

**National Drought Management Authority
LAMU COUNTY
DROUGHT EARLY WARNING BULLETIN FOR JULY 2017**



A Vision 2030 Flagship Project



JULY 2017 EW PHASE

Drought Status: **NORMAL**



Shughuli za kawaida

Drought Situation & EW Phase Classification

Biophysical Indicators

- Off seasonal rainfall was experienced in the month of July.
- The vegetation condition Index VCI-3Month) was 50.86 in the month of July from 25.31 in June which is normal.
- The VCI indicated vegetation condition showed greenness above normal. The situation is improving the overall drought stage in the county was at normal in July.

Socio Economic Indicators

Production indicators

- The body condition for cattle was good and for goats was better because of improved pasture and browse.
- Milk production decreased from 2.6litres in June to 1.8litres in July.

Access indicators

- The average Term of Trade decreased for the month of July was 56 compared to 70 in June.
- Average return household watering distance increased from 1.6Km in June to 8 Km in July due to below normal rainfall.
- Milk consumption in July was still low at 1 litre lower than the long term Average.

Utilization indicators

- The proportion of children at risk of malnutrition decreased from 5.4 percent in June to 5.1 percent in July which was slightly lower than the long-term mean of 5.2 percent.
- The average coping strategy Index was 6.63 in July, an increase from 6.46 in June.

Early Warning (EW) Phase Classification

LIVELIHOOD ZONE	EW PHASE	TRENDS
Agro pastoral/Fishing	Normal	Stable
Irrigated cropping	Normal	Stable
Fisheries /Mangroves	Normal	Stable
Farming Casual Labour	Normal	Stable
Agro pastoral	Normal	Stable
County	Normal	Stable
Biophysical Indicators	Value	Normal
Rainfall Amount(mm)	16mm	80-120
VCI	50.86	35 to 50
Water Distance	8km	< 6.2
Production indicators	Value	Normal
Livestock Migration Pattern	Not Normal	Normal
Livestock Body Conditions	Good	Good
Livestock Death from Drought	No death	No death
Milk Production	1.8 Lts	>12.75Lts
Access Indicators	Value	Normal ranges
Terms of Trade (ToT)	56kg	89.22
Milk Consumption	1 Lts	>15.87Lts
Utilization indicators	Value	Normal
MUAC	5.1%	<5.0%

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 ▪ Increase Milking ▪ Livestock mating ▪ kidding 								
Coping Strategy Index		6.63	>56								
Jan	Feb	Mar	April	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec

1.0 CLIMATE CONDITION

1.1 RAINFALL PERFORMANCE

1.1.1 Actual Rainfall

- According to VAM WFP rainfall data, the County received an average rainfall of 16mm in the Month of July, however this was higher than the same period last year's rainfall of 12.2 mm.
- The current amount of rainfall received in July was lower than Long term average of 21mm.

Rainfall satellite data: Rainfall performance for Lamu-July 2017 Vs the long term

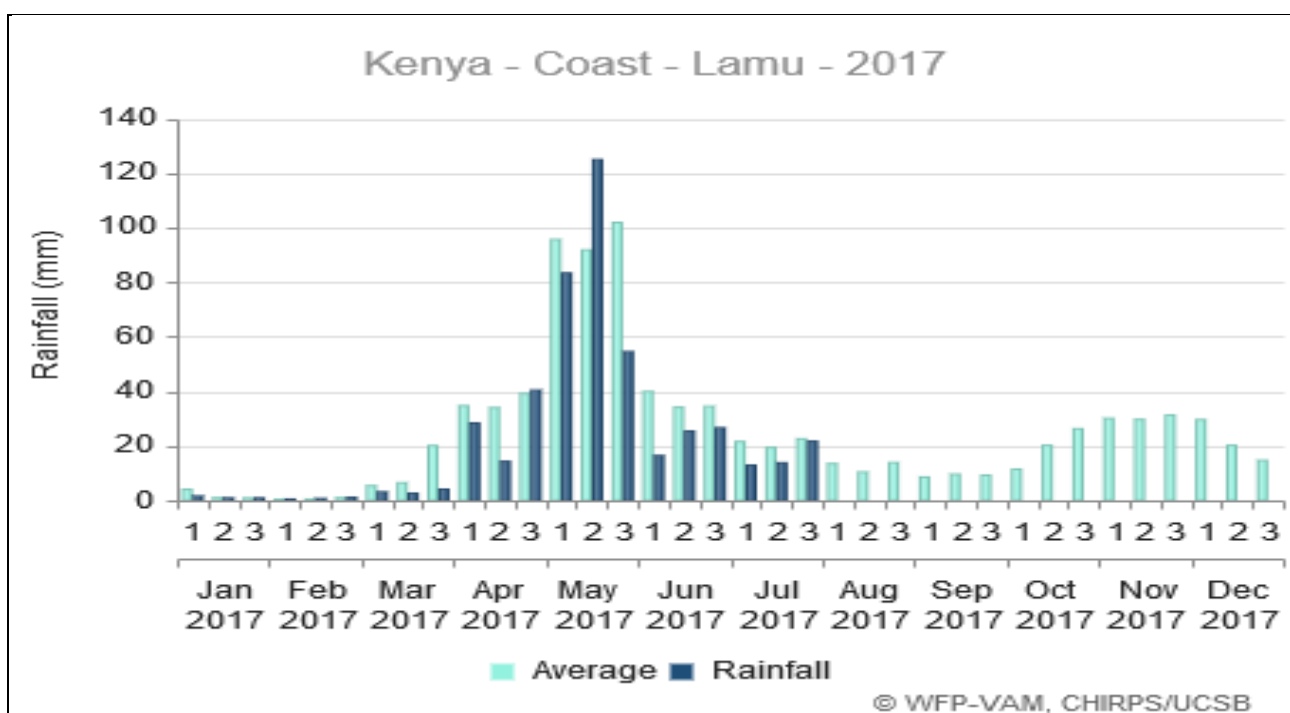


Figure1: Rainfall Performance for Lamu in July 2017. (Source: WFP-VAM)

1.1.2 SPATIAL DISTRIBUTION

- Rainfall received in the month of July across the County, reduce the impacts of drought. The below normal rainfall was received across all parts of the county.

1.1.3 TEMPORAL DISTRIBUTION

- The month was characterized by insignificant showers which were unevenly distributed in the County.

