

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



A Vision 2030 Flagship Project



MAY 2017 EW PHASE

Drought Status: **ALARM**



Mipango ya kukabiliana na ukame

Drought Situation & EW Phase Classification

Biophysical Indicators

- More rainfall was experienced in the month of May.
- The vegetation condition Index VCI-3Month) was 12.06 in the month of May from 12.42 in March which is still below normal.
- The VCI indicated improving vegetation condition with a severe band deficit. The situation is improving but the overall drought stage in the county was still at Alarm in May.

Socio Economic Indicators

Production indicators

- The body condition for cattle was fair and for goats was good owing to improved pasture and browse.
- Milk production in the month of May was still lower than the long term average. Drought related livestock deaths for Cattle were still reported in the month of May but it reduced in number compared to the previous months.

Access indicators

- The average Term of Trade for the month of May was 79.55 compared to from 67.41 in April.
- Average return household watering distance decreased from 24Km in April to 1.6 Km in May due to increased rainfall.
- Milk consumption in May was still low at 1.1 litre lower than the long term Average.

Utilization indicators

- The proportion of children at risk of malnutrition decreased from 6 percent in April to 5.7 percent in May which was higher than the long-term mean of 5.2 percent.
- The average coping strategy Index was 12.6 in May, a decrease from 20.43 in April.

Early Warning (EW) Phase Classification

LIVELIHOOD ZONE	EW PHASE	TRENDS
Agro pastoral/Fishing	Alarm	Improving
Irrigated cropping	Alarm	Improving
Fisheries /Mangroves	Alarm	Improving
Farming Casual Labour	Alarm	Improving
Agro pastoral	Alarm	Improving
County	Alarm	Improving
Biophysical Indicators	Value	Normal ranges
Rainfall Amount(mm)	87.5mm	80-120
VCI	12.06	35 to 50
Water Distance	1.6	< 6.2
Production indicators	Value	Normal ranges
Livestock Migration Pattern	Not Normal	Normal
Livestock Body Conditions	Fair	Good
Livestock Death from Drought	Yes	No Death
Milk Production	1.8 Lts	>12.75Lts
Access Indicators	Value	Normal ranges
Terms of Trade (ToT)	79.55	89.22
Milk Consumption	1.1Lts	>15.87Lts
Utilization indicators	Value	Normal ranges
MUAC	5.7%	<5.1%
Coping Strategy Index	12.6	>56

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 								
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 87.5mm in the Month of May. This was higher than the same period last year of 72 mm.
- The current amount of rainfall received in May was lower than Long term average of 96.3mm. Most of the rainfall was received in the 2nd dekad of May.

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

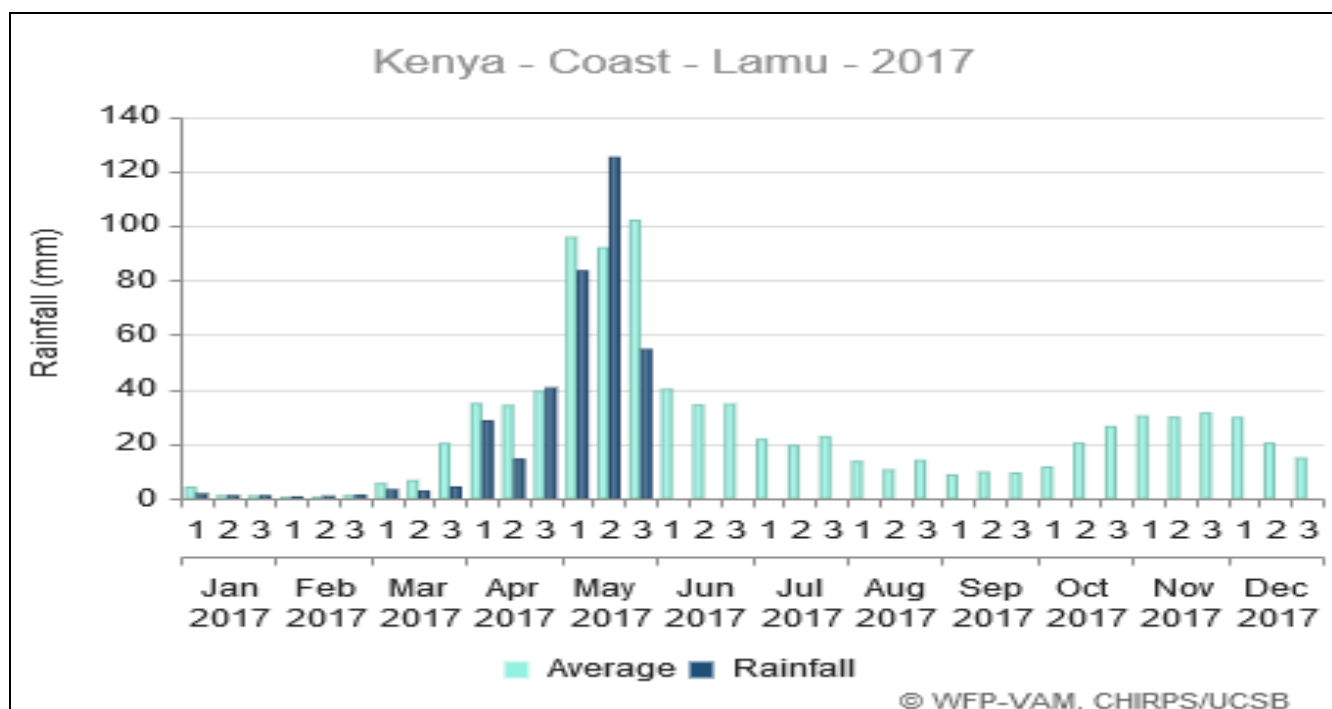


Figure 1: Rainfall Performance for Lamu in May 2017. (Source: WFP-VAM)

1.1.2 SPATIAL DISTRIBUTION

- Rainfall received in the month of May across the County helped to reduce the impacts of drought. The rainfall was received across all parts of the county.

1.1.3 TEMPORAL DISTRIBUTION

- The month was characterized by significant showers which were fairly and evenly distributed in the County.

