

National Drought Management Authority

KILIFI COUNTY DROUGHT EARLY WARNING BULLETIN FOR JANUARY 2017



A Vision 2030 Flagship Project



JANUARY EW PHASE



Drought situation and phase classification

Biophysical Indicators (Environmental indicators)

- On average the county received minimal rains for any significant impact.
- State of water sources in the county during the month under review was 3 (indicating inadequacy) following poor recharge.
- On average pasture condition remained poor across livelihood zones.
- Vegetation condition remained poor with a 3-month VCI of 4.38 (extreme vegetation deficit).

Socio Economic Indicators (Impact Indicators)

Production indicators

- Livestock body condition ranged between score of 2 and 3.
- Milk production continued decreasing thus the consumption.

Access indicators

- Average return distance from water sources was significantly high compared to the long term mean.
- Average water prices per 20ltr jerry can was significantly high compared to normal following water stress in the county.
- The terms of trade recorded a slight improvement.

Utilization indicators

- The proportion of children at risk of malnutrition was significantly high.

Food Consumption Score placed most household at poor sate.

- Coping Strategy Index increased significantly across all livelihood zones.

Early Warning(EW) Phase Classification

| Livelihood Zone | Stage | Trend |
|--|--|---|
| Marginal Mixed farming | Alarm | deteriorating |
| Livestock/Ranching | Alarm | deteriorating |
| Cash Cropping/Dairy | Alarm | deteriorating |
| Food Cropping | Alert | deteriorating |
| COUNTY | Alarm | deteriorating |
| Biophysical Indicators | Value | Normal |
| Average Rainfall (% of normal) | 6 | 50-80 |
| VCI-3month | 4.38 | 35-50 |
| Production indicators | Value | Normal |
| Livestock Migration Pattern | Still in ranches (Giriama in Ganze and ADC ranch and Tsavo park) | No migration search of water and pasture |
| Livestock Body Conditions | 2-3 | 6-8 |
| Milk Production ltr/hh/day | 2.4 | >2.4 |
| Crop condition | Germination/Knee Height (<5% planting) | 1 st /2 nd weeding/ |
| Access Indicators | Value | Normal |
| Terms of Trade (ToT) | 51 | >80 |
| Milk Consumption (% range) | 1.4 | >1.8 |
| Average Water Distance for Households (Km) | 6.3 | <2.1 |
| Average Grazing-Water point Distance (Km) | 6.9 | <3.9 |
| Utilization indicators | Value | Normal |
| MUAC (%) | 12.8 | <4.7 |
| Coping Strategy Index | 9.6 | <4.5 |

| | | | | | | | | | | | |
|--|---|--|-----|-----|-----|-----|-----|------|-----|-----|-----|
| <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"> Land preparation Increased HH Food Stocks Kidding (Sept) | | | | | | | | | |
| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov | Dec |