2.0 IMPACTS ON VEGETATION AND WATER

2.1 Vegetation Condition

2.1.1 Vegetation Condition Index (VCI)

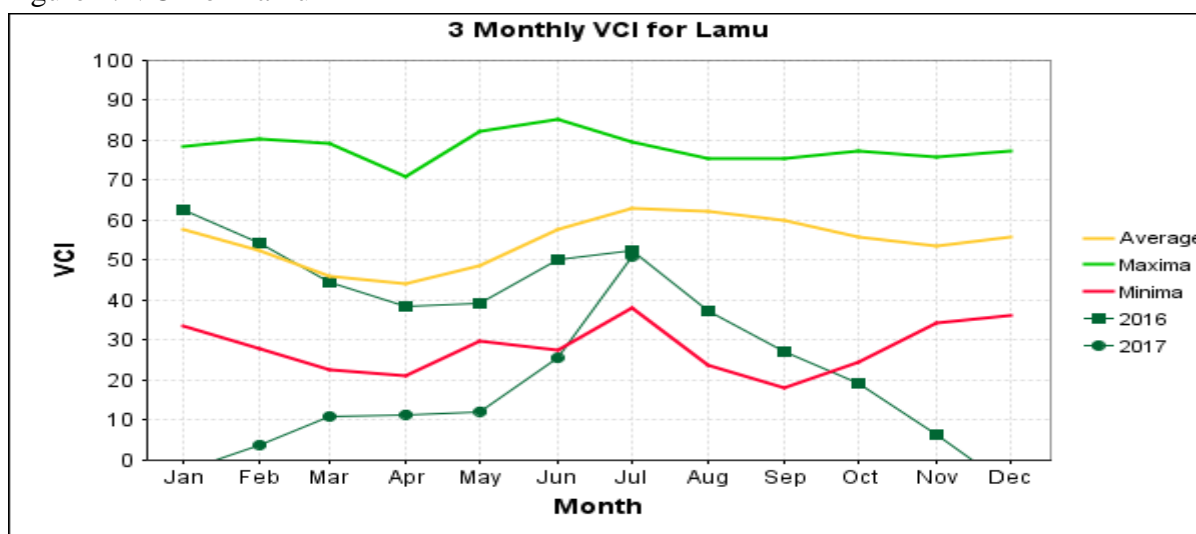
- The vegetation condition for the month of July is 50.86 for the County which is normal compared to the previous July of the same period and the vegetation condition is improving.
- The VCI indicated vegetation greenness above normal both in Lamu East and West Sub-Counties as shown by the VCI table below.

July 2017 VCI (3M) Table

ADMINISTRATIVE UNITS		VCI as at 30 th June 2017	VCI as at 31 st July 2017
County	Sub County		
LAMU	County	25.31	50.86
	Lamu East	27.93	50.16
	Lamu West	23.78	51.27

Figures Below show three month Vegetation Condition Index (VCI) matrix for Lamu County {Source: Boku University, Austria}

Figure 2: VCI for Lamu



NDVI for Lamu

- NDVI slight changed from the previous month of June that indicated 0.73 in July shows a reduction from the previous Month of June of 0.75, however this was higher than the Long term average of 0.71.
- The vegetation index(NDVI) is on decline .

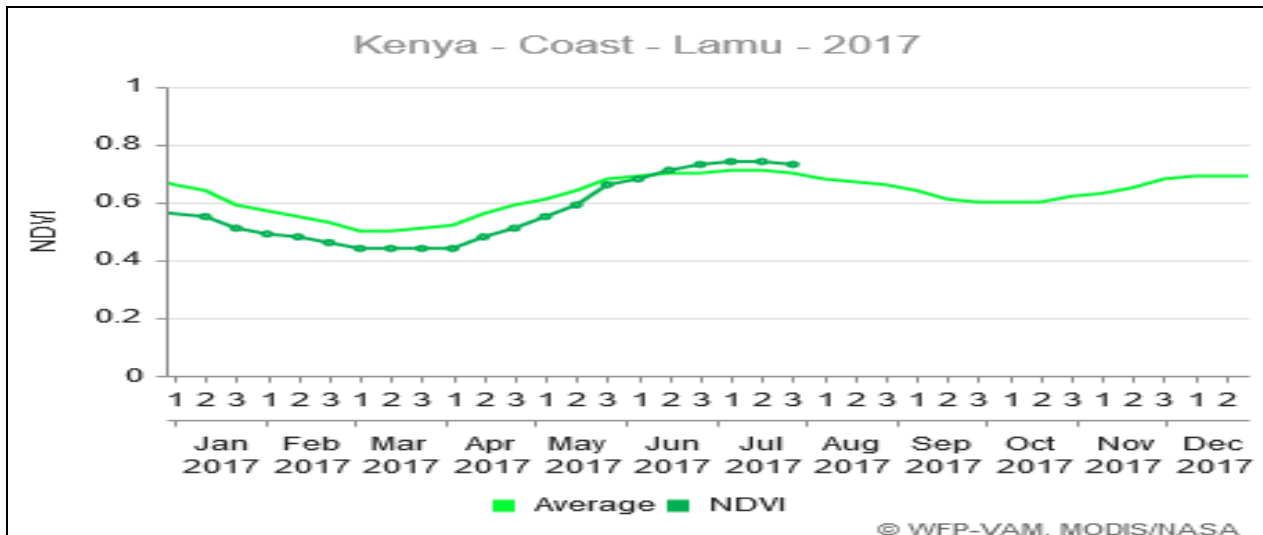
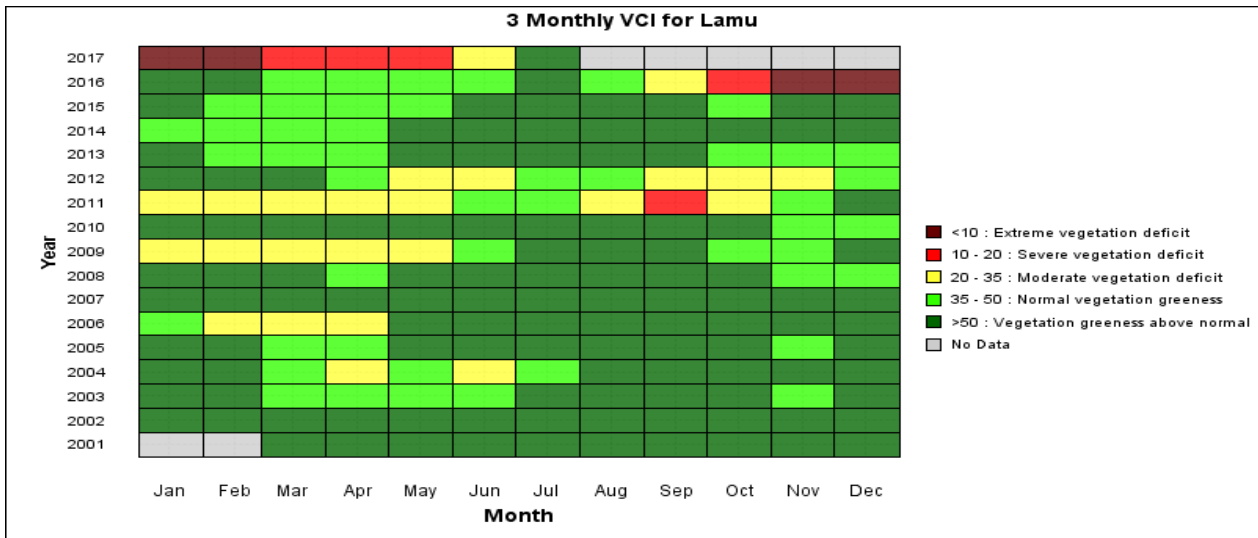


Figure 3: NDVI for Lamu in the month of July 2017. (Source: WFP-VAM)

Figure 4: VCI for Lamu County



OBSERVATIONS

Pasture and Browse Conditions

2.1.2 Pasture

- Pasture condition was good across all livelihood zones and improving in both quality and Quantity. The available pasture is expected to last for two Month due the huge influx of livestock from neighboring counties of Tana River and Garissa.