2.0 IMPACTS ON VEGETATION AND WATER

2.1 Vegetation Condition

2.1.1 Vegetation Condition Index (VCI)

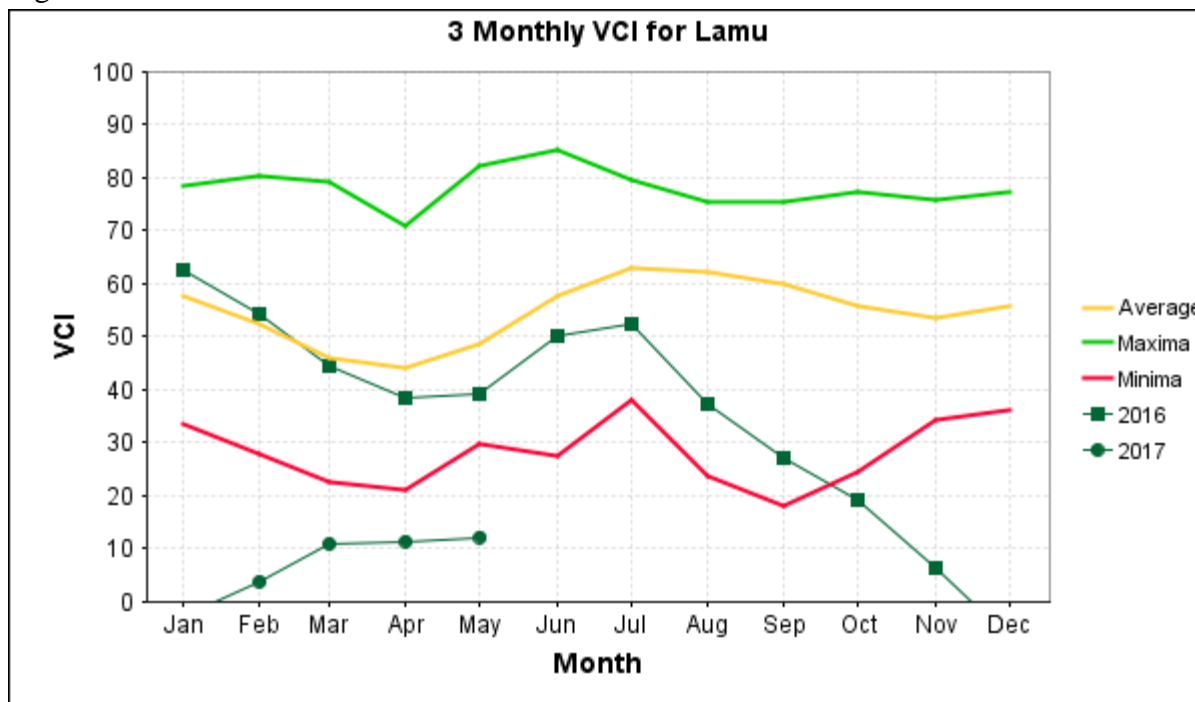
- The vegetation condition for the month of May is 12.06 for the County and below normal compared to the May long term average and the vegetation condition is improving.
- The VCI indicated severe vegetation deficit both in Lamu East and West Sub-Counties as shown by the VCI table below.

May 2017 VCI (3M) Table

ADMINISTRATIVE UNITS		VCI as at 30th April 2017	VCI as at 30th May 2017
County	Sub County		
LAMU	County	12.42	12.06
	Lamu East	12.59	14.58
	Lamu West	12.32	10.58

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 remained unchanged from 0.45 in April to 0.58 in May and it was below the Long term average of 0.64. However the vegetation index has been on an improving trend from April.

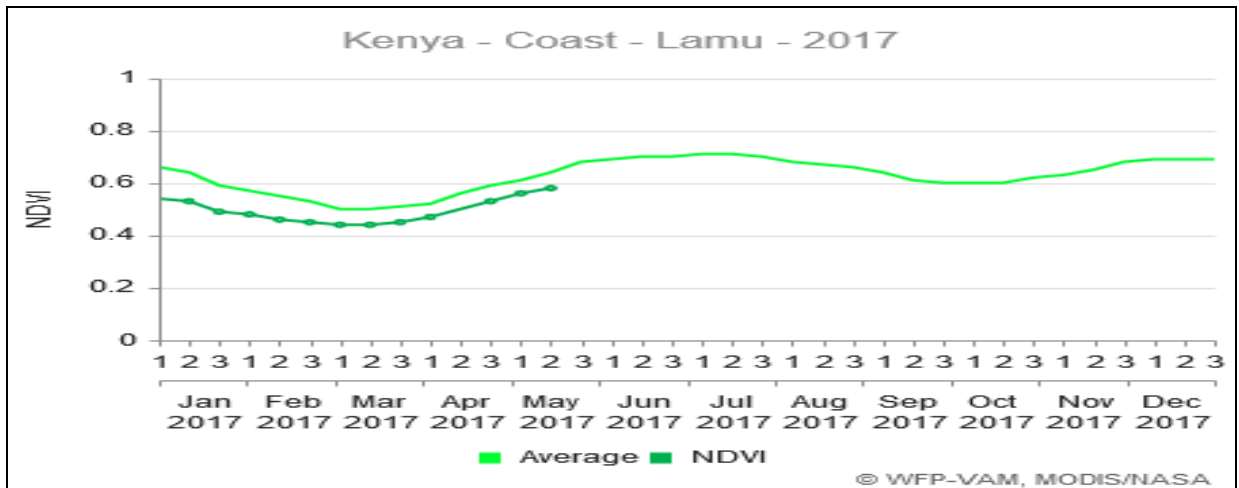


Figure3: NDVI for Lamu in the month of May 2017. (Source: WFP-VAM)

