INTERVENTION MEASURES (ACTION)

6.1 Food and Non-food interventions

6.2 Drought Response Interventions

Non -food items

- KRCS supported 369 households with NFIs-Blankets, tarpaulin and mats. Hygiene promotion campaigns done in 18 floods affected villages. Distributed 16,800 satchets of PUR to 840 households.856 households reached for shelter assessment. 396 under 5yrs children reach with nutrition screening.
- 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 is planning to carry out restocking of breeding goats in affected areas in the County.

7.0 EMERGING ISSUES

7.1 Insecurity

- There were no cases of insecurity reported during the month under review.

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.
- Nutrition status will improve in the coming months.
- Forage condition projected continue improving and hence stabilize livestock body conditions, production and prices in coming months. Food prices are expected to decrease.
- The May 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 further.

8.0 RECOMMENDATIONS

Water

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

Livestock

- 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.
- Accelerate completion of Nagele Livestock market for Linkage to other Livestock markets.
- Livestock disease surveillance, Vaccinations and control to curb spread of livestock diseases.
- Promote Pasture and fodder planting in the county during and after the long rains.
- Provision of hay band machines for harvesting.
- Provision of storage facilities for Animal feeds.
- Promote livestock insurance services.

Agriculture

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

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.

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.

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.

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.
Recovery: 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.