2.1.3 Browse

- The quantity and quality of browse was good across all livelihood zones for the month of July but the browse condition continued to improve from that of the previous month. The available browse amount is normal compared to a normal year and the situation is improving. The browse is expected to last for two to three months.

HYDROLOGICAL DROUGHT

2.2 Water Sources and Availability

2.2.1 Main water sources

- State of water sources in the County was good across most livelihood zones but the condition is still improving.

- The main water sources in the month of July were: Natural ponds- 25percent, Shallow wells – 25percent, Pans and dams-8.3percent, Traditional water well at 8.3percent and piped water system at 16.7 percent.

Sources of water for Lamu County, July 2017.

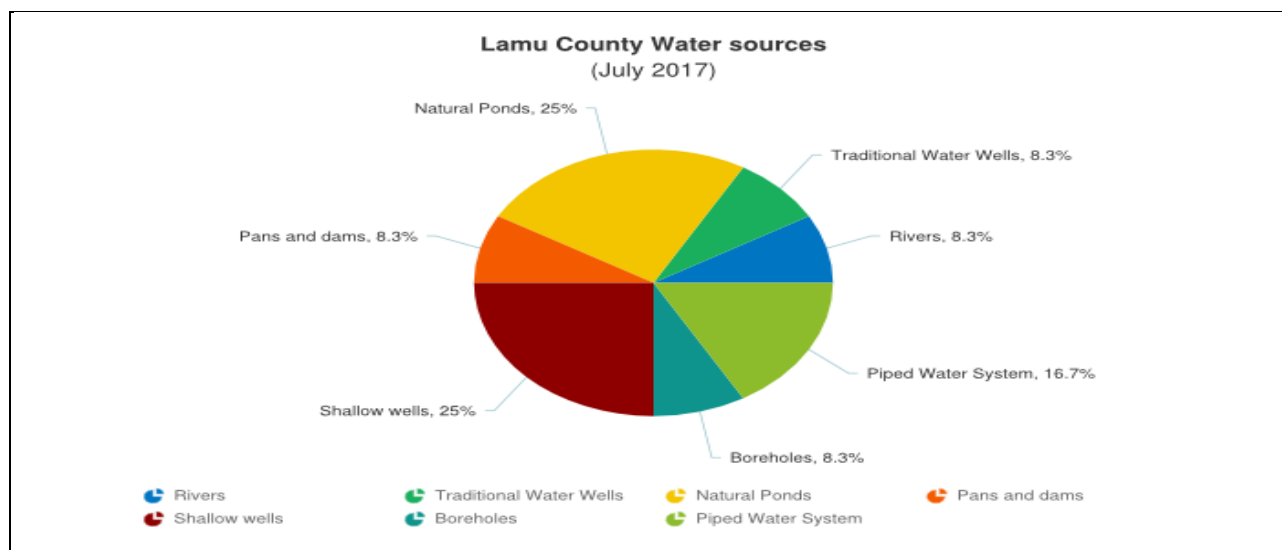


Figure 5: Main sources of water

2.2.2 Availability of water for household consumption

- Average Household watering return distance was 8Km in July from 2Km in June. This was due to decrease in rainfall amount which led to decrease in water surface levels.
- Household Return Water distances per livelihood zone were as follows: The Agro pastoral - 8Km, Fishing & Mangrove Harvesting 5Km, Mixed Farming Zone was 2 Km, casual labour 2Km and irrigated farming 4Km.
- The 2012-2016 average household water distances for July was 1.5 Kilometers which was lower than the current average household watering distance for July. This shows that the current average household water distance for July was above the long term average.

Average House Hold Water Distance July 2017 vs. Long Term 2012-2016

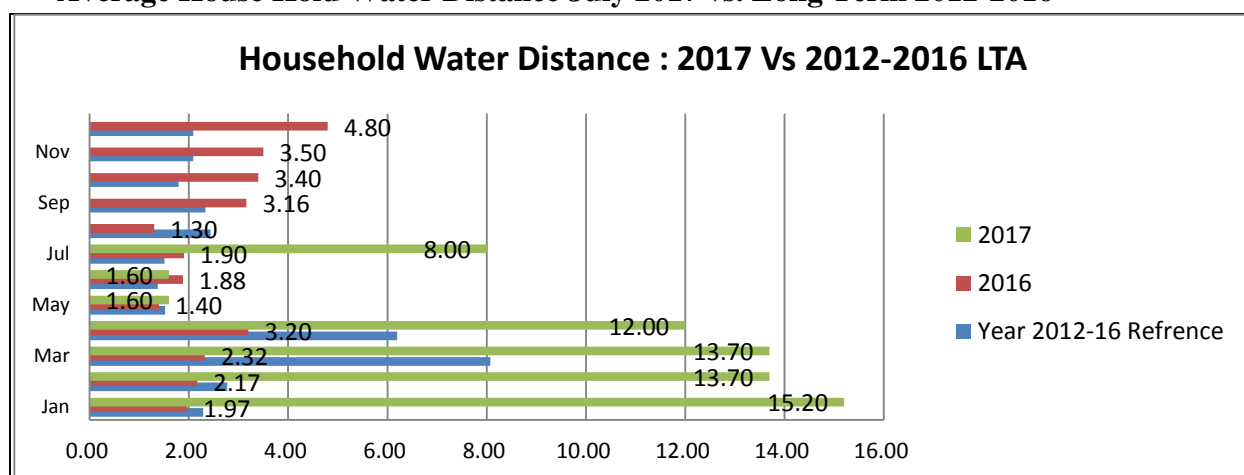


Figure 6: House hold water distance

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2.2.3 Livestock access to Water

- Livestock average distance to water source from grazing Area was 2 kilometres in the month of July from 2.4 kilometres in the month of June. This decrease from last month's

distance was due to the ongoing rains which led to improvement in browse and pasture near to water sources.

- The current average grazing water distance for July of 2 Km was lower than the year 2012-2016 long-term average of 3.08 Kilometers.

