

National Drought Management Authority

LAMU COUNTY

DROUGHT EARLYWARNING BULLETING FOR APRIL 2018



A Vision 2030 Flagship Project



April 2018: EW PHASE

Drought Status: NORMAL

Shughuli za kawaida

Drought Situation & EW Phase Classification

Biophysical Indicators

- Onset of long rains is continuing and on good trend.
- The County experienced significant rainfalls during the Month under review.
- The vegetation condition Index(VCI-3Month) was showing an increase of 91 percent compared to previous month.
- The VCI indicated normal vegetation greenness with improving trend. The overall drought phase in the county was at Normal in April.
- Forage condition was good during the month.

Socio Economic Indicators

Production indicators

- All livestock species exhibited good body condition and on improving trend.
- Milk production increased by 60 percent compared to previous month of March due to good forage, in-migration and decreased trekking distances.

Access indicators

- Terms of trade were not 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 improved and higher than the long term Average.

Utilization indicators

- The proportion of children at risk of malnutrition cases is stable 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	Improving
Mixed farming/Irrigated cropping	Normal	Improving
Fisheries /Mangroves	Normal	Improving
Farming/Casual Labour	Normal	Improving
Agro pastoral	Normal	Improving
County	Normal	Improving
Biophysical Indicators	Value	Normal Range/Value
Rainfall (% of Normal)	91	80 -120
SPI-3Month(TAMSAT)	0.45	-0.1 to 1.0
VCI-3Month	45.59	<50
Forage condition	Good	Good
Production indicators	Value	Normal
Crop Condition(specify crop)	Good	Good
Livestock Body Condition	Fair to good	Good
Milk Production	3.5	>12.75 Litres
Livestock Migration Pattern	Not Normal	Normal
Livestock deaths (from drought)	No death	No death
Access Indicators	Value	Normal
Terms of Trade (ToT)	111.4	84
Milk Consumption	1.5	36 litres
Return distance to water sources	7.2	<5 Km
Cost of water at source (20 litres)	3-10	<5Kshs
Utilization indicators	Value	Normal
Nutrition Status, MUAC (% at risk of malnutrition)	5.0%	<6.6%
Coping Strategy Index (CSI)	7.87	<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

- Onset of long rains is timely on 1st dekad and 2nd dekad of April.
- The onset is early compared to the same period last year on 1st dekad of April.
- This is not normal during the time of year as the onset of long rains were expected on third dekad of April.
- 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.

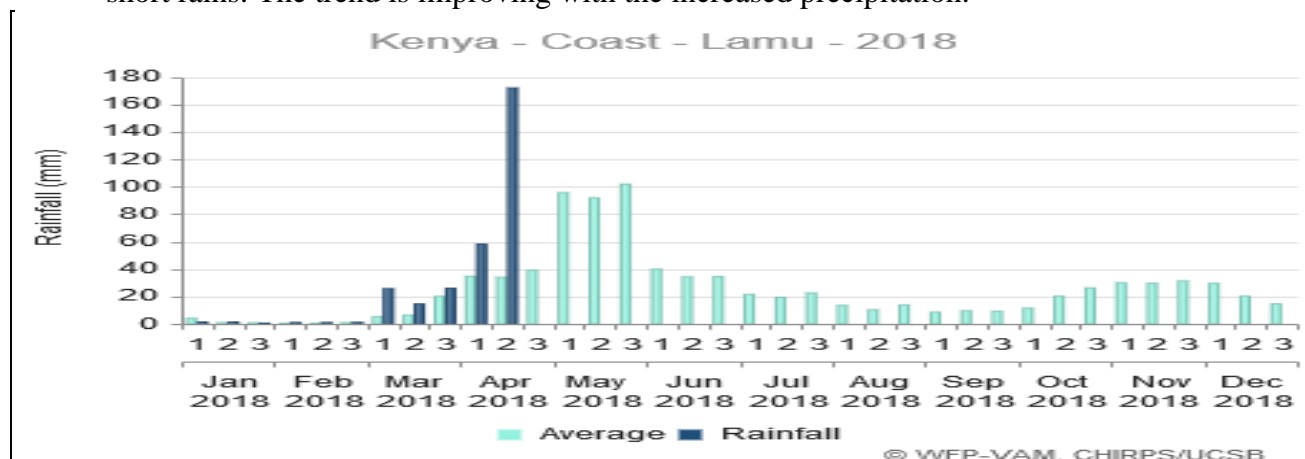


Figure 1: Rainfall Satellite data. (Source: wfp-Vam)

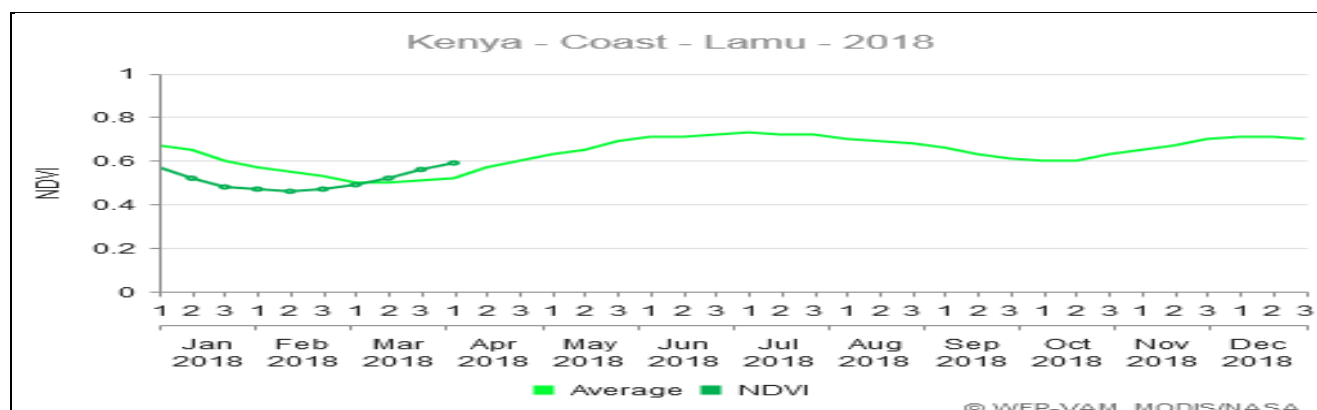


Figure 2: NDVI data. (Source: wfp-Vam)

1.2 Amount of rainfall and spatial distribution

- According to VAM WFP rainfall data, the County received a total of 58.1 and 171.8 of rainfall in the Month of April in the 1st and 2nd dekad respectively. This was 91.6 percent above the normal rainfall as in figure 1 above.
- This 229.9 mm of rainfall was higher than the amount of 68.7mm received in same period of the previous year.
- In addition, the current amount of rainfall received was higher than Long term average of 68.5mm.
- The performance of the rains was erratic but above normal.
- The rainfall received were fairly distributed in both time and space in all parts of the livelihood zones of the county.