1.0 CLIMATIC CONDITIONS

1.1 Rainfall Performance

1.2 Amount and Spatial Distribution

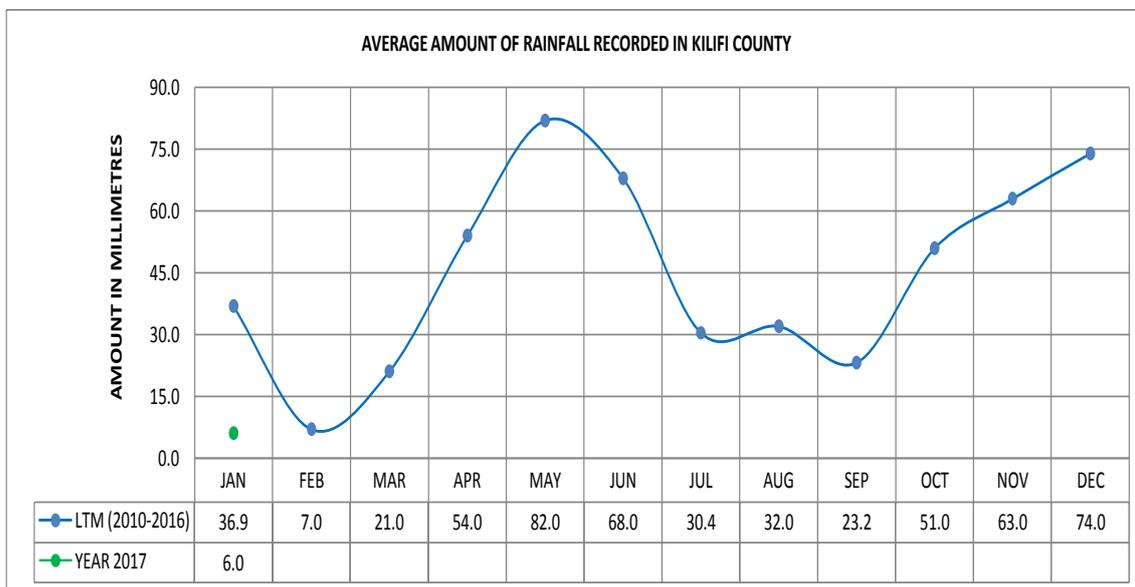


Figure1a: Average rainfall recorded in Kilifi County

- The amount of rainfall received in the county reduced by 73 percent from 22 mm recorded in December the previous year to only an average of 6 mm.
- The amount recorded was very low as compared to the long term mean.

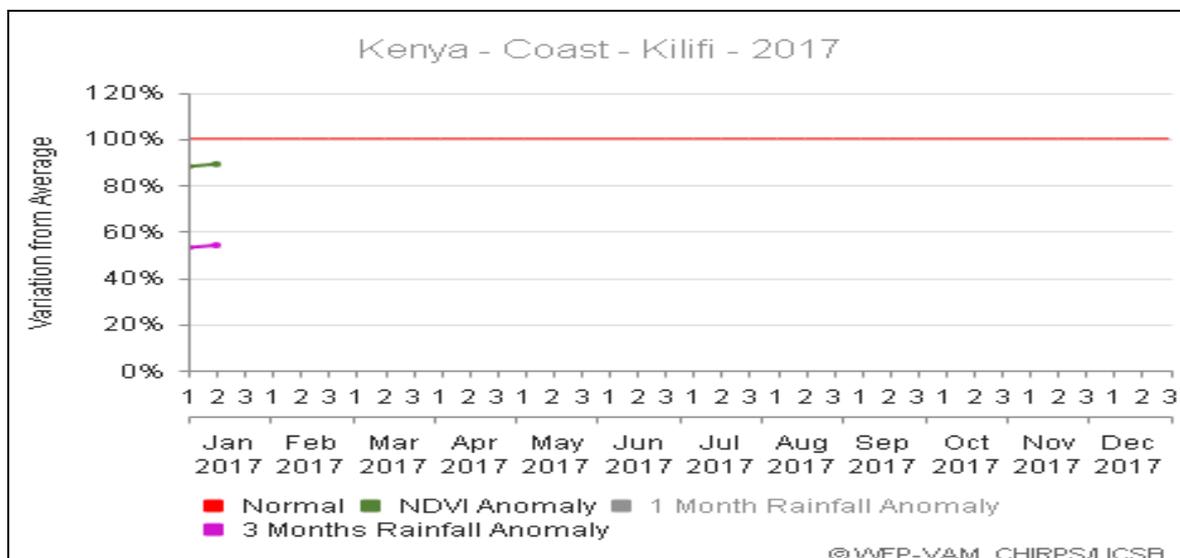


Figure1b: Kilifi County rainfall anomalies

- The chart depicts a 45 percent three months rainfall anomaly below the long term mean.

2.0 IMPACT ON VEGETATION AND WATER

2.1 Vegetation condition

2.1.1 Vegetation Condition Index [VCI]

The Vegetation Condition Index (VCI) compares the current NDVI to the range of values observed in the same period in previous years.

| | | As at 28 th December 2016 | As at 30 th January 2017 |
|---------------|---------------|--------------------------------------|-------------------------------------|
| KILIFI | County | -11.82 | 4.38 |
| | Ganze | -10.82 | 12.12 |
| | Kaloleni | -23.91 | -6.14 |
| | Magarini | -9.13 | 3.49 |
| | Malindi | -16.81 | 2.27 |
| | Kilifi-North | -23.2 | -5.29 |
| | Rabai | -25.83 | -5.28 |
| | Kilifi-South | -6.59 | 9.03 |

Figure 2a: Three month Vegetation Condition Index (VCI) values for Kilifi County
[Source: Boku University -Austria]