Figure 4: VCI for Lamu County

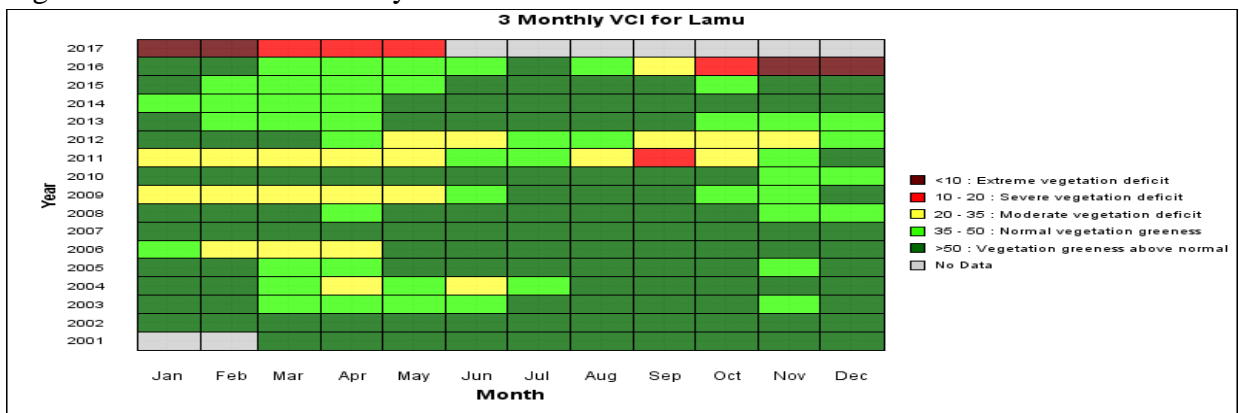


Figure5: VCI for Lamu West

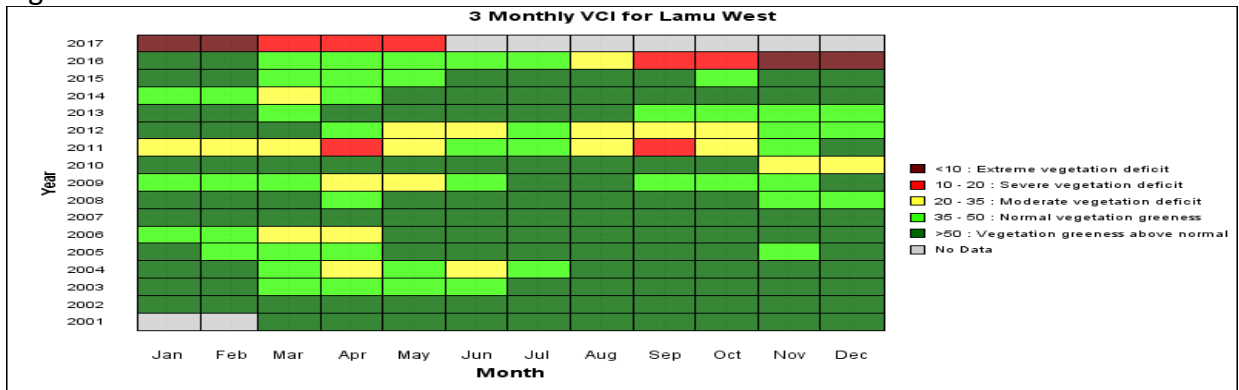
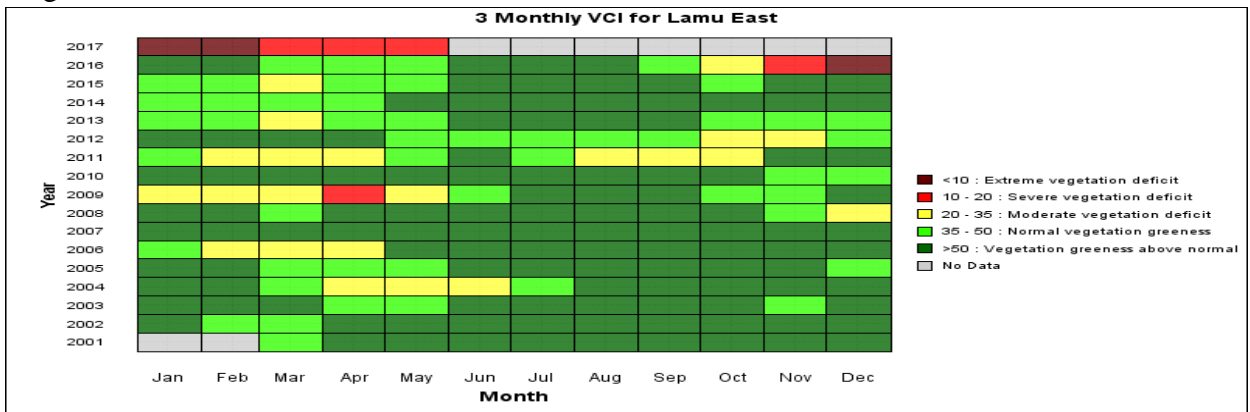


Figure 6: VCI for Lamu East



FIELD OBSERVATIONS

Pasture and Browse Conditions

2.1.2 Pasture

- Pasture condition was fair across all livelihood zones and improving in both quality and Quantity.

2.1.3 Browse

- The quantity and quality of browse was fair across all livelihood zones for the month of May. The browse condition continued to improve from that of the previous month. The available browse amount is, however, below normal compared to a normal year but the situation is improving.

HYDROLOGICAL DROUGHT

2.2 Water Sources and Availability

2.2.1 Main water sources

- State of water sources in the County was fair across most livelihood zones but the condition is still improving due to continuation of rainfall. Main water sources were recharged at an average of 50-80 percent of their capacities.
- The main water sources in the month of May were: Boreholes- 12.5 percent, Shallow wells – 37.5 percent, Pans and dams-25%, Traditional water well at 12.5% and piped water system at 12.5 percent.

Sources of water for Lamu County, May 2017

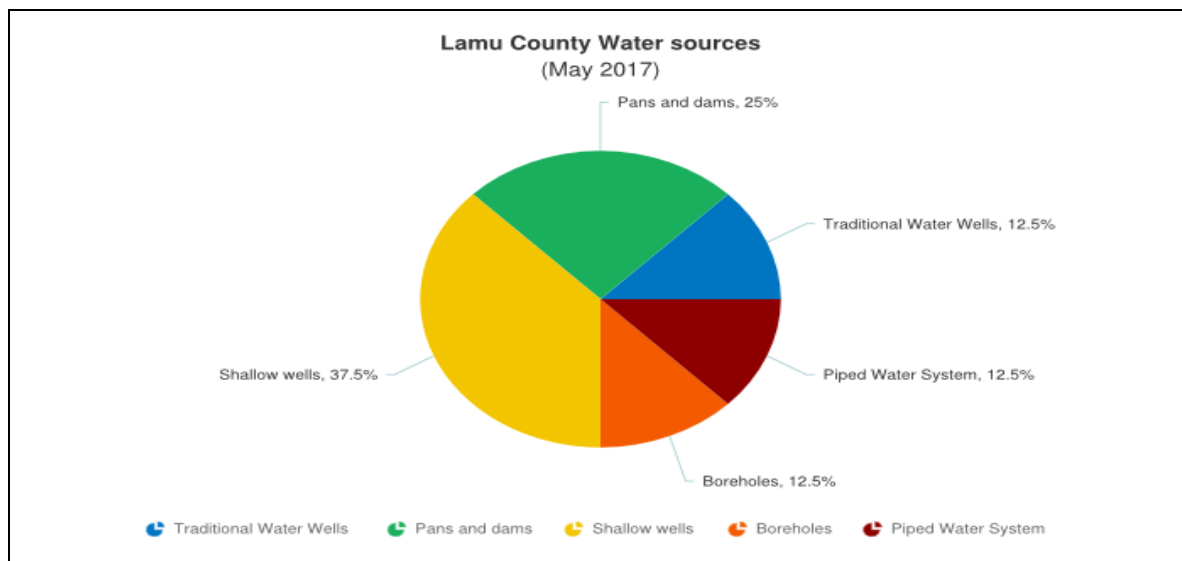


Figure 7: Main sources of water

2.2.2 Availability of water for household consumption

- Average Household watering return distance was 1.6 Km in May from 12 Kilometers in April. This was due to increase in rainfall amount which led to increase in water table levels.
- Household Return Water distances per livelihood zone were as follows: the Agro pastoral - 10.7Km, Fishing & Mangrove Harvesting 5.5Km and for Mixed Farming Zone it was 1.9 Km and irrigated farming 1Km.

- The 2012-2016 average household water distances for May was 1.52 Kilometers which was lower than the current average household watering distance for May. This shows that the current average household water distance for May was above the long term average.