1.3 Flooding or any other hazards

- Floods were reported from most affected areas such as Chalaluma, Moa, Nyongoro, Matabore and Didewaride Villages in Agro pastoral areas of Witu bordering Tana delta.
- The floods have rendered more than 87 Households homeless after their houses were swept away. However there were **NO** reports of human or Livestock death during the Month under review.

2.0 VEGETATION CONDITION

2.1 Vegetation Condition Index (VCI)

- The vegetation condition index for the month of April increased by 91 percent compared to the previous month. This was due to the rainfall received during the Month.
- The vegetation condition index for the month of April was 45.59 compared to 23.84 in the previous month.
- The VCI indicated Normal vegetation greenness in Lamu West and East Sub-Counties.
- The VCI-3Months is above the long-term average and below the previous year as shown in the figures 3,4 and table1 below.

Table 1: April 2018 VCI (3M)

ADMINISTRATIVE UNITS		Vegetation greenness	
County	Sub-County	VCI-3Month as at 26 th March 2018	VCI-3Month as at 26 th April 2018
LAMU	County	23.84	45.59
	Lamu East	25.13	51.77
	Lamu West	23.09	42.02

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

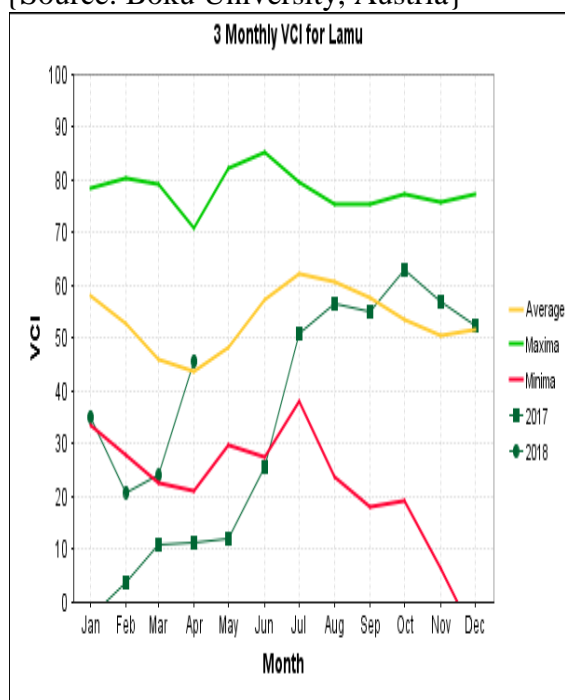


Figure 3: Vegetation Condition index (VCI)

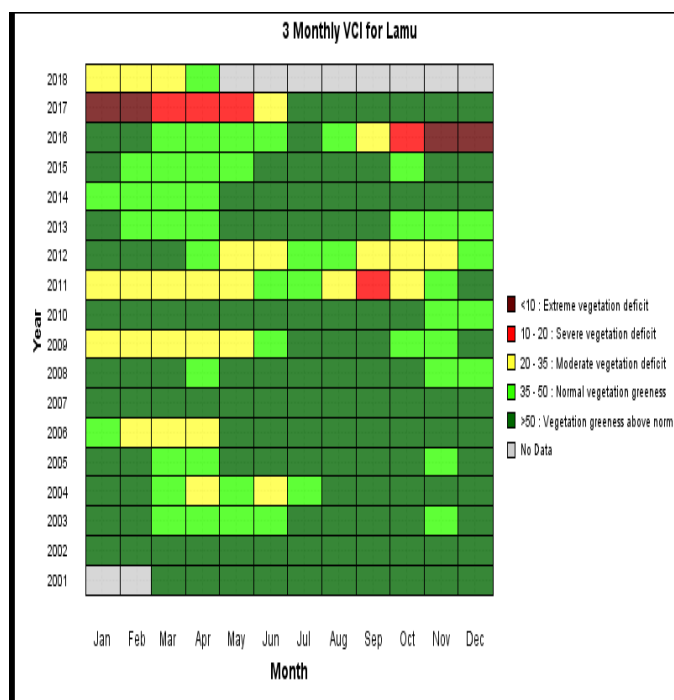


Figure 4: VCI-Lamu County

OBSERVATIONS

Pasture and Browse Conditions

2.1.2 Pasture

- Pasture condition was good across all livelihood zones both in quality and quantity.
- 80 percent of Community members interviewed stated that pasture was good while 20 percent indicated that pasture was poor 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 fair to poor.
- The available pasture is expected to last not more than three months due to the presence of in-migrant livestock from neighbouring counties.

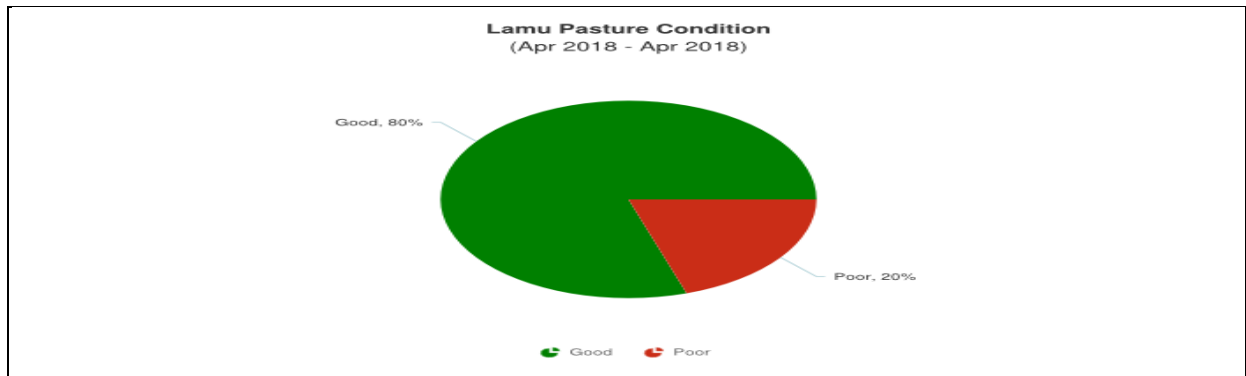


Figure 5: Pasture condition

2.1.3 Browse

- The quantity and quality of browse was good across all livelihood zones for the month of April.
- Community members interviewed indicated; 80percent of the respondents stated that browse was very good while 20percent stated it was poor 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.