Water Source from Grazing Area July 2017 in Kilometers vs. Long Term 2012-2016

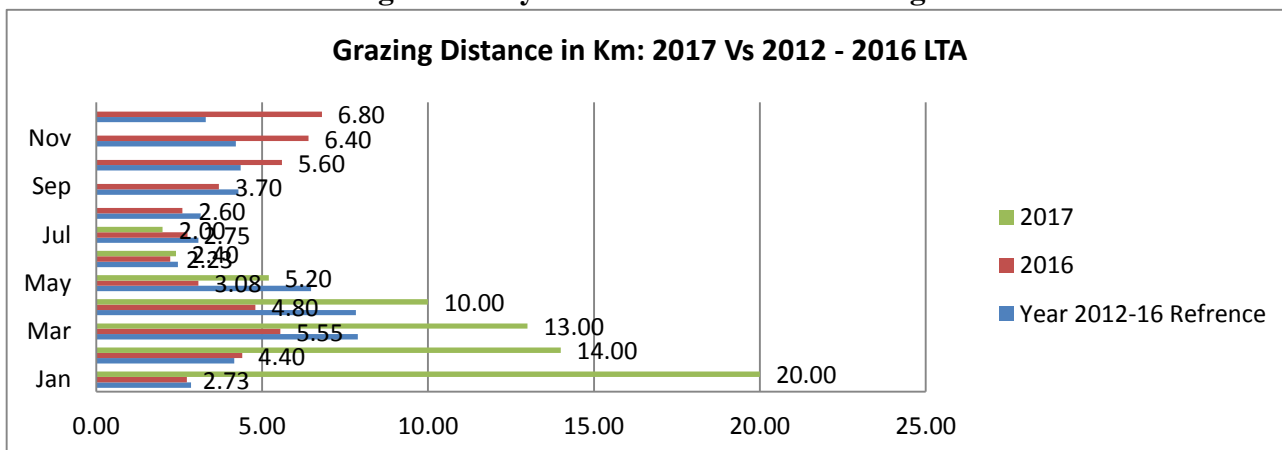


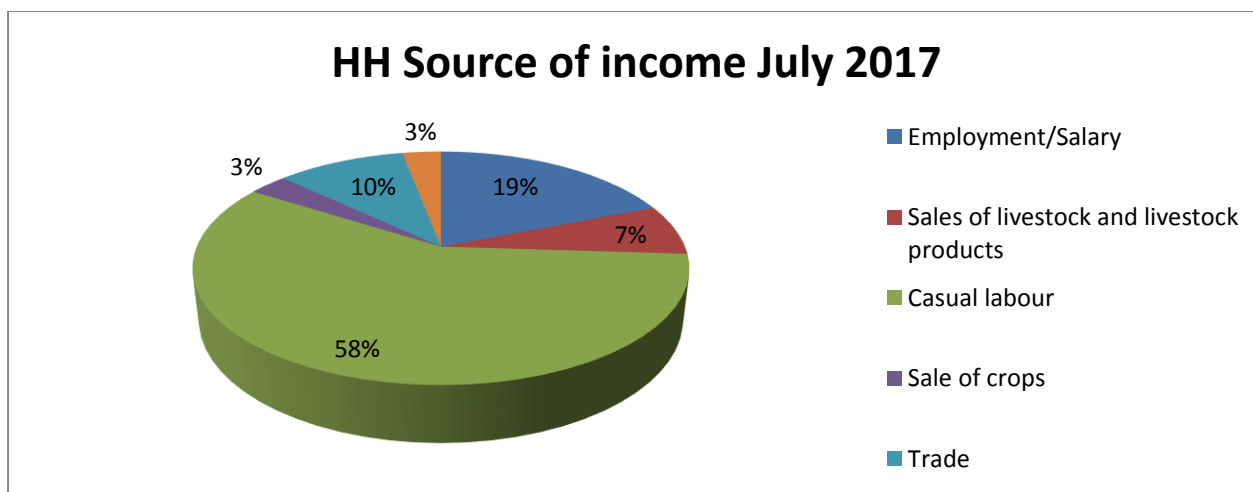
Figure 7: Grazing Distance-Km

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2.3 Household Income

The main household income for the month of July was as follows: Employment/Salary 19percent, sale of Livestock/Livestock products 7percent, Casual labour 58percent, trade 10percent, Sales of crops 3percent, and others 3percent.

Figure 8: HH Sources of income



2.4 Implication on Food Security

- The prevailing long rain has led to recharging of water sources leading to improvement of pasture, browse and increased access to water for livestock.
- The decreases in distances to water sources have had a positive impact on the body condition of animals and household hygiene standards.
- Refilled water sources like boreholes, Rivers and Lakes in the Pastoral and Fishing and Mangrove zones which are the main water sources to communities living in the area have improved especially in Kizingitini, Pangani, Mangai and Lake Kenyatta.

3.0 PRODUCTION INDICATORS

3.1 Livestock Production

3.1.1 Livestock Migration Patterns

- There were huge influx of Livestock migration from neighboring Counties of Tana River and Garissa through Gamba and Bodhei to mixed farming/Livestock livelihood zone of Witu and Hindi wards of Lamu west Sub-county during the Month under review.

3.1.2 Livestock Body Condition

- Livestock body condition was good to fair for all species of livestock across all the livelihood zones. However, the condition is expected to improve further due of the pasture and browse.

3.1.3 Livestock Diseases

- There were no incidences of diseases except vaccination of Rift Valley Fever was ongoing during the month of July.

3.1.4 Milk Production

- Milk production decreased from 2.6 litres in June to 1.8 litres in July. This was much lower than the long-term average of 15.63 litres in July.
- Mixed farming and Fishing Livelihood Zone produced an average of about <1 litre while the Agro pastoral Zone produced average of about < 4.5 litres.

Graph of milk production for the month of July 2017 is shown in the figure below

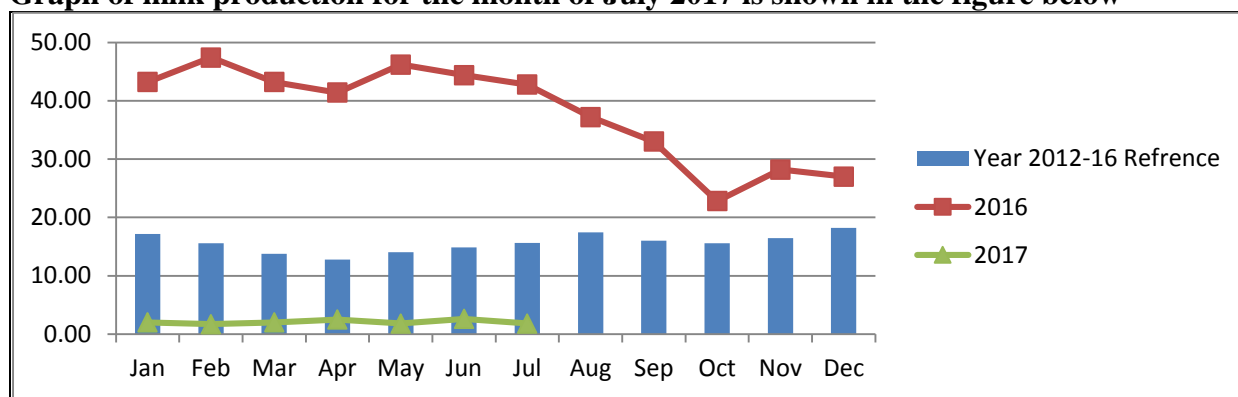


Figure 9: Milk production

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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.
- In most farms in parts of the Mixed Farming zones, maize is above knee high/flowering and podding/tussling stage. Most farmers who had planted green grams at the onset of rains are harvesting and selling.