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

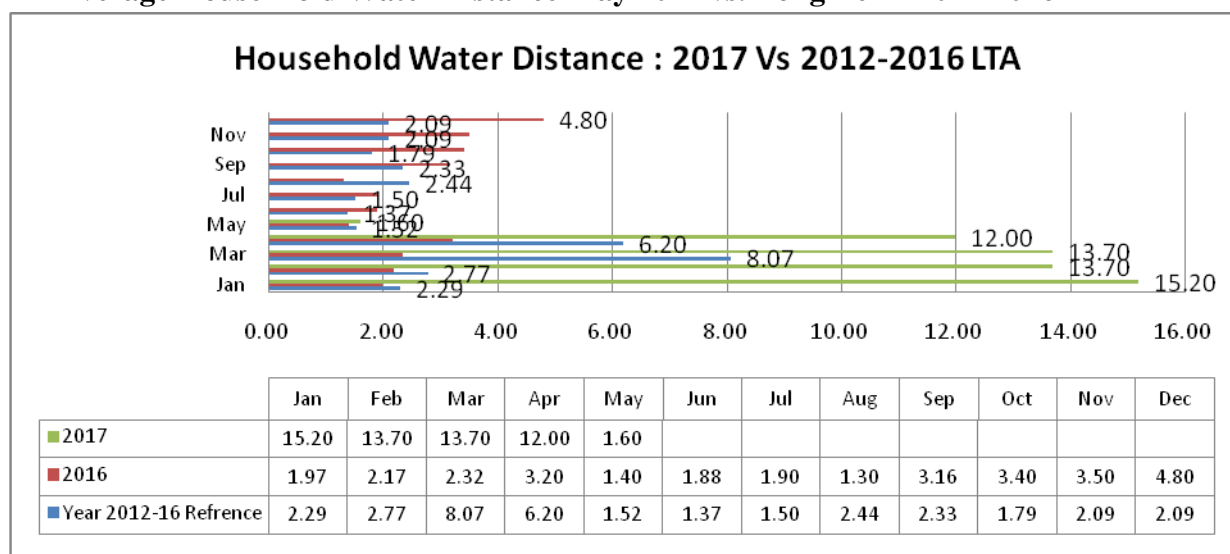


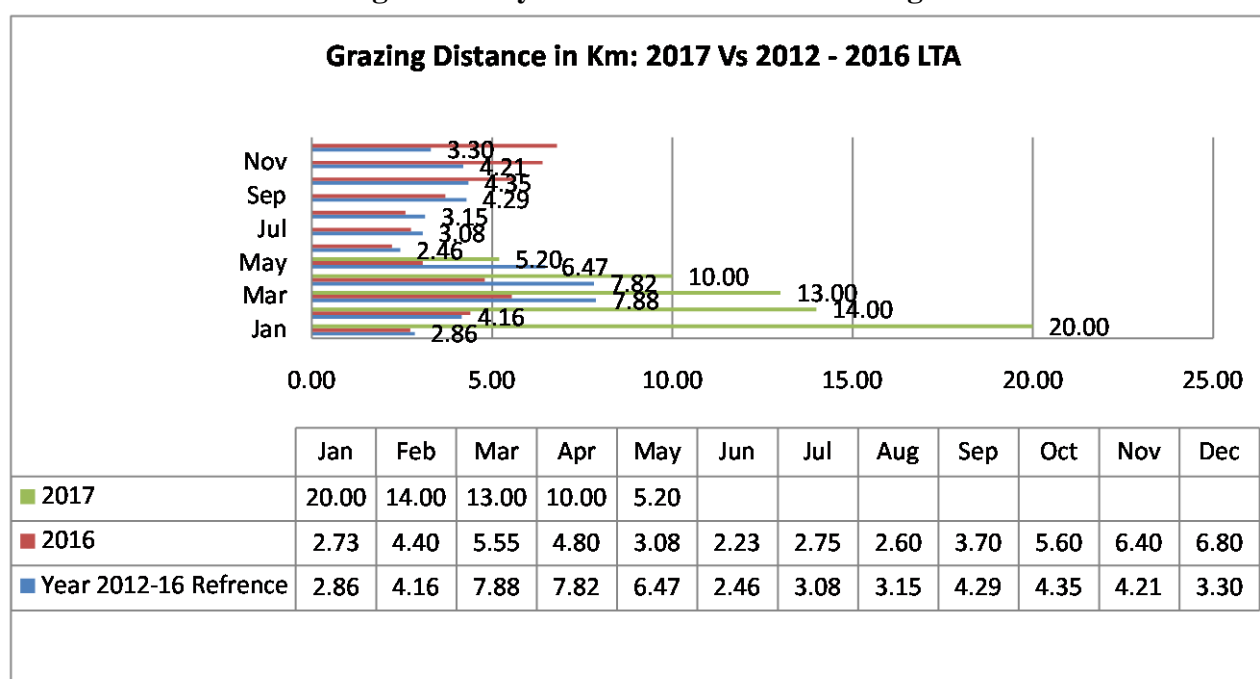
Figure 9: House hold water distance

n=150

2.2.3 Livestock access to Water

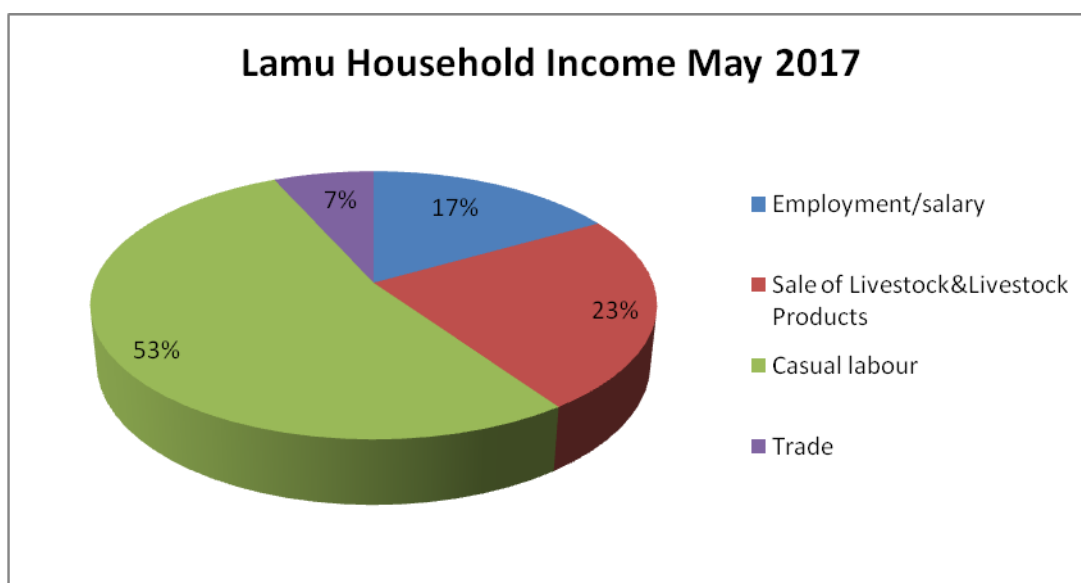
- Livestock average distance to water source from grazing Area was 5.2Km in the month of May from 9.6 kilometers in the month of April. This decrease from last month's distance was due to the ongoing rains which led to improvement in browse and pasture near to water sources.
- The current average grazing water distance for May of 5.2 Km was lower than the year 2012-2016 long-term average of 6.47 Kilometers.

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



2.3 Household Income

The main household income for the month of May were as follows: Employment 17%, sale of Livestock/Livestock products 23%, Casual labour 53% and trade 7%.



2.4 Implication on Food Security

- The prevailing long rains has led to recharging of water sources leading to improvement of pasture, browse and increased access to water for livestock.
- The decrease 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 cases of Livestock migration from neighboring County of Tana River during the Month of May to areas surrounding the Agro-Pastoral areas of Moa and Didewaride through Gamba.

3.1.2 Livestock Body Condition

- Livestock body condition for cattle was fair while that of goats was good across all the livelihood zones. However, the condition is expected to flourish due to onset of rains and regeneration of the pasture and browse.

3.1.3 Livestock Diseases

- There were no unusual incidences of diseases except increased cases of tsetse fly related diseases (Trypanosomiasis).
- Drought related livestock deaths were still reported in the agro pastoral livelihood zones in areas of Didewaride, Bargoni, Lumshi, Chalaluma and the bordering Marginal Farming Zones of Marafa, Poromoko and Mapenya.

3.1.4 Milk Production

- Milk production remained relatively low but decreased slightly from 2.5litres in April to 1.8 litres in May. This was much lower than the long-term average of 14.05 litres in May.
- Mixed farming and Fishing Livelihood Zone produced an average of about <1 litre while the Agro pastoral Zone produced average of about< 4 litres.