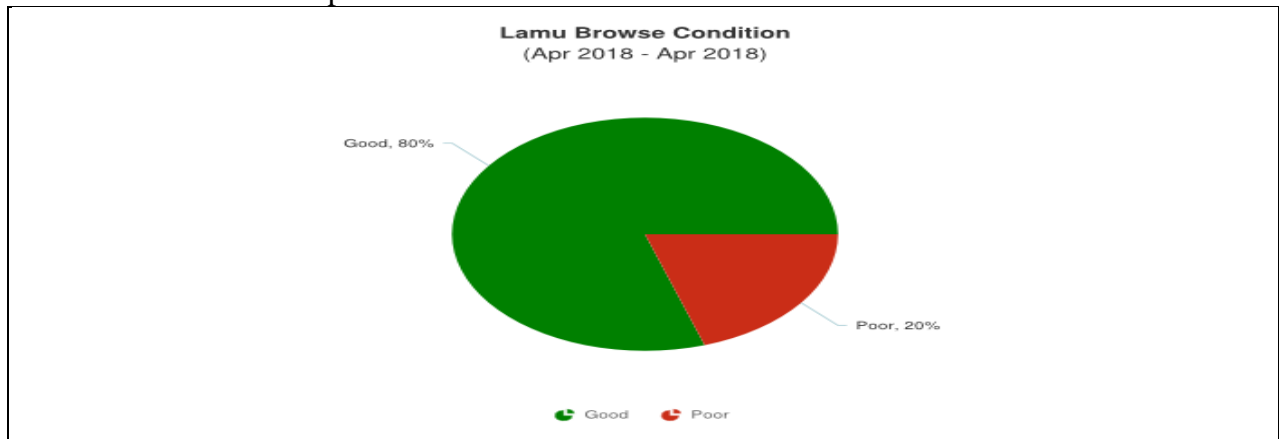


Figure 6: Browse condition

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 is improving compared to previous month.
- The open water sources were recharged between 50 -75 percent of their capacity due to high rainfalls.
- The main water sources in the month of April:-Pans and dams -37.5percent, Boreholes-12.5percent, shallow wells-37.5percent and Rivers-12.5percent respectively as in figure 7 below.

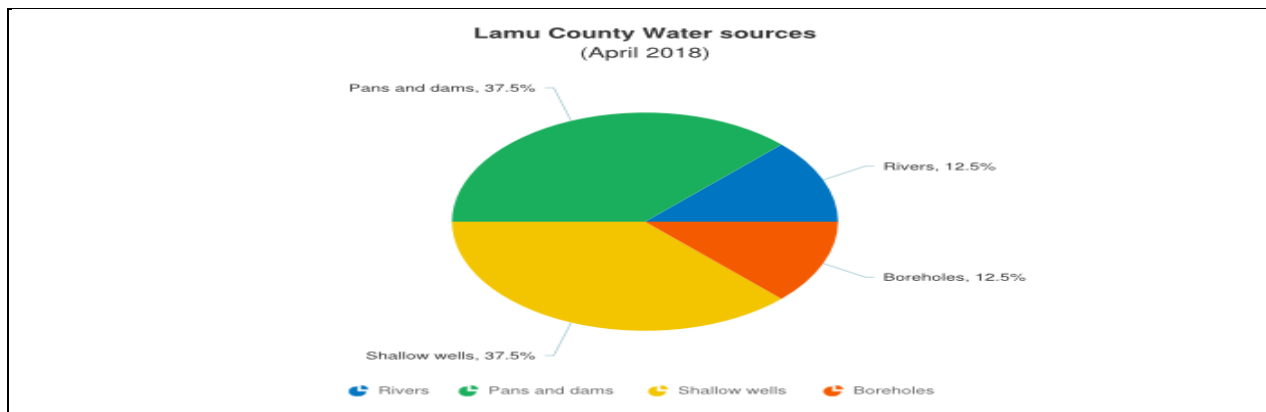


Figure 7: Main sources of Water

2.2.2 Household access and Utilization

- Average Household watering return distance was 7.2Km in April a slight increase from 6.8Km in March.
- This was due to rainfall amount received which led to increased in water levels.
- Household return water distances per livelihood zone were as follows: the Agro pastoral - 3Km, Fishing & Mangrove Harvesting 2.2Km and for Mixed Farming Zone it was 1.4Km and irrigated farming 1Km respectively.
- The 2013-2017 average household water distances for April was 4.8 Kilometres which was lower than the current average household watering distance for March as in figure 8.
- The average household water consumption per person per day is at 10-20 litres in the Agro Pastoral zone whereas in the Fishing 10-15 litres per person per day.
- Water costs at source is 3-5Kshs in town/village centres for 20 litre Jerrican.

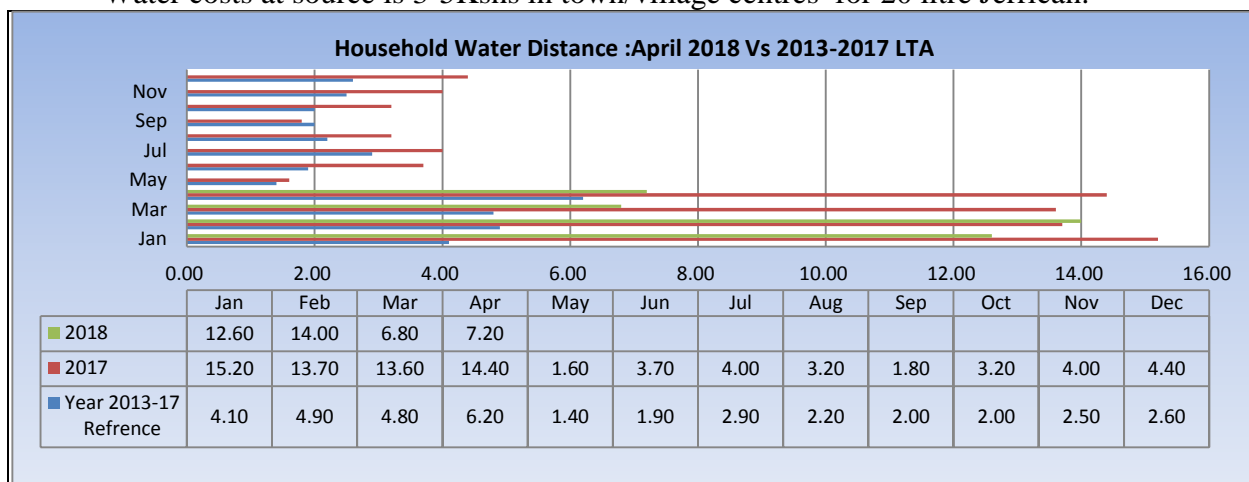


Figure 8: Household water distance

n=150

2.2.3 Livestock access to Water

- Livestock average distance to water source from grazing Area was 6.8 kilometres in the month of April from 10km in month of March as in figure 9.
- Grazing return water distances per livelihood zone were as follows: the Agro pastoral - 4.1Km, Fishing & Mangrove Harvesting 2.4Km and for Mixed Farming Zone it was 1.8Km and irrigated farming 2.5Km respectively
- The decrease from last month's distance was due to rainfall received during the month which led to fair to poor recharge of the open water sources.
- Frequency for watering cattle and goats is 1-3 times in a week. The current average grazing water distance for April was 6.8Kilometers was higher than the long-term average of 8.7 Kilometres.