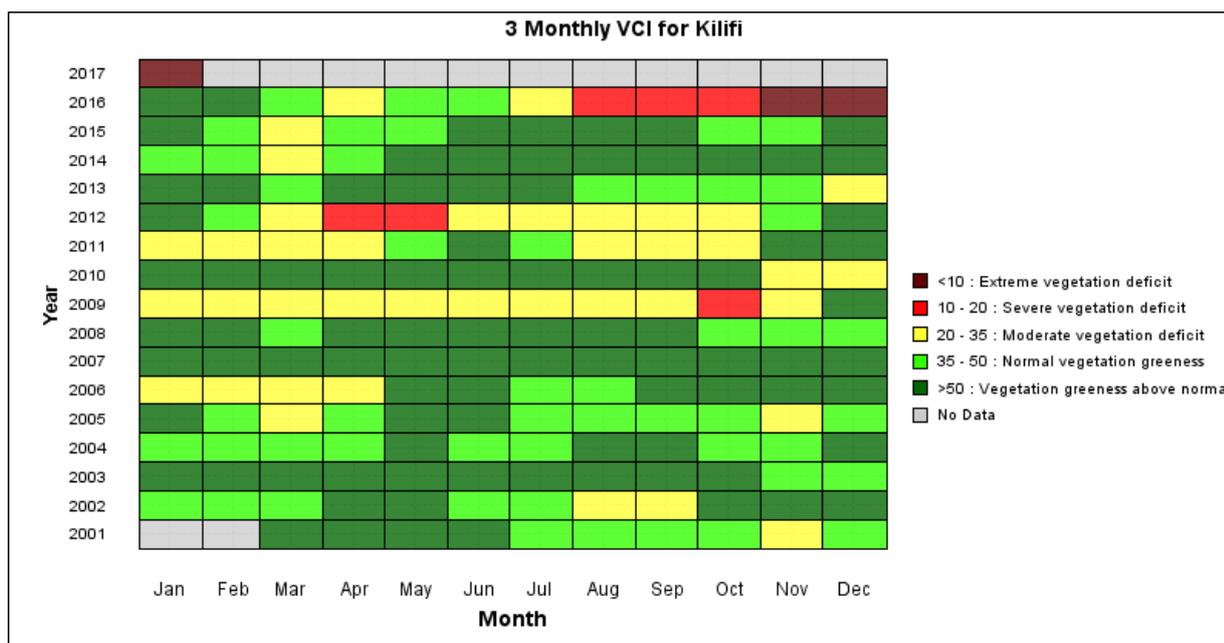


Figure 2b: Three month Vegetation Condition Index (VCI) matrix and chart for Kilifi County
[Source: Boku University -Austria]

- The county is classified under extreme vegetation deficit as per the Vegetation Condition Index.
- The extreme vegetation deficit was as a result of the ongoing dry spell and pressure from the large number of livestock
- The current 3-month VCI recorded was low compared to long term mean at this time of the year.