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

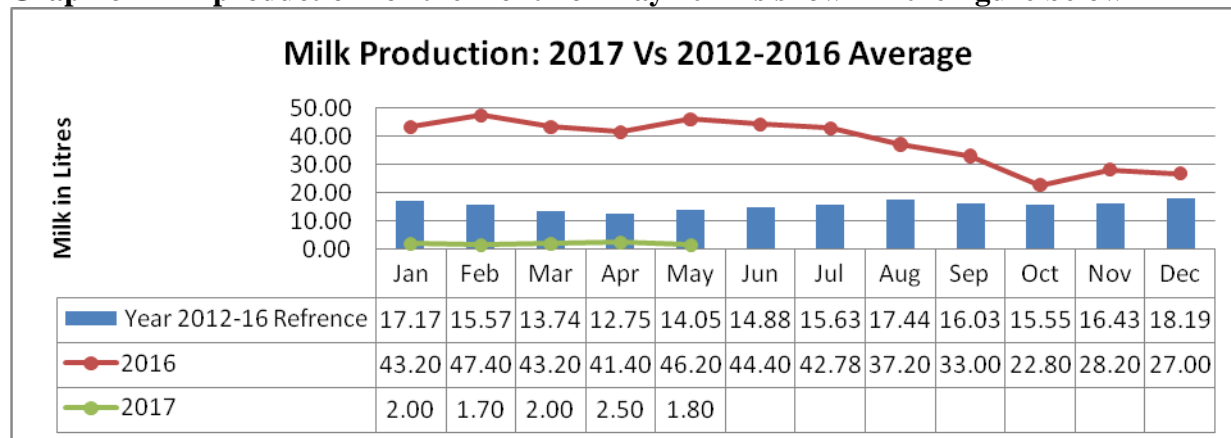


Figure 11: Milk production n=150

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.
- Most farmers have now planted their crops for long rains season.

3.3 Implications on Food Security

- The improving body condition of cattle across the county has resulted to a increase of livestock prices resulting to increased income from livestock sales hence resulting to

increased food security.

- The influxes of livestock from neighboring County of Tana River can lead to increased disease and depleted pasture.

4.0 MARKET PERFORMANCE

4.1 LIVESTOCK MARKETING

4.1.1 Cattle Prices

- Average cattle market price in the month of May was Kshs 23,750 from Kshs 20,000 in April. This was an increase from that of the previous month of April.
- This increase in price could be attributed to improved body condition due to improvement of both quality and quantity of pasture owing to onset of rainfall.
- The prices were distributed as follows: Mixed Farming/Irrigation- Kshs 17,000, Fishing and Mangrove Harvesting- Kshs 25,500, Agro pastoral- Kshs 21,000, Agro pastoral/Fishing Kshs 25,000 while Mixed Farming/Casual Labour was Kshs 17,500.
- The average market cattle price for the month of May was, however higher than the 2012-2016 long-term average price of Ksh.13, 300.

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

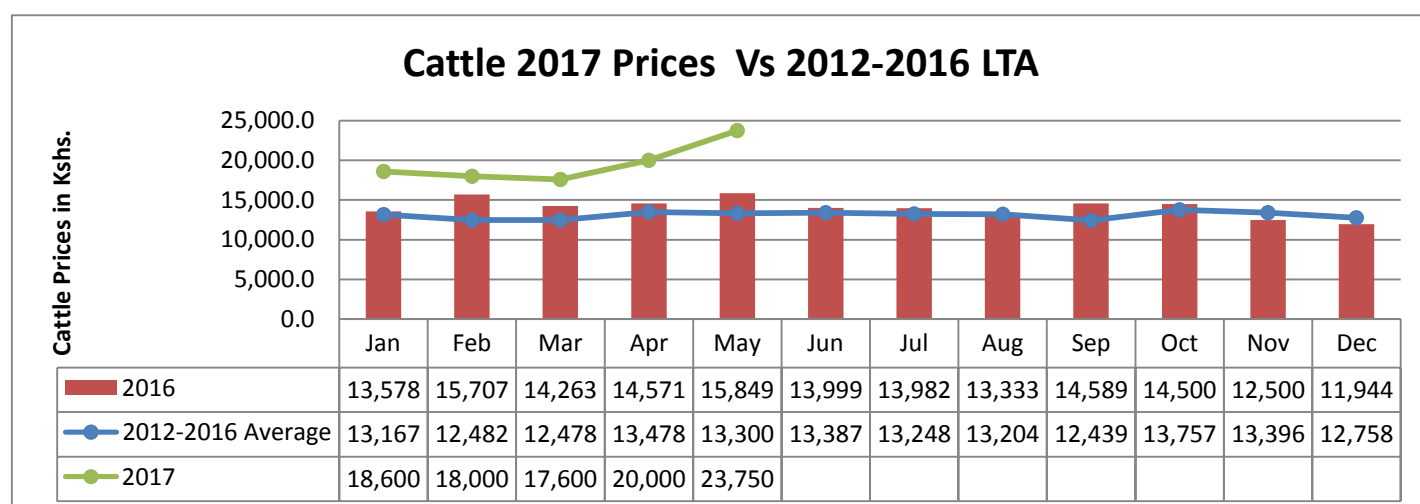


Figure 12: Cattle prices

4.1.2 Small Ruminants Prices - Goat Prices

- Goat prices increased from Kshs 3,640 in April to of Kshs 4,375 in May. This increase in price of goats could be attributed to improved body condition of goats due to regeneration of browse.
- Agro pastoral Livelihood Zone recorded price of Kshs 3,300, Fishing and Mangrove Harvesting Zone recorded Kshs 4,300 and Mixed Farming/Casual Labour Zone recorded a price of Kshs. 4,250, Mixed Farming/Irrigation recorded price of Kshs 3,000 while the price for Agro pastoral/Fishing Zone was Kshs. 4,500.
- The long-term average goat price for the month of May was Kshs. 2,846 which was lower than the current average price for the month of May.