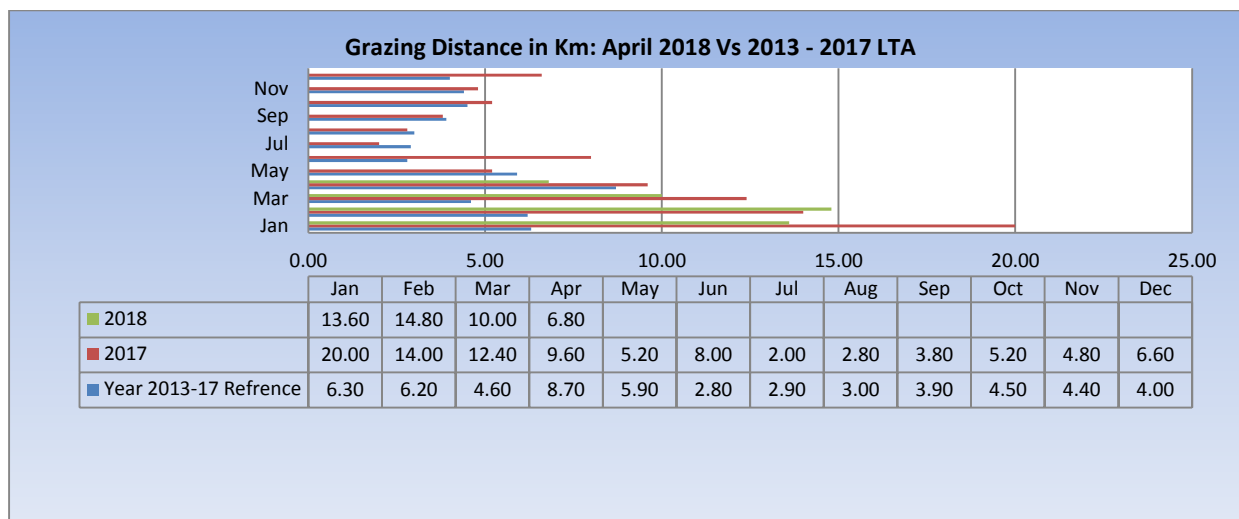


Figure 9: Grazing distance -Km

n=150

2.2.4 Household Income

- The main household income for the month of April was as follows: Casual labour 60percent, Employment 16percent, trade 14percent sale of Livestock/Livestock products 10percent respectively as in figure10 below. However, employment increased by two percent while there was decrease in sale of livestock products compared to previous month.

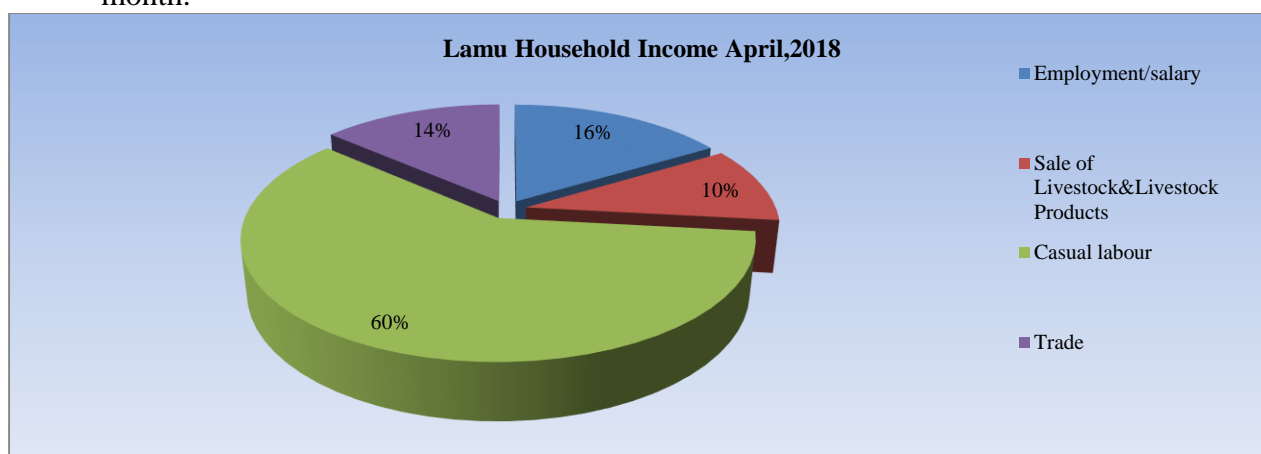


Figure 10: Households sources of income

2.4 Implication to Food Security

- There was enough rainfall recorded during the month of April with improved recharging of major 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 were mainly affected especially in Faza, Patte, Tchundwa, Mtanga-wanda, Mixed farming zone of Mokowe and Bargoni where the cost of water is 20-50 Kshs per 20 litre Jerrican.
- 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 were in-migration of livestock from Ijara sub County to mixed farming livelihood zone of Bargoni area of Hindi ward (Boni area).

3.1.2 Livestock Body Condition

- The livestock body condition was good for cattle and goats in both the Mixed farming and Agro Pastoral livelihood zones. This is attributed to increased quality and quantity of pasture and browse due to the 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 or deaths reported during these Month.

3.1.4 Milk Production

- Milk production increased from 2.9litres in March to 3.5litres in April 2018. This was higher than the long-term average of 1.0 litre in April as in figure11 below.
- Milk productions were distributed as follows: Mixed farming Produced 2.5litres, Fishing 0.5litres, and Irrigated 2.0litres while the Agro pastoral Zone produced average of 1litres.
- In comparison to a normal season, the current household milk production is above the normal by 250 percent.
- The change of the household milk production recorded during the previous month is due to calving by Cattle and rainfall received, especially in Lamu west.