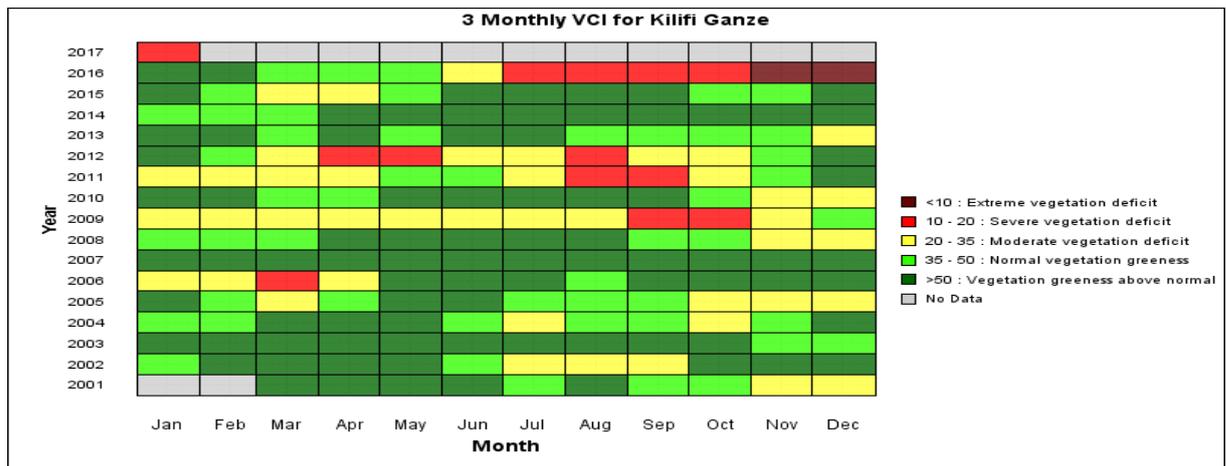


Figure 2c: Ganze Sub County 3-month Vegetation Condition Indices Matrices

- Ganze Sub County recorded severe vegetation deficit an indication of poor pasture condition. This situation is bad compared to other years in the month of January.

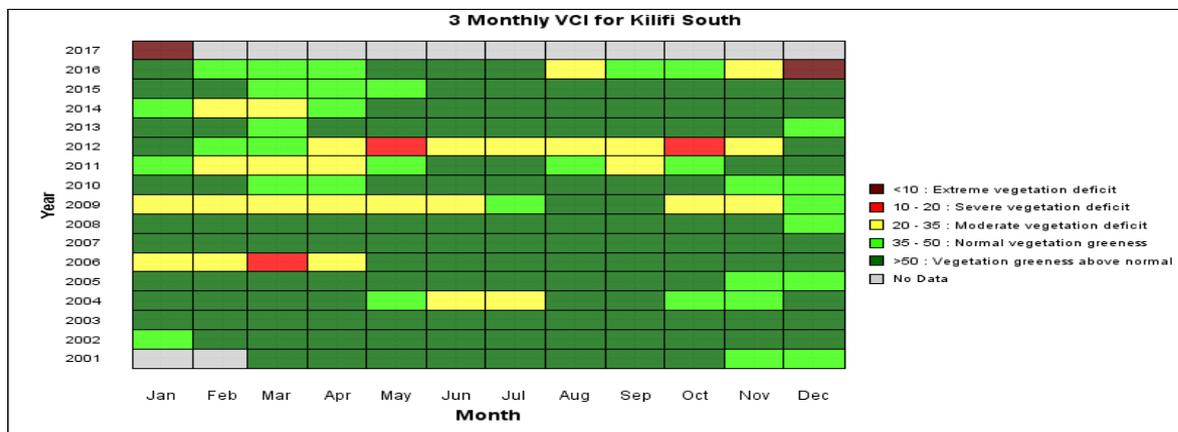


Figure 2d: Kilifi South Sub County 3-month Vegetation Condition Indices Matrices

- Kilifi South Sub County which most of the times remains in normal vegetation condition has recorded extreme vegetation deficit.

2.1.2 Pasture

- Pasture condition was below normal across the county.
- There was slight pasture regeneration in some sub counties occasioned by the showers recorded in the months of November and December.
- Despite some rains/showers experienced, minimal impacts on vegetation regeneration was recorded in Kaloleni, Magarini, Malindi, Kilifi South, Rabai and Kilifi North.
- The quantity of poor pasture available currently is expected to last for less than one month on average.

2.1.3 Browse

- On average, browse condition ranged between poor to fair in the cash cropping dairy zone and some parts of the food cropping zone.
- In the ranching/livestock farming and marginal mixed farming zones, browse condition was poor though slight regeneration was observed occasioned by the showers that were experienced between November and December.
- The current condition of browse is below normal at this time of the year.