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

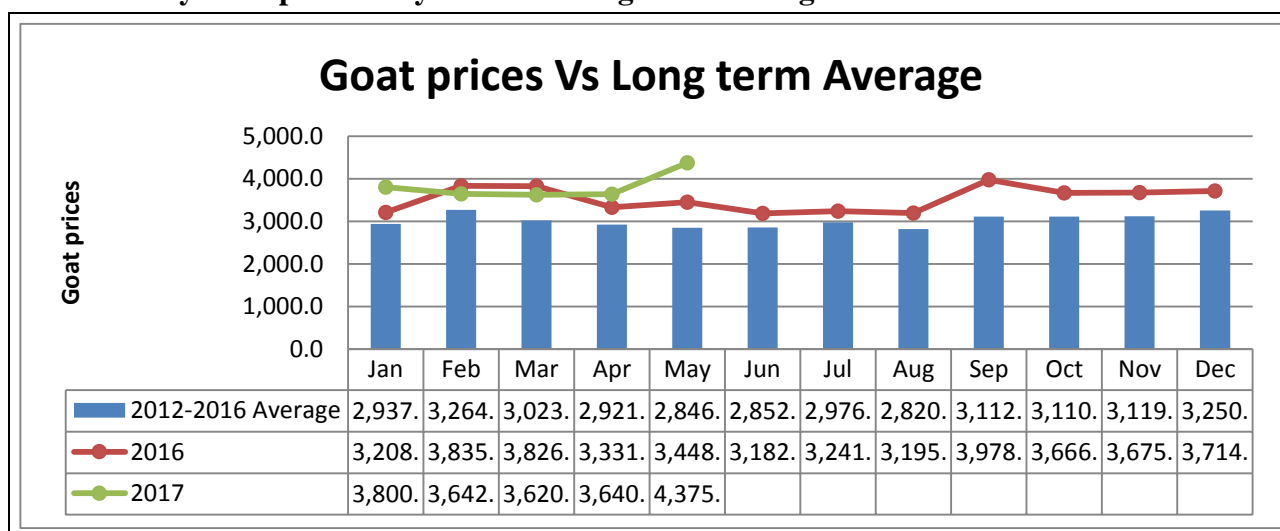


Figure 13: Goats prices

n=150

4.2 CROP PRICES

4.2.1 Maize price

- Average price of a Kg of maize in the Month of May was Kshs 55/Kg an increase from Kshs. 54/Kg in April. The high average maize price was attributed to lower stock levels leading to higher prices.
- The prices were distributed as follows: Kshs 60 in Mixed Farming/Irrigated , Fishing/Mangrove Harvesting Kshs 30, Agro Pastoral/Fishing Zone Kshs 48, Mixed Farming/Casual Labour Kshs 55 and Kshs 52 in Agro Pastoral Livelihood zone.
- The average price of maize in May was higher than the long term-average price of Kshs 36.

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

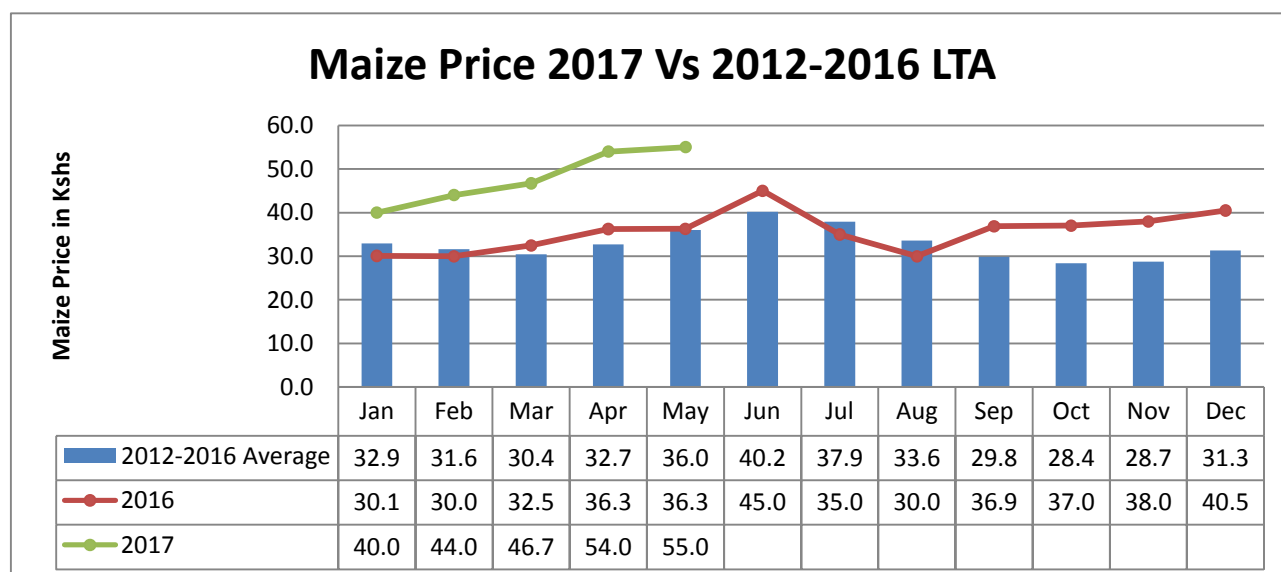


Figure 14: Maize prices

4.2.2 Beans

- Average price of Kg of beans increased slightly from Kshs. 112.5 in April to Kshs.122 in May. This increase in price was due to diminishing food stocks.
- The beans price was distributed as follows: Kshs 100 in Mixed Farming/Irrigation, Agro pastoral/Fishing Kshs 120, Mixed Farming/Casual Kshs 120, Agro pastoral Kshs120 and in Fishing/Mangrove Harvesting Livelihood Zone Kshs 150.
- The long-term average price of beans was Kshs. 88.9 which was lower than the current average beans price for the month of May.

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

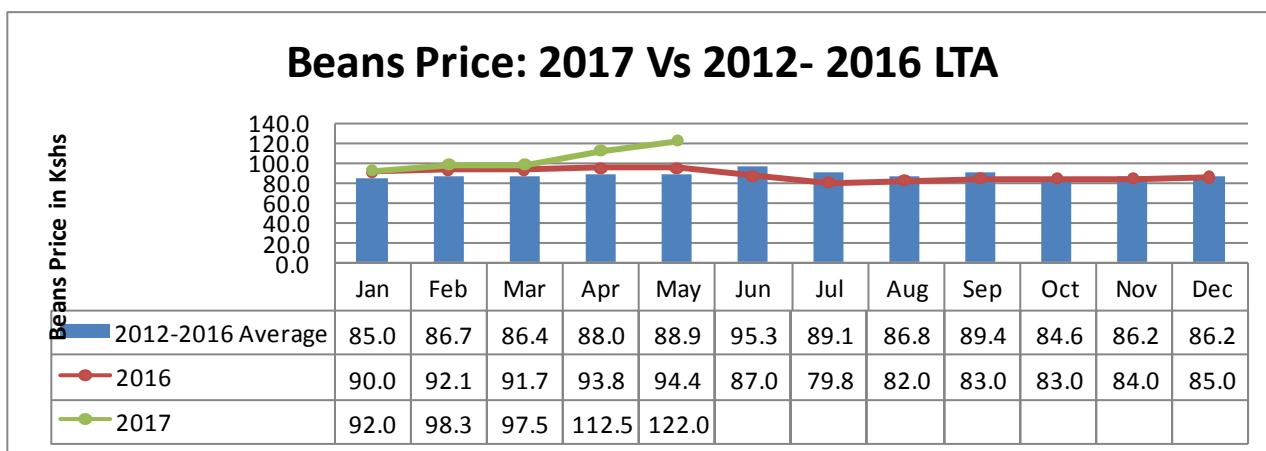


Figure 15: Beans prices

Livestock Price ratio/Terms of Trade

- The average Term of Trade (ToT) for the month of May was 79.55 an increase from 67.41 in the month of April. This showed the exchange ratio improved in favour of Livestock Keepers to Crop farmers. These increase indicated an increase in goat price in relation to maize price.
- The ToT was 64.8 in Lamu West and 85.2 in Lamu East. The ToT for May was higher than the 2012-2016 LTA of 79.09.