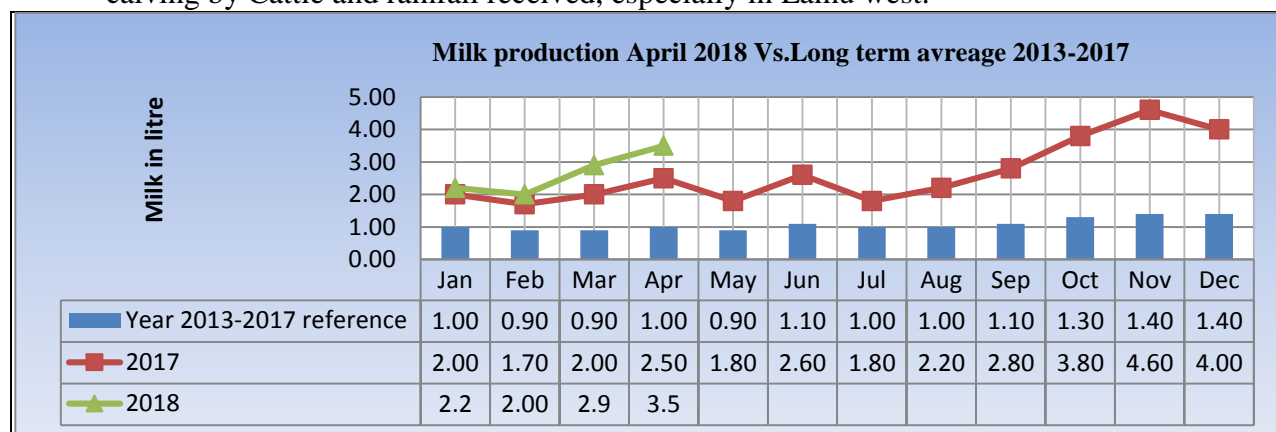


Figure 1: Milk production

n=150

3.2 Rain fed crop production

3.2.1 Stage and condition of food crop

- The main crops grown are Maize, Cowpeas and Green grams in the County.
- The on-going farming activities include weeding of crops and planting.
- Farm crops that were planted earlier in March are at Poding/tussling stages.
- Agro pastoral/Fishing/Mangrove livelihood zones have started land preparation and planting.

3.2.2 Implications on Food Security

- The good body condition of cattle /goat across the livelihood zones has increased the prices resulting to increased 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 April was Kshs 23,000 which is slight decrease from previous month as in figure 12 below.
- This decrease in price could be attributed to low 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 17,000 Kshs, Kiunga 30,000 and Mokowe 22,000 Kshs respectively.
- The average market cattle price for the month of April was, however higher than the 2015-2017 long-term average price of Ksh.16, 200.

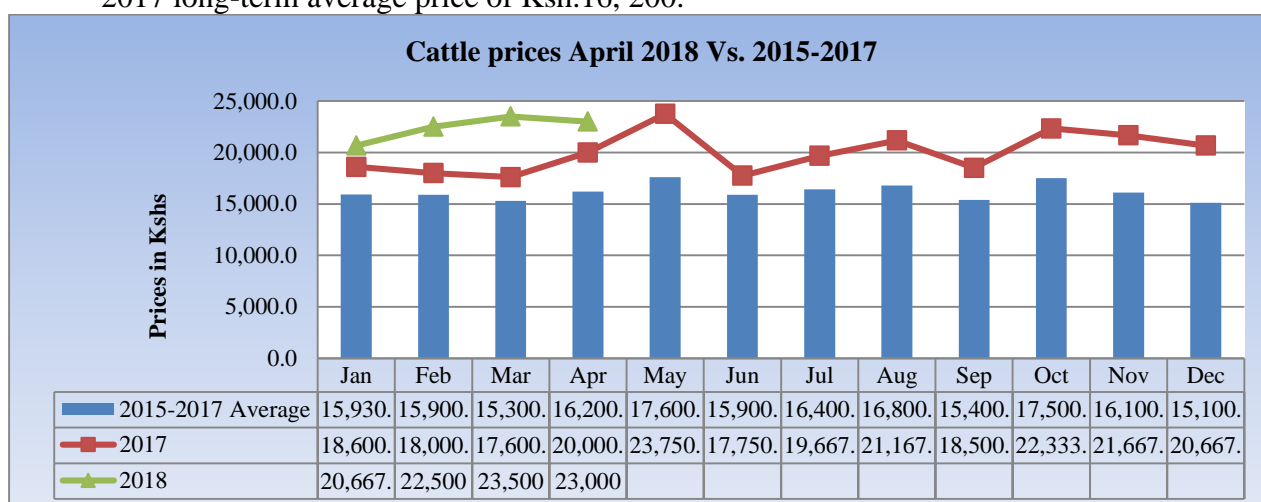


Figure 2: Cattle prices

4.1.2 Small Ruminants Prices

4.1.3 Goat Prices

- Goat prices for medium size animal increased from Kshs 4,750 for the month of March to Kshs 4,875 in April as shown in figure 13 below. This increase in price of goats could be attributed to good performance of the long rainfall during month and high market demands.
- The goat average market prices were distributed as follows: Mpeketoni Kshs 3,500, Witu Kshs 5,000 Kiunga Kshs 6,000 and Mokowe Kshs 5,000 respectively.
- The long-term average goat price for the month of April was Kshs. 3,300 which was lower than the current average price for the month of April.