3.3 Implications on Food Security

- The improving body condition of cattle across the livelihood zones has improved the cattle prices resulting to increased income from livestock sales.
- The influxes of livestock from neighboring Counties of Garissa and Tana River can lead to increased diseases, reduction of water level and depleted pasture and browse.

4.0 MARKET PERFORMANCE

4.1 LIVESTOCK MARKETING

4.1.1 Cattle Prices

- Average cattle market price in the month of July was Kshs 19,667 from Kshs 17,750 in June. This was increase from that of the previous month of June.
- This increase in price could be attributed to improved body condition due to improvement of both quality and quantity of pasture and browse.
- The prices were distributed as follows: Mixed Farming/Irrigation- Kshs 5,000, Fishing and Mangrove Harvesting- Kshs 25,500, Agro pastoral- Kshs 16,000, Agro pastoral/Fishing Kshs 25,000 while Mixed Farming/Casual Labour was Kshs 19,000.
- The average market cattle price for the month of July was, however higher than the 2012-2016 long-term average price of Ksh.13, 248.

Lamu County Cattle prices July 2017 Vs Long term Average 2012-2016

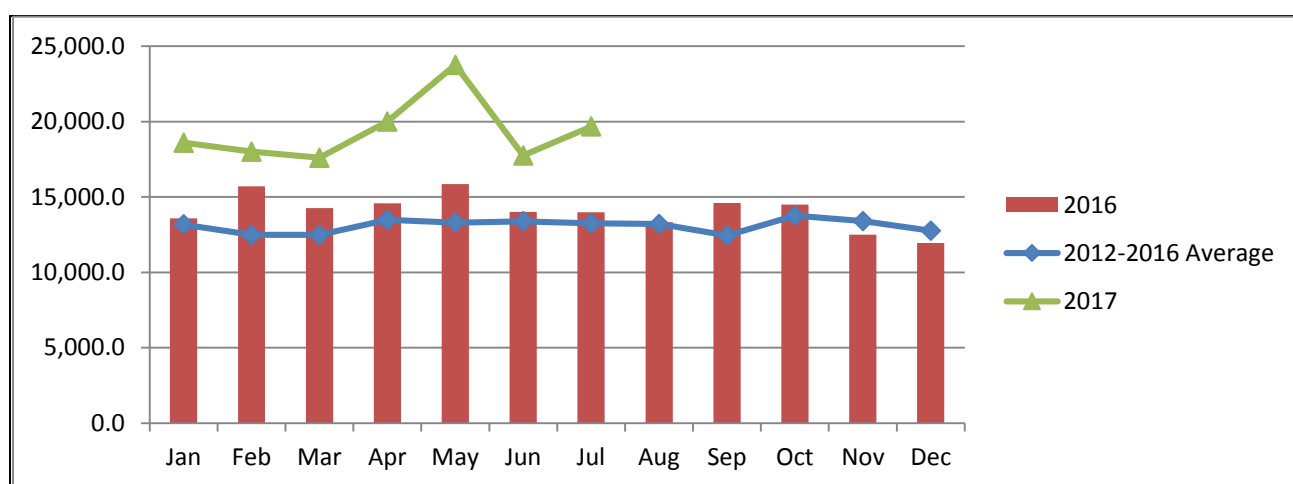


Figure 10: Cattle prices

4.1.2 Small Ruminants Prices

4.1.3 Goat Prices

- Goat prices decreased from Kshs 4,000 in June to of Kshs 3,825 in July. This decrease in price of goats could be attributed, too much supply and less market demand.
- Agro pastoral Livelihood Zone recorded price of Kshs 3,000, Fishing and Mangrove Harvesting Zone recorded Kshs 5,000 and Mixed Farming/Casual Labour Zone recorded a price of Kshs. 5,000, Mixed Farming/Irrigation recorded price of Kshs 2,900 while the price for Agro pastoral/Fishing Zone was Kshs. 4,500.
- The long-term average goat price for the month of July was Kshs. 2,976 which was lower than the current average price for the month of June.

Lamu County Goat prices July 2016 Vs. Long term Average 2012-2016

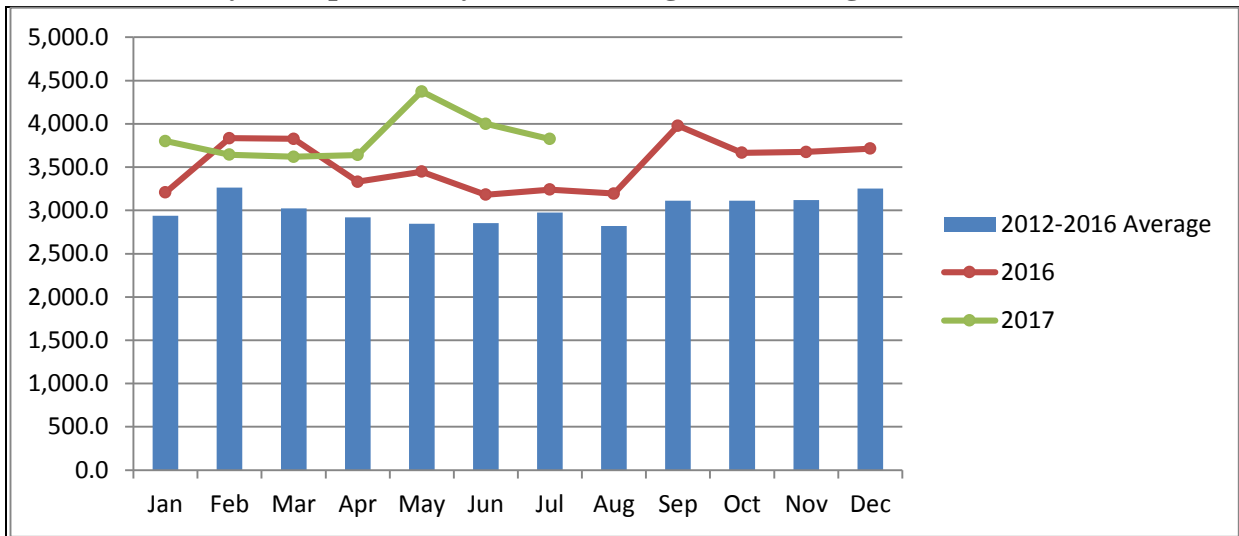


Figure 11: Goats prices

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4.2 CROP PRICES

4.2.1 Maize price

- Average price of a Kg of maize in the Month of July was Kshs 68.3/Kg an increase from Kshs. 57.5/Kg in June. The high average maize price was attributed to lower stock levels leading to higher prices.
- The prices were distributed as follows: Kshs 70 in Mixed Farming/Irrigated, Fishing/Mangrove Harvesting Kshs 45, Agro Pastoral/Fishing Zone Kshs 50, Mixed Farming/Casual Labour Kshs 55 and Kshs 35 in Agro Pastoral Livelihood zone.
- The average price of maize in July was higher than the long term-average price of Kshs 38.