Term of Trade in May 2017 vs. Long term Average

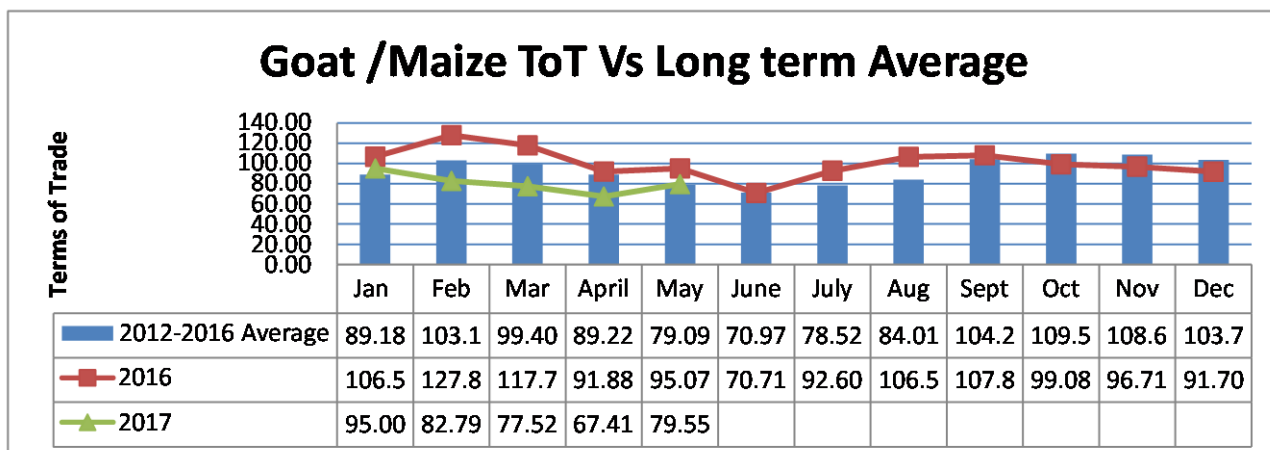


Figure16: Terms of Trade

4.4 IMPLICATION ON FOOD SECURITY

- The improving body condition of livestock and the onset of rain has resulted in increase in livestock prices and therefore livestock keepers are able to get better value for their livestock contributing to improved food security in Agro pastoral zones although on a gradual pace.
- Maize prices are still unstable and high, with the sudden price increase from January- May period. This means that access to cereals is minimal hence leading to food insecurity at household level in Mixed farming Livelihood zones.
- The terms of trade still favors Livestock farmer than maize sellers, although the majority may not take advantage of the increased goat prices in the Market.

5.0 FOOD CONSUMPTION AND NUTRITION STATUS

5.1 Milk for Household Consumption

- Milk Consumption was 1.1 litres in the month of May from 1.0 litre in April. This was due to low milk production in the County.
- May long term average milk consumption of 16.85 litres was much higher than the current average of milk consumption.

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

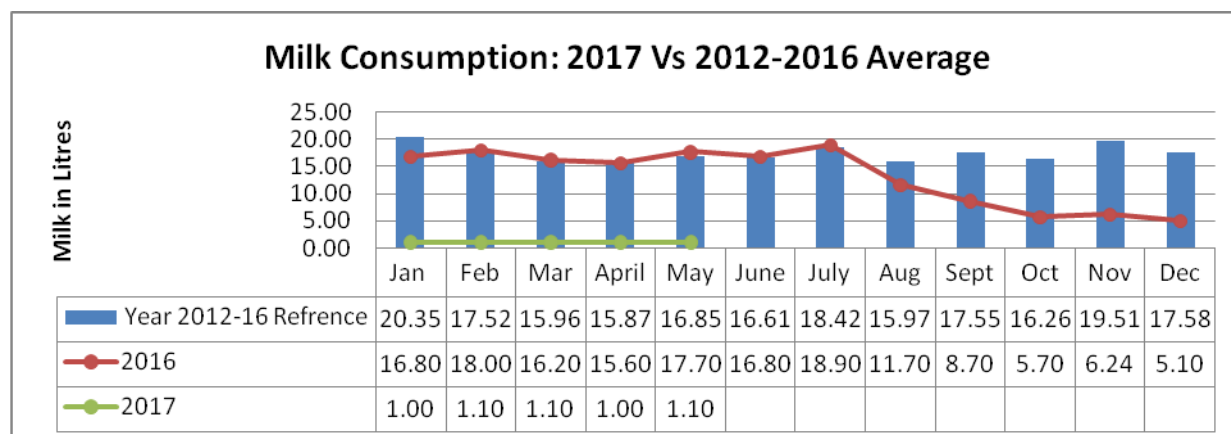


Figure 17: Milk Consumption

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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 6.0 percent in April to 5.7 percent in May. 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 5.7 percent MUAC for May has deteriorated compared to the year 2012-2016 long term average of 5.2 percent.

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

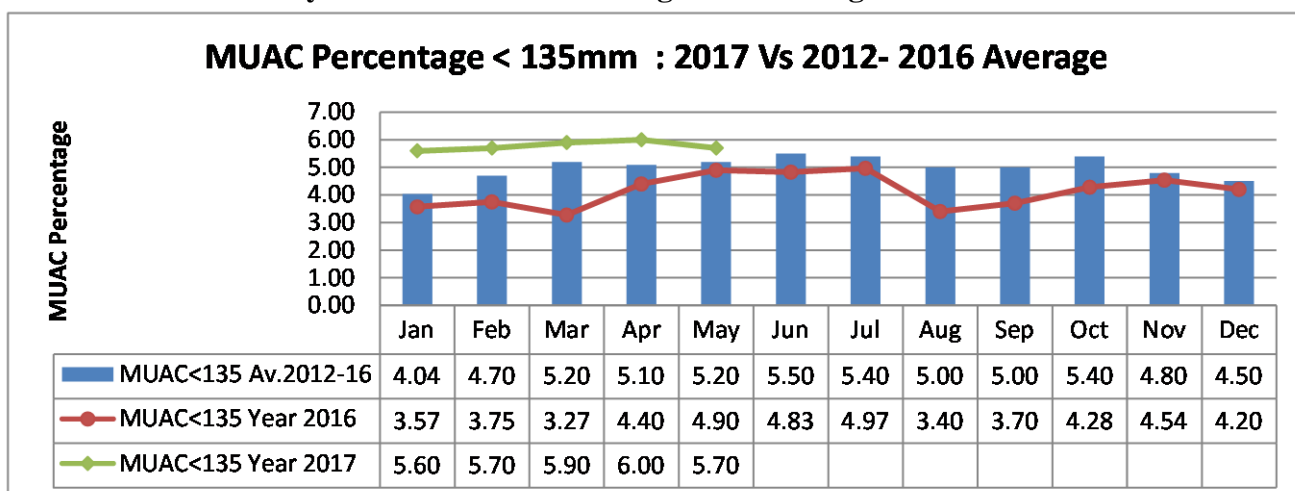


Figure 18: MUAC

n=150

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, Pandanguo, Katsaka Kairo, 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 21.7 percent and 23.3 percent respectively.
- Households’ percentage with poor FCS decreased significantly from 88.3 in Agro pastoral Zone to 21.7.