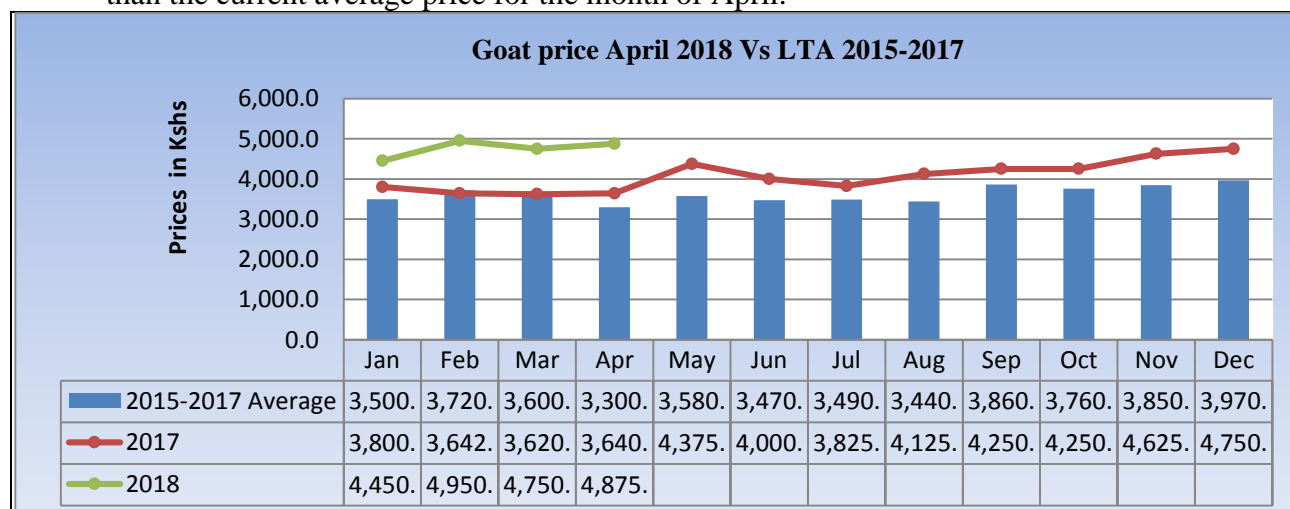


Figure 3: Goat prices

4.2 Crop prices

4.2.1 Maize price

- Average price of a Kg of maize in the Month of April was Kshs 44.0/Kg which was an increase from Kshs 40 during the previous month as shown in figure 14 below.
- The prices were distributed as follows: Hindi centre Kshs 50, Patte Kshs 30, Witu Kshs 40, 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 April was higher when compared with the long term-average price of Kshs 41.

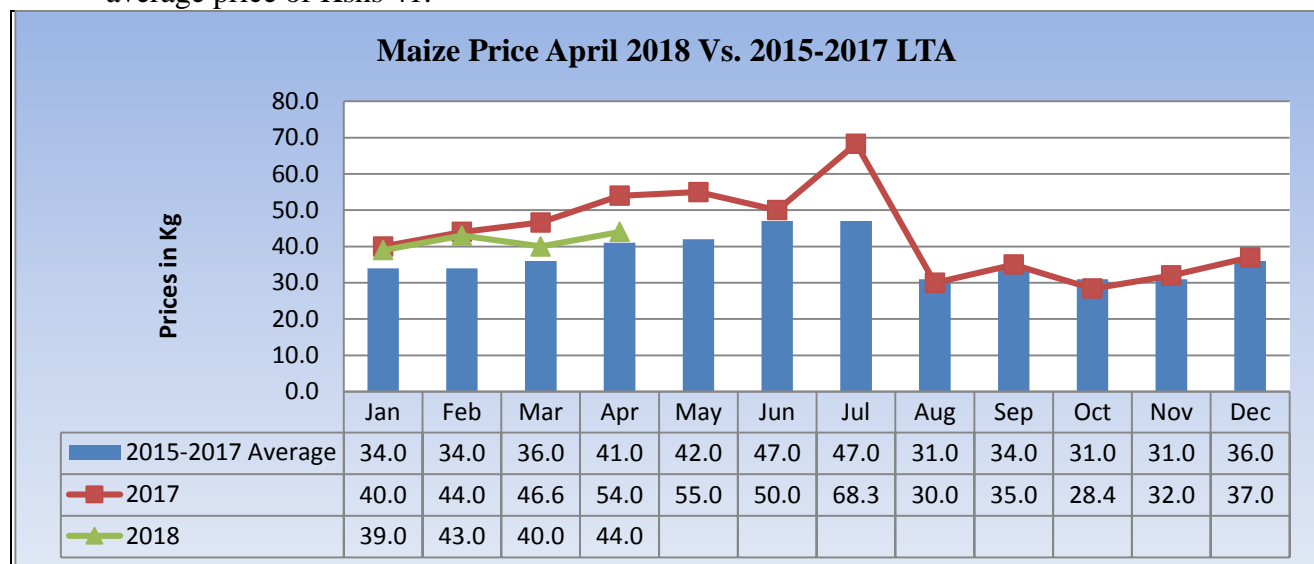


Figure 4: Maize prices

4.2.2 Beans

- Average price of Kg of beans was Kshs 100 in March, a slight decreased compared to the previous month as in figure 15 below.
- The beans price was distributed as follows: Mswakini centre 100, Patte Kshs 100 and Witu Kshs 100, Mpeketoni Kshs 80 and Kiunga Kshs 120 respectively. However price ranges is determined by commodity supply in the different markets.
- The long-term average price of beans was Kshs 100 which remained stable compared to the current beans price for the month of April.

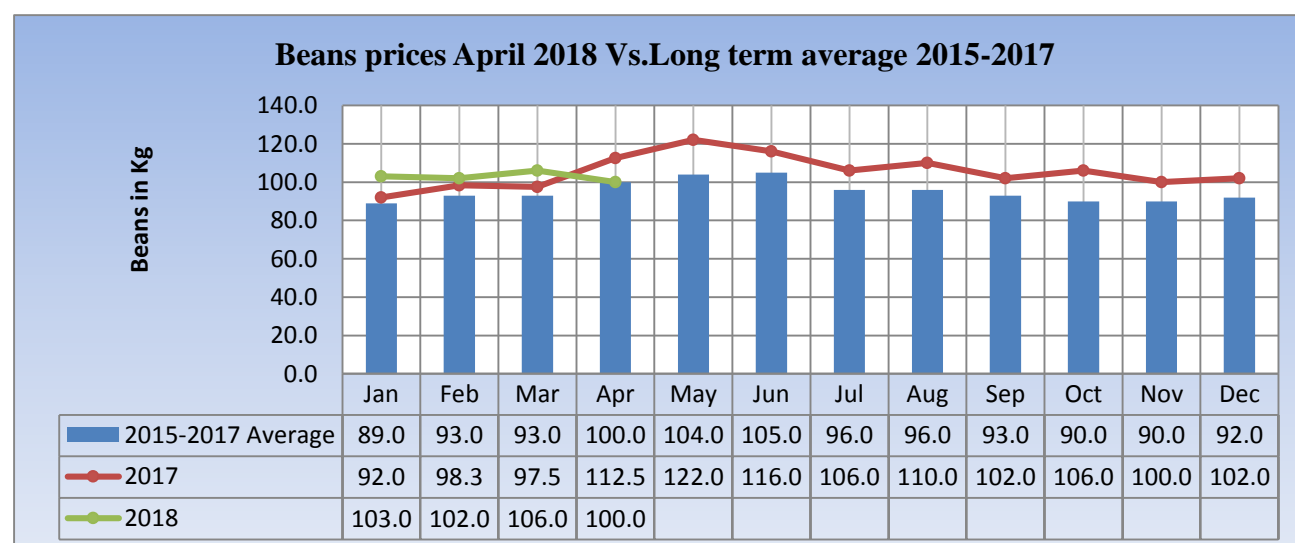


Figure 5: Beans prices

4.3 Livestock Price ratio/Terms of Trade

- The average Term of Trade (ToT) for the month of April was 111.4kg, slight decrease compared to 119Kg during the previous month as in figure 16 below.
- Sale of a medium goat in April would cost a household about 111.4 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 108Kg in Lamu West and 120Kg in Lamu East. The ToT for April was higher than the long term average of 84Kg.