Maize prices July 2017 Vs. Long term Average 2012-2016

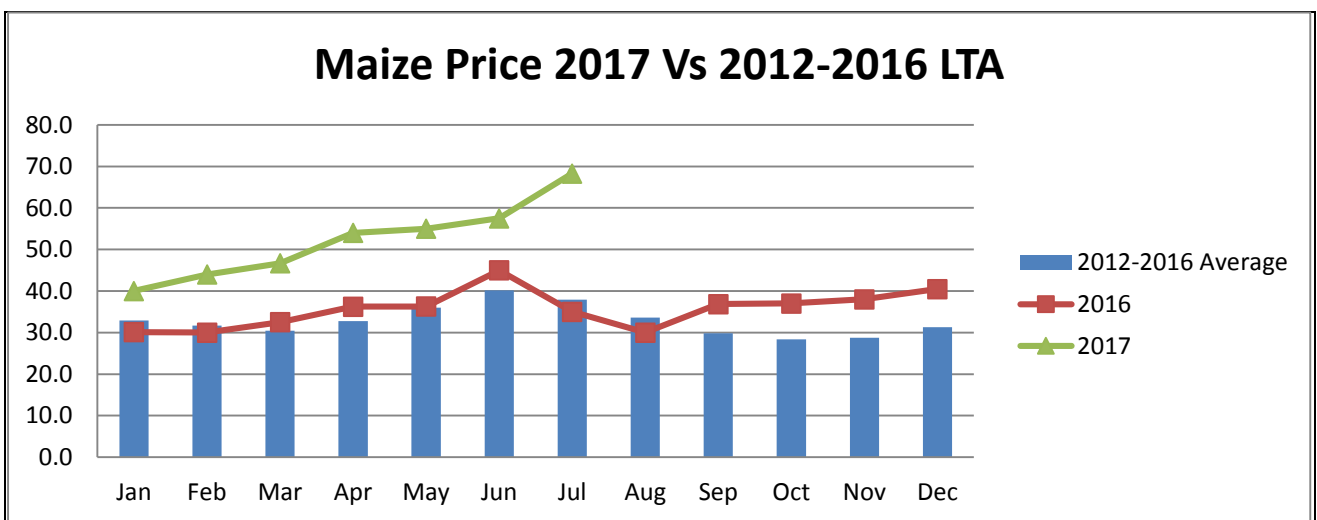


Figure 12: Maize prices

4.2.2 Beans

- Average price of Kg of beans decreased slightly from Kshs. 116 in June to Kshs.106 in July. This decrease in price was due to improved food stocks.
- The beans price was distributed as follows: Kshs 90 in Mixed Farming/Irrigation, Agro pastoral/Fishing Kshs 110, Mixed Farming/Casual Kshs 90, and Agro pastoral Kshs115 and in Fishing/Mangrove Harvesting Livelihood Zone Kshs 150.

- The long-term average price of beans was Kshs. 89.1 which was lower than the current average beans price for the month of July.

Average Beans prices July 2017 by Markets vs. Long Term 2012-2016

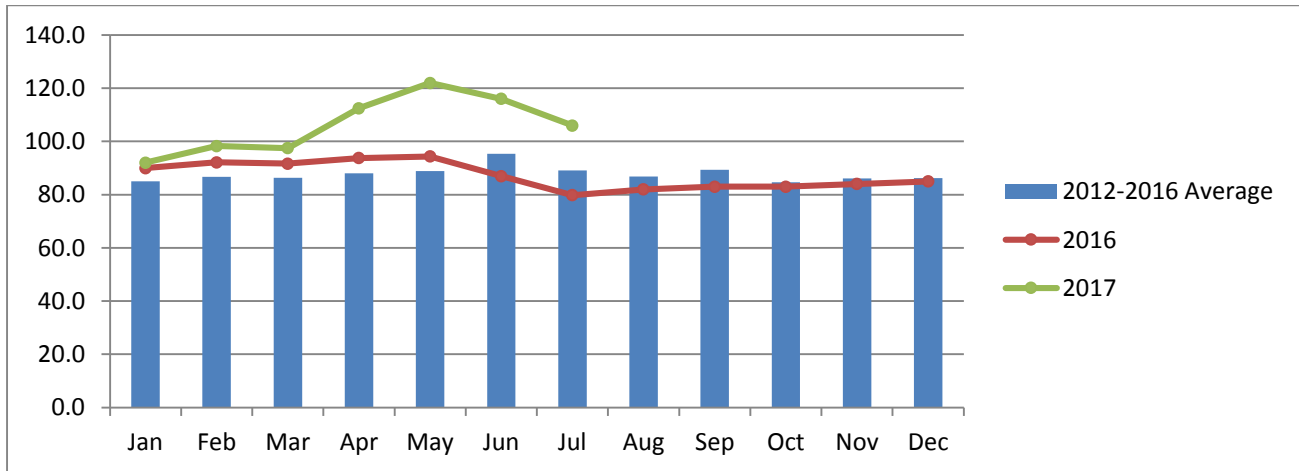


Figure 13: Beans prices

Livestock Price ratio/Terms of Trade

- The average Term of Trade (ToT) for the month of July was 56kg decrease from 70kg in the month of June. Sale of a goat in July would afford a household about 56 kg of maize. This showed the exchange ratio reduced in favour of maize sellers to Livestock farmers. These increase indicated an increase in maize price in relation to goat price.
- The ToT was 55.1 in Lamu West and 38.2 in Lamu East. The ToT for July was lower than the 2012-2016 LTA of 78.52.