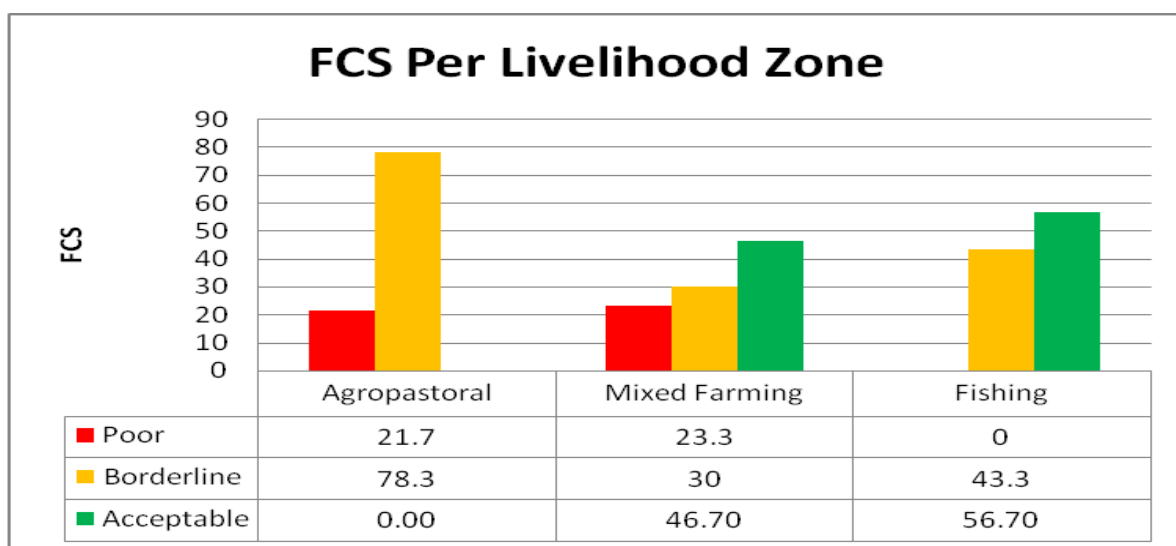


Figure 19: Food Consumption Score (FCS)

5.4 COPING STRATEGY INDEX

- The mean coping strategy Index in the Month of May decreased to 12.6 from 20.43 in April indicating decreased coping strategies at household level.
- Agro pastoral Zone had CSI of 8.9; Mixed Farming livelihood zone had 13 while Fishing Livelihood zone had a copying strategy index of 16.
- Common coping strategies employed by food insecure households in the month of May 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 May 2017 vs. the Month of April 2017

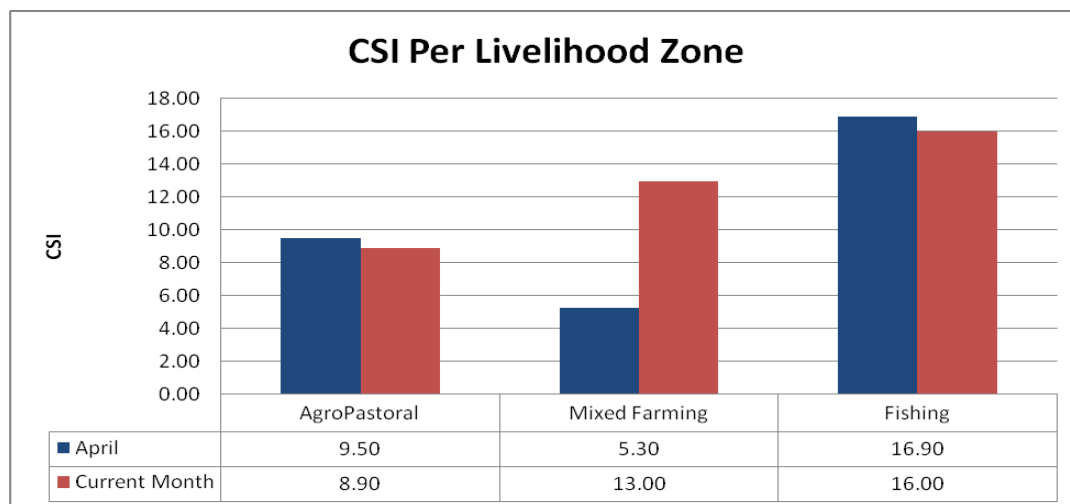


Figure 20: Coping strategies Index

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-May in areas of Agro pastoral Zones of Witu such as Sedemke, Pandanguo, Katsaka Kairo, and Chalaluma areas , resulted from decreased in food security and sound a warning as the situation continues to worsen.

6.0 CURRENT INTERVENTION MEASURES (ACTION)

6.1 FOOD INTERVENTION

- The following table highlights the food distribution by the national Government through the office of the County commissioner.

No	Divisions	Food Items				
		Maize	Rice	Beans	Cooking Oil	Nutropap
1	Mpeketoni	494 bags	160 bags	20 bags	6 Cartons	4 bales
2	Amu	125 bags	77 bags	20 bags	6 Cartons	4 bales
3	Witu	125 bags	70 bags	20 bags	6 Cartons	4 bales
4	Hindi	125 bags	70 bags	20 bags	6 Cartons	4 bales
5	Mkunumbi	125 bags	70 bags	19 bags	6 Cartons	4 bales
	Total	994 bags	447 bags	99 bags	30 cartons	20 bales

- Relief Food was distributed by the Kenya Red Cross/ICRC to 930 households each receiving 25kg -Rice,2.5kg-Sugar,12kg-Beans,5litres-Oil in Boni areas of Bargoni, Kiunga, Pandanguo, Milimani and Kiangwe during the Month under review.

6.2 NON-FOOD INTERVENTIONS

6.3 Drought Response Interventions

- Cash Transfer by Kenya Red Cross to 6,070 households in Faza, Witu, Basuba and Kiunga ward for the Month of May.
- The following amounts are to be received per household as follows: Faza and Ndau-Kshs 5,700 per hh, Kiwayu-Kshs 5,000 per households and in the mainland Kshs 4,800 per households.
- KRC also distributed 240 satchets of Pur and 360 bottles of Aqua guard in Poromoko, 9600 satchets of Pur in Kiunga for water treatments. They also donated 4 Cholera kits to Mpeketoni Sub County Hospital.
- Food for fees was distributed by NDMA to Boarding and Day Secondary schools in the two sub counties during the Month under review.
- Four plastic tanks were also distributed by NDMA to needy institutions in Lamu west Sub County.

7.0 EMERGING ISSUES

7.1 Insecurity

- Tension is high in Lamu County after three people were reportedly killed by suspected al Shabaab militia at Kaisari village in Pandanguo.
- Previously al Shabaab staged another ambush on administration police vehicle and killed seven at Baure along the Hindi Kiunga.

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 the ongoing rainfall received in the Month of May. However, the county still remains in Alarm Phase.
- Water availability and accessibility situation has improved for households due to the rainfall.
- 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 May 3-Month Vegetation Condition Index indicating extreme vegetation deficit band for the entire County.
- Food prices expected to increase due to 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 aquatabs.
- Constructions of boreholes, water pans and Dams for preparedness.

Livestock and Agriculture

- Provision of relief seeds, fertilizers and subsidized tractor services for crop farmers.
- 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 Yana River.
- 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.
- Incorporate Beyond Zero Campaign facility during the outreaches.
- Enhance disease and nutritional surveillance.

Education

- Support to schools feeding programmes for the most vulnerable communities focusing the two sub counties.
- 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.
- Establish communication links between the community and KWS.

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
	> +1.5or 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 agriculturaldrought
	10 to 20	Severe agricultural drought
	<10	Extreme agriculturaldrought

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	Emerciated	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.