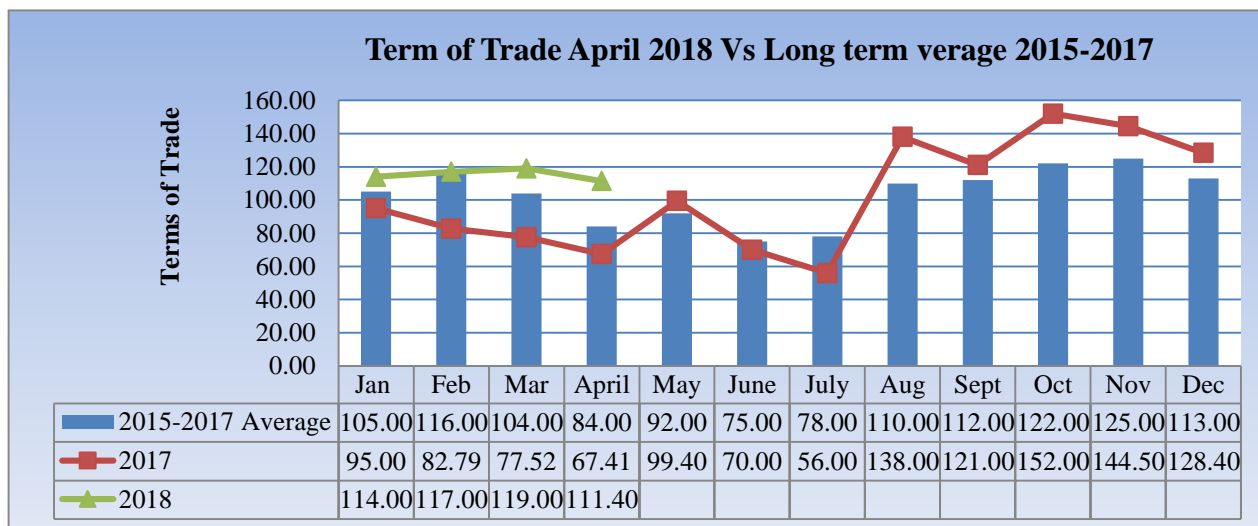


Figure 6: Terms of Trade

4.4 Implication on food security

- The good body condition of livestock have increased livestock prices especially 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 low supply of the commodity to the markets from short rains harvests stored at households.
- 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 less 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 1.5litres in the month of April which is an increased slightly compared to 1.1 litres during the previous month as in figure 17 below.
- The increase in milk consumption level is as a result of fluctuating production attributed to the forage and decreasing livestock trekking distances to water points.
- April long term average milk consumption of 0.60 litres which was lower than the current average of milk consumption per household.

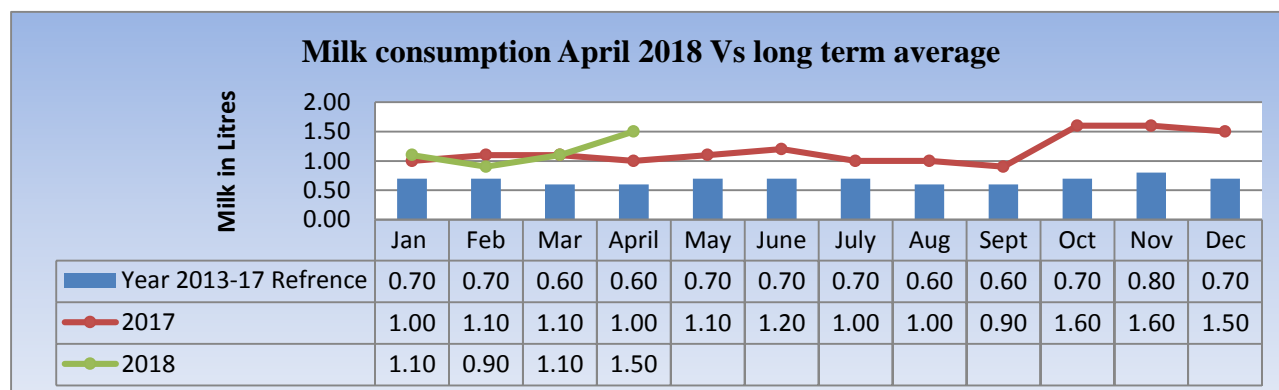


Figure 7: Milk production

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 5.0 percent in April a decrease from 5.3 in March indicating improving situation. This decrease was attributed to increased milk production and consumption.
- The rates of Malnutrition cases are decreasing in the Agro pastoral and Mixed farming Zones of Witu, Hindi and Basuba ward.
- This figure of 5.0 percent MUAC for April was stable compared to long term average of 5.0 percent as in figure 18 below.

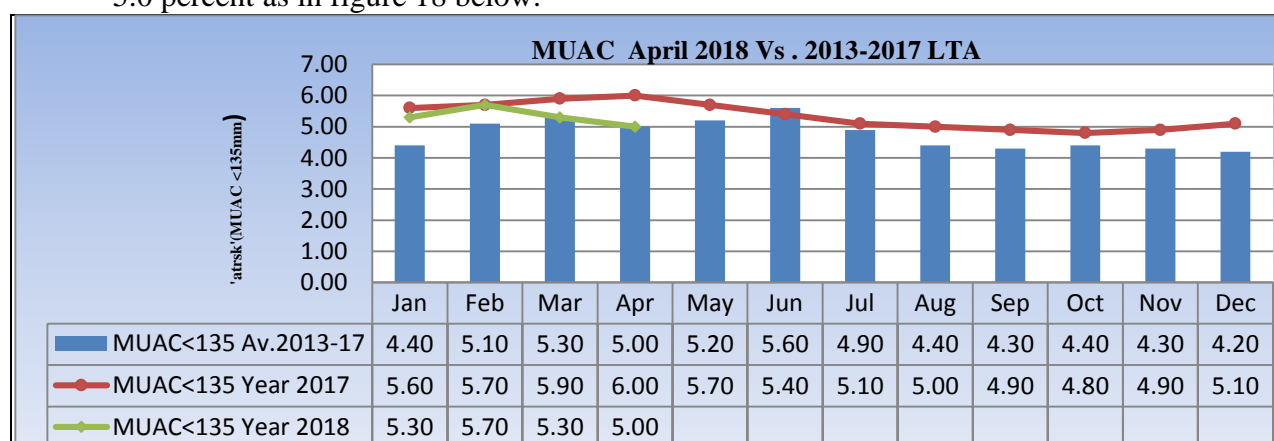


Figure 8: MUAC

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)

- Mixing Farming and Agro pastoral livelihood zone had the highest number of Households with poor dietary diversity at 5 and 3.3 respectively.