Term of Trade in July 2017 vs. Long term Average

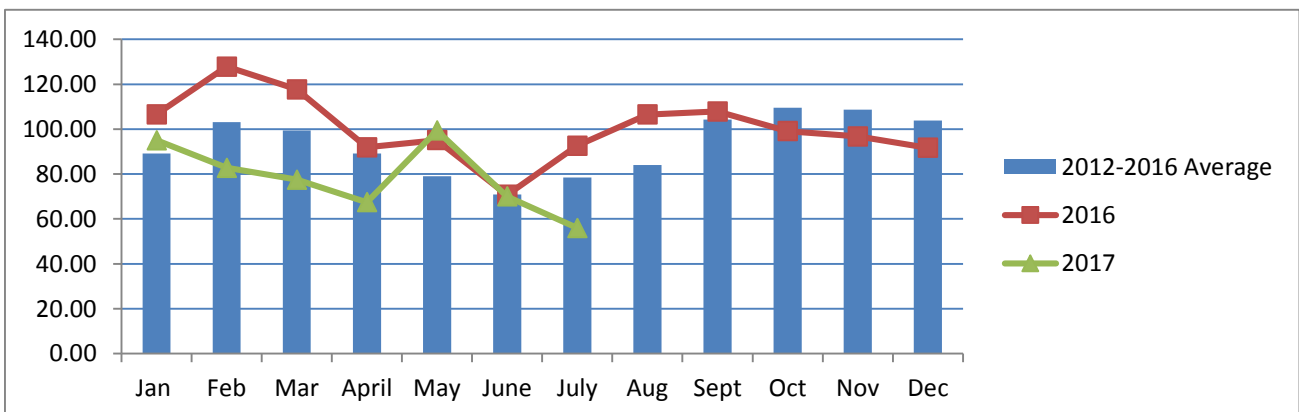


Figure 14: Terms of Trade

4.4 IMPLICATION ON FOOD SECURITY

- The improving body condition of livestock haven't improved livestock prices specially goats and therefore livestock keepers are unable to get better value for their livestock contributing to food insecurity in Agro pastoral zones .
- Maize prices are still unstable and high, with the sudden price increase from May- July period. This means that access to cereals is minimal hence leading to food insecurity at household level in Mixed farming and Agro pastoral livelihood zones.
- The terms of trade favors maize sellers than livestock farmers due increasing price of maize.

5.0 FOOD CONSUMPTION AND NUTRITION STATUS

5.1 Milk for Household Consumption

- Milk Consumption was 1.0 litre in the month of July from 1.2 litres in June. This decrease was due to low milk production in the County.
- July long term average milk consumption of 18.42 litres was much higher than the current average of milk consumption.

Household Milk Consumption 2017 Average vs. Long Term Average 2012-2016

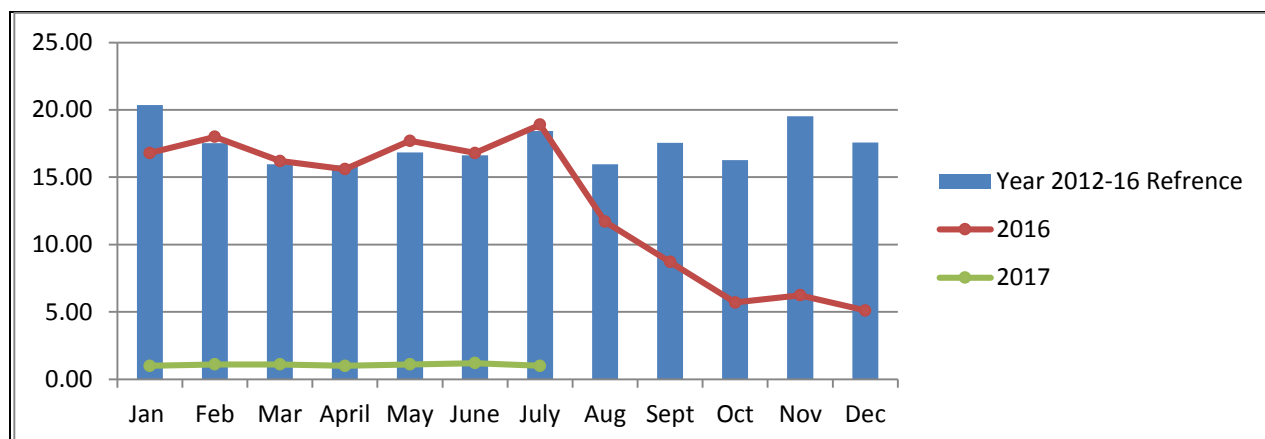


Figure 15: Milk Consumption

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5.2 HEALTH AND NUTRITION STATUS

5.2.1 MUAC

- The percentage of children aged between 6 months and 5yrs in the County with mid upper arm circumference of less than 135 mm decreased from 5.4 percent in June to 5.1 percent in July. This decrease in MUAC percentage for children could be attributed to increased interventions such as cash transfers programs and provision of CBS by Red cross which have increased access to food hence decreasing the rate of malnutrition levels amongst the children.
- This figure of 5.1 percent MUAC for July has improved compared to the year 2012-2016 long term average of 5.4 percent.

MUAC<135 mm % July 2017 vs. 2012- 2016 Long Term Average

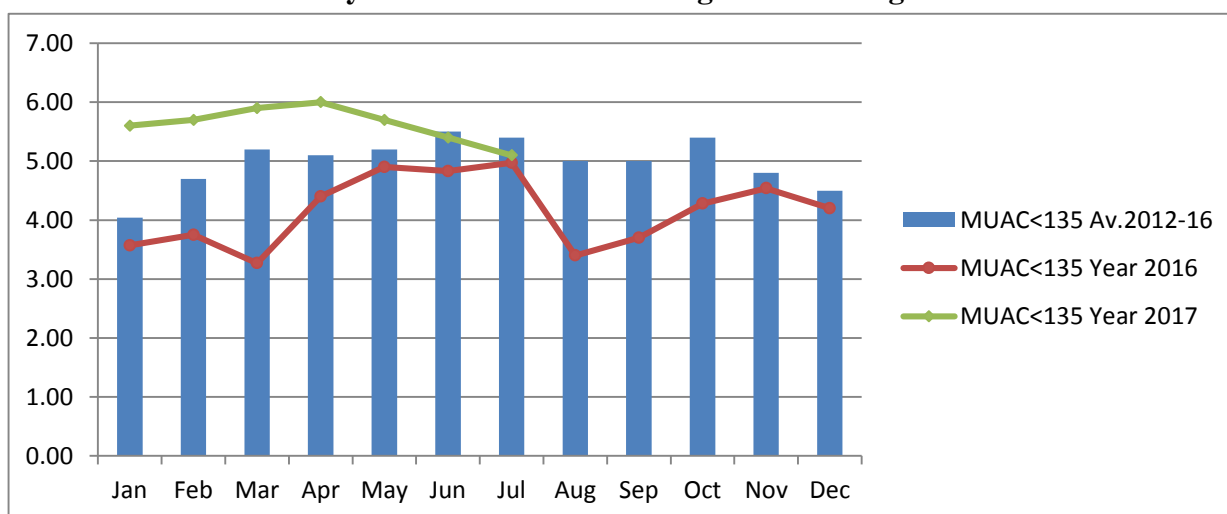


Figure 16: MUAC

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5.2.2 Health

- There were no cases of major disease outbreak both for children and general population in the County.
- However, the rates of Malnutrition are still high in the Agro pastoral Zones of Witu such as Sedemke, Njima, Pandanguo, Didewaride, and Chalaluma areas.

5.3 FOOD CONSUMPTION SCORE (FCS)

- Agro pastoral and Mixed Farming livelihood zone had the highest number of Households with poor dietary diversity at 81.7 and 25 percent and 13.58 percent borderline respectively.
- Households' percentage with poor FCS increased significantly from 51.7 June in Agro pastoral Zone to 81.7 in July.