2.2 Water Resource

2.2.1 Sources

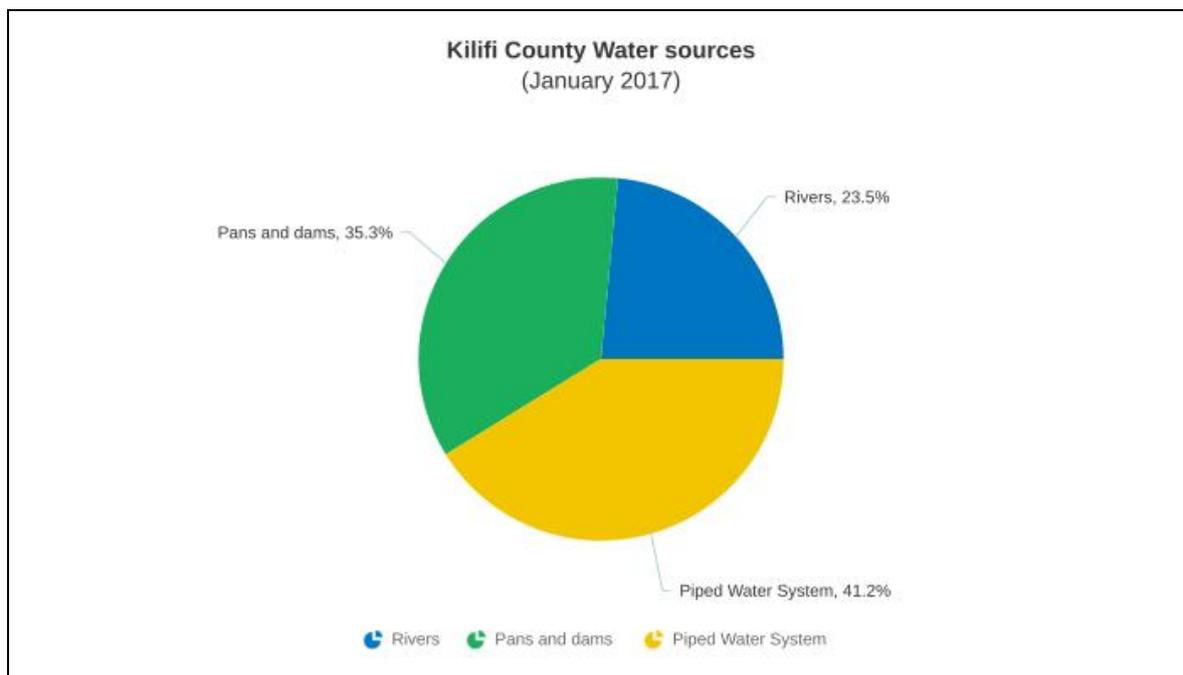


Figure 4: Water sources for households in Kilifi County

- The main water sources for domestic and livestock use across most livelihood zones in the month of January were pipeline, pans/dams and rivers
- The proportion of households who relied on water pans were mainly from Ganze sub county and while those who depended on rivers were from Malindi and Magarini sub counties due to proximity to river Sabaki.
- Some households in the livestock/marginal mixed farming zone of Ganze and Kaloleni continued to access water provided through water trucking program by the county and national governments /NDMA and other partners such as Mombasa Cement.