- Acceptable food consumption was noted in Agro pastoral and fishing /Mangrove zone with 80 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 from 10 to 5 percent in April in Mixed Farming and 3.3percent in Agro Pastoral livelihood zones as figure 19 below.

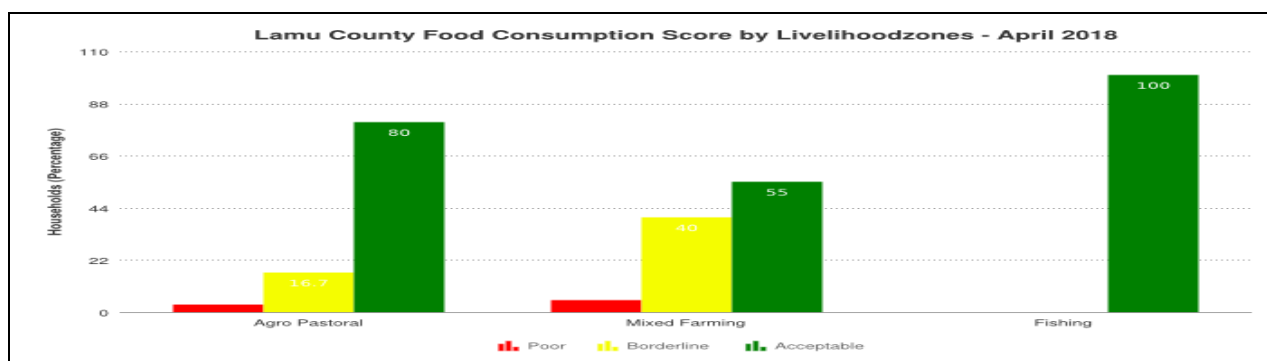


Figure 9: Food consumption score (FCS)

5.4 Coping strategy index

- The mean coping strategy Index in the Month of April decreased to 7.87 from 9.02 in March, indicating increased coping strategies at household level.
- Agro pastoral Zone had CSI of 5.9; Mixed Farming livelihood zone had 7 while Fishing Livelihood zone had a copying strategy index of 13.5 as figure 20 below.
- Common coping strategies employed by food insecure households in the month of April were:
 - ✓ Opting for less preferred or cheaper meals.
 - ✓ Reduction in the number of meals.
 - ✓ Purchase on credit/remittances from relatives.
 - ✓ Borrow food from friends or relatives.

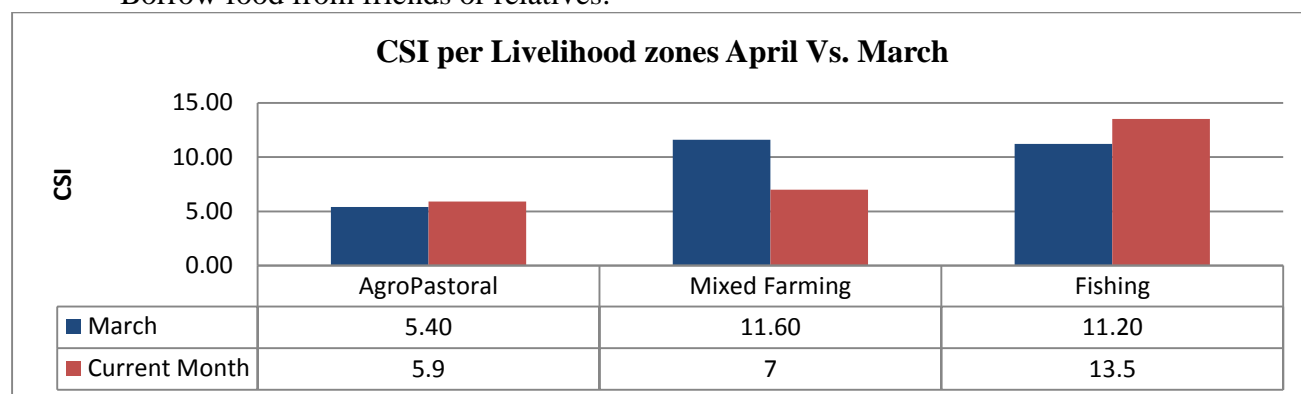


Figure 10: Coping strategy index (CSI)

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.
- The slight decrease in the percentage of children below age of five, who are both at risk of malnutrition, have improved during the month in areas of Agro pastoral Zones of Witu, and Mixed farming of Mpeketoni wards respectively.

6.0 CURRENT INTERVENTION MEASURES (ACTION)

6.1 Food and Non-food interventions

6.2 Drought Response Interventions

- Kenya Red cross have distributed food especially Rice, sugar, salt, beans, vegetable Oil and Tea leaves. And also Non food items such as pesticides and fertilizers to 512 households in Boni area.
- The County commissioners' Office is planning to distribute relief food e.g. 1000 bags of Rice.
- RPLRP is also planning to carry out restocking of ruminants in affected areas.

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

- The long rains season (MAM) will be above average in terms of performance.
- Households will continue employing consumption related coping strategies.
- Markets will continue to operate normally despite poor infrastructure.
- The improving livestock body condition will increase the purchasing power of farmers to access commodities in the markets hence improve food insecurity at household level.
- Nutrition cases are expected to improve.
- Term of trade is expected to decline due to increase in goat prices.
- Water availability and accessibility situation is expected to improve for both domestics and livestock due to ongoing rains.
- Browse and pasture condition will continue improving and hence stabilize livestock body conditions, production and prices in coming months. Food prices are expected to increase.
- The April 3-Month Vegetation Condition Index indicating Normal greenness for the entire County and hence on improving trend.

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 of water pans and dams for preparedness.
- Conducting of hydro geological survey and drilling of boreholes.

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 the long rains.
- Provision of hay band machines for harvesting.
- Provision of storage facilities for Animal feeds.
- Promote livestock insurance services.

Agriculture

- Provision of relief seeds, fertilizers and subsidized tractor services for crop farmers.
- 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.

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.