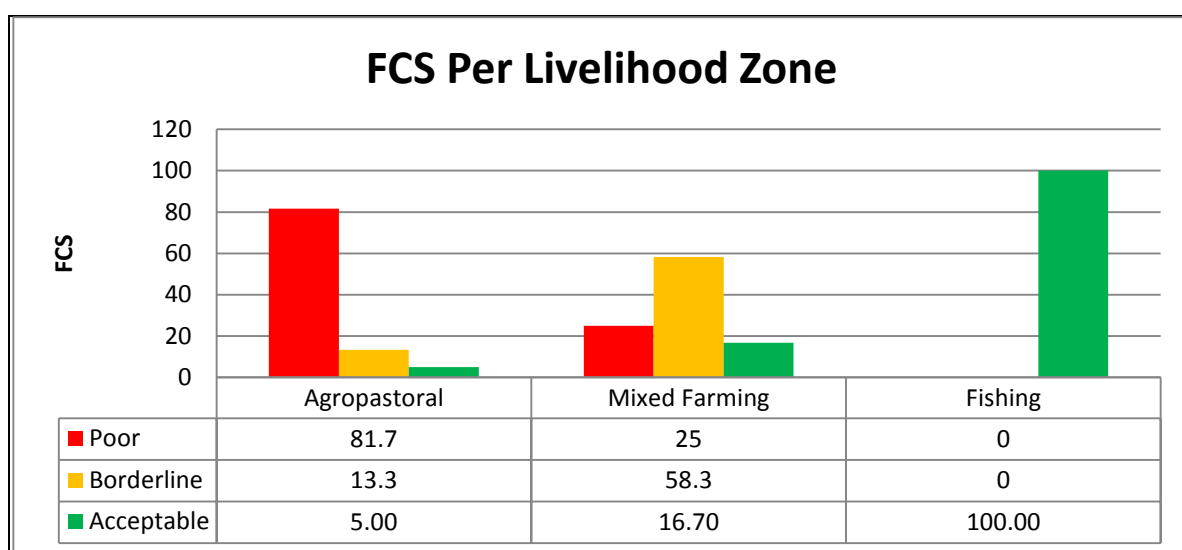


Figure 17: Food Consumption Score (FCS)

5.4 COPING STRATEGY INDEX

- The mean coping strategy Index in the Month of July slightly increased to 6.63 from 6.46 in June indicating increased coping strategies at household level.
- Agro pastoral Zone had CSI of 4.8; Mixed Farming livelihood zone had 8.1 while Fishing Livelihood zone had a coping strategy index of 7.
- Common coping strategies employed by food insecure households in the month of July were:
 - ✓ Opting for less preferred or cheaper meals.
 - ✓ Reduced quantity of food consumed by adults to ensure children to eat.
 - ✓ Reduction in the number of meals.
 - ✓ Purchase on credit/remittances from relatives.
 - ✓ Borrow food from friends or relatives.

Lamu County Coping Strategies Index for July 2017 vs. the Month of June 2017

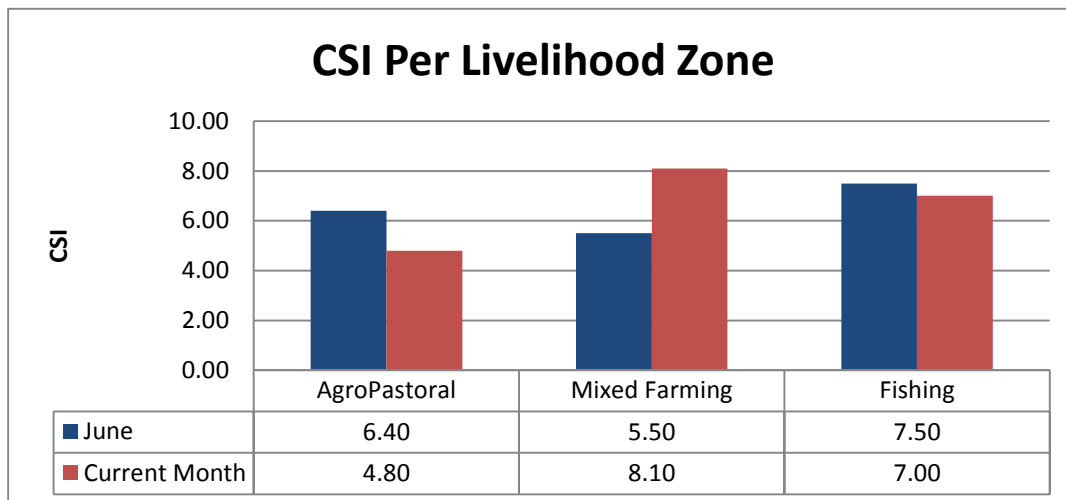


Figure 18: Coping strategies Index

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 security.
- The increase in the percentage of children under five, who are both at risk of malnutrition, have been increasing from January-June in areas of Agro pastoral Zones of Witu such as Sedemke, Pandanguo, Katsaka Kairo, and Chalaluma areas , resulted from decreased in food security.

6.0 CURRENT INTERVENTION MEASURES (ACTION)

6.1 NON-FOOD INTERVENTIONS

6.2 Drought Response Interventions

- Kenya Red cross distributed tarpaulins, Mosquito nets, blankets, bar soaps, Kitchen sets and 5400 Pur Sachets to families displaced by insecurity during the recent Al shabab attacks on police station in Pandanguo and Njima.

7.0 EMERGING ISSUES

7.1 Insecurity

- Tension is still high in Lamu County after the previous attacks by Al shabab where several lives were lost.

7.2 Migration

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

7.3 FOOD SECURITY PROGNOSIS

- The state of drought is improving in the County due near to near normal rainfall received . However, the county is in normal phase of the drought status.
- Water availability and accessibility situation has improved for households due good to fair recharge of the open water sources and Djabias at 50-75percent of their capacity.
- Availability of water and pasture will improve livestock body condition and hence reduce trekking distance, promote milk production and stabilize livestock prices.
- Nutritional status of the under-five, pregnant and lactating women is poor with several cases of Moderate Acute Malnutrition reported and expected to increase significantly as household food security remained low.
- The July 3-Month Vegetation Condition Index indicating greenness above normal for the entire County.
- Food prices expected to increase due to high demand following the low supply in the Markets/Shops.

8.0 RECOMMENDATIONS

Water

- Promotion of rain water harvesting, repair of Djabia and roof catchment areas and installation of gutters and tanks in Villages and Institutions.
- Public Health Education, promotion of Hygiene and sanitation and provision and distribution of aqua tabs.
- Constructions of boreholes, water pans and dams for preparedness.

Livestock and Agriculture

- Accelerate completion of Nagele Livestock market and or Linkage to Livestock markets to enable accelerated destocking at alarm and emergency phases.
- Livestock disease surveillance and control to curb spread of livestock diseases as in-migration from neighboring County of Tana River and Garissa.
- Provision of Veterinary and Livestock services extension staff in the County.

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.
- Provide Food for fees for students hailing from Vulnerable and poor families.

Peace and Security Sector

- Peace and security meetings should be enhanced in the County and her neighboring counties of Tana River and Garissa.

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.