2.2.2 Household access and Utilization

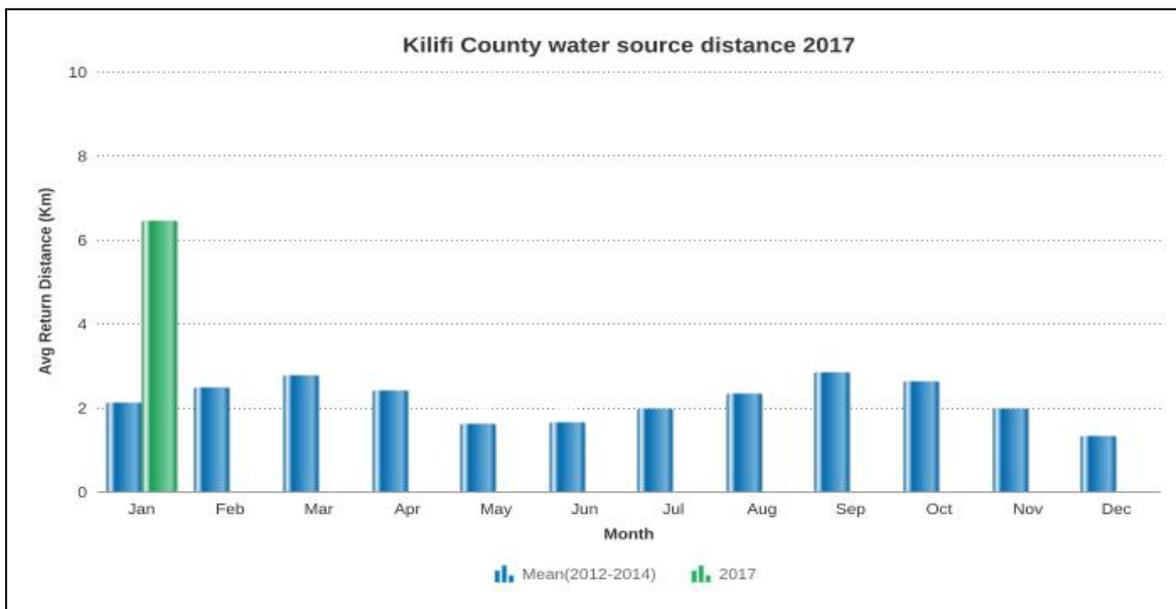


Figure 5: Household average return distance to water points

- The average return distance from water sources for households reduced by 7 percent from 6.8 km recorded the previous month to 6.3 km in the month of January.
- The longest average return distance was recorded in the ranching zone of Ganze, Kaloleni and Magarini sub counties with an average of 8.2 km while the shortest average distance was recorded in the food cropping zone with average return distance of 0.5 km.
- Average price for 20ltr jerry can was significantly high (Kshs 20 to Kshs 35) compared to normal (Kshs 10-Kshs 15).
- Average return distance to water points for households during the month was significantly higher than long term mean and average distance during the same month last year.

2.2.3 Livestock access to water

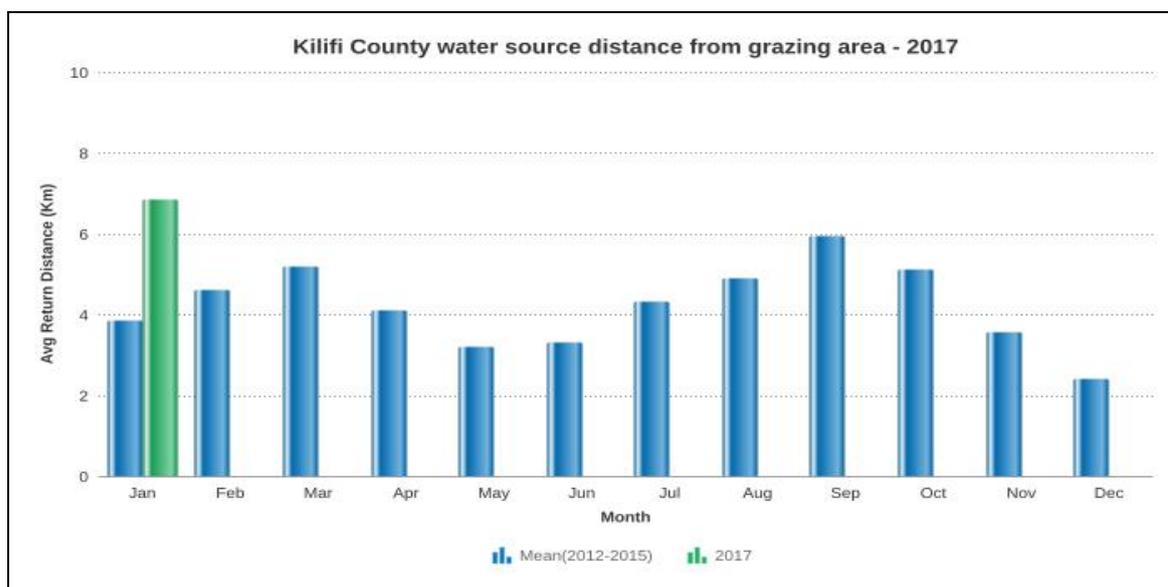


Figure 6: Average livestock return distance to water point from grazing area.

- Average return distance from grazing areas decreased by 20 percent from 8.6 km recorded in the previous month to 6.9 km in the month under review
- The decrease in average distance was occasioned by reduction in average distance to watering points especially in the areas of Bamba where pans were recharged from the rains recorded in December.
- The longest average return distance was recorded in the marginal mixed farming zone with an average of 8.6 km while the shortest average distance was recorded in the cash cropping zone with 1.8 km.
- Mwanamwinga in the marginal mixed farming zone continued to record high livestock trekking distances in search for water and pasture.
- Average distances expected to remain high due to poor forecasted long rains (delayed onset, early cessation and below normal) season
- The average return distance to grazing areas during the month was significantly higher than long term mean and compared to average distance recorded in January last year.

PRODUCTION INDICATORS

3.0 Livestock production

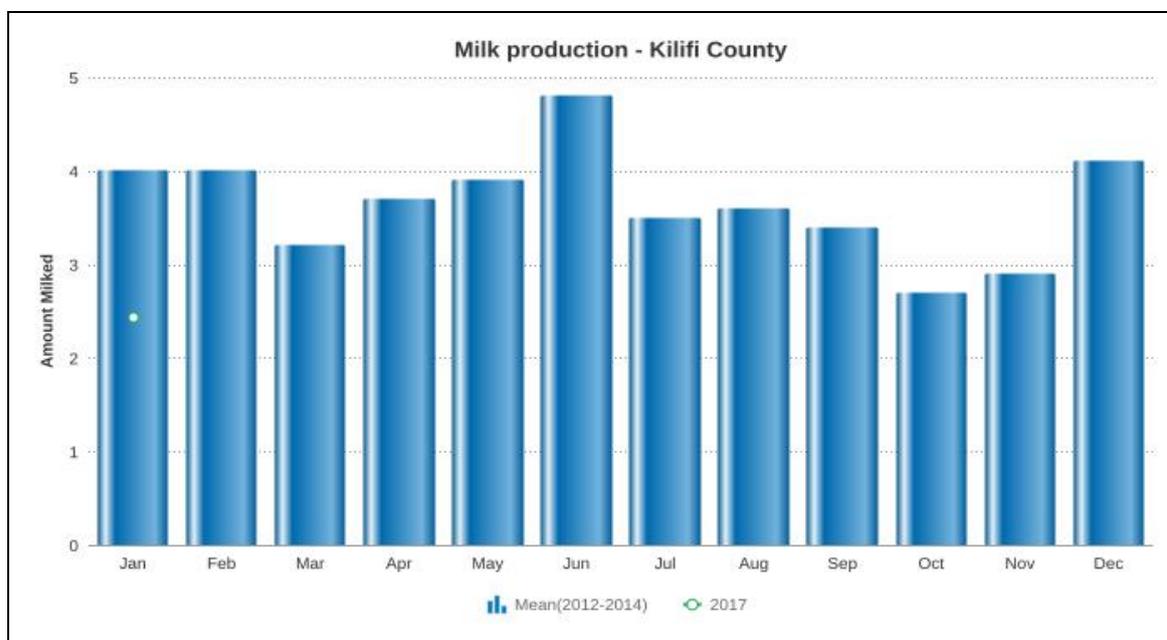
3.1.1 Livestock body condition

- Livestock body condition was below normal following pasture and water stress experienced in the since September 2016 date.
- Livestock body condition for cattle was fair in the food cropping and cash cropping zones. **In the** marginal mixed and ranching zones of Ganze, Kaloleni and Magarini, the body condition ranged between fair to poor with a score of 2 (Very thin no fat, bones visible) and 3 (Thin fore ribs visible).
- Kaloleni, Magarini and some parts of Ganze sub counties remained dry.
- Livestock body condition expected to continue deteriorating as the dry spell continued.
- Body condition for goats and sheep was fair to good across all livelihood zones occasioned by some improvement in browse condition due to some rains /showers recorded in December.
- Interventions on livestock feed supplements distributed in October -December have recorded some positive impact on livestock body condition in Kaloleni, Ganze and Magarini sub counties.

3.1.2 Livestock diseases

- CCPP were recorded in Ganze and Kaloleni sub counties while cases of New Castle Disease were recorded across all livelihood zones. Some cases of lumpy skin disease were also recorded in Ganze Sub County.

3.1.3 Milk production



- The average amount of milk produced per household per day was 40 percent lower as compared to long term mean of 4 litres per household per day.
- The production was highest in the mixed farming zone at between 4.7 litres per household per day while the lowest production was recorded in cash cropping/dairy zone which recorded only 1.5 litres per household per day
- The difference between livelihood zones was due to variations in availability of pasture and water.

3.2 Rain fed crop production

3.2.1. Stage and condition of food crops

- The few acreages of maize and cowpeas crop in the farms is water-stresses and has wilted.
- Due to poor rains' season, minimal (<5%) planting was done
- Significant "(100%) crop failure was recorded across all livelihood zones.

3.2.2. Crop harvest

- No rain-fed crop harvest was recorded in the month of January due to total season failure.

4.0 MARKET PERFORMANCE

4.1 Livestock marketing

4.1.1 Cattle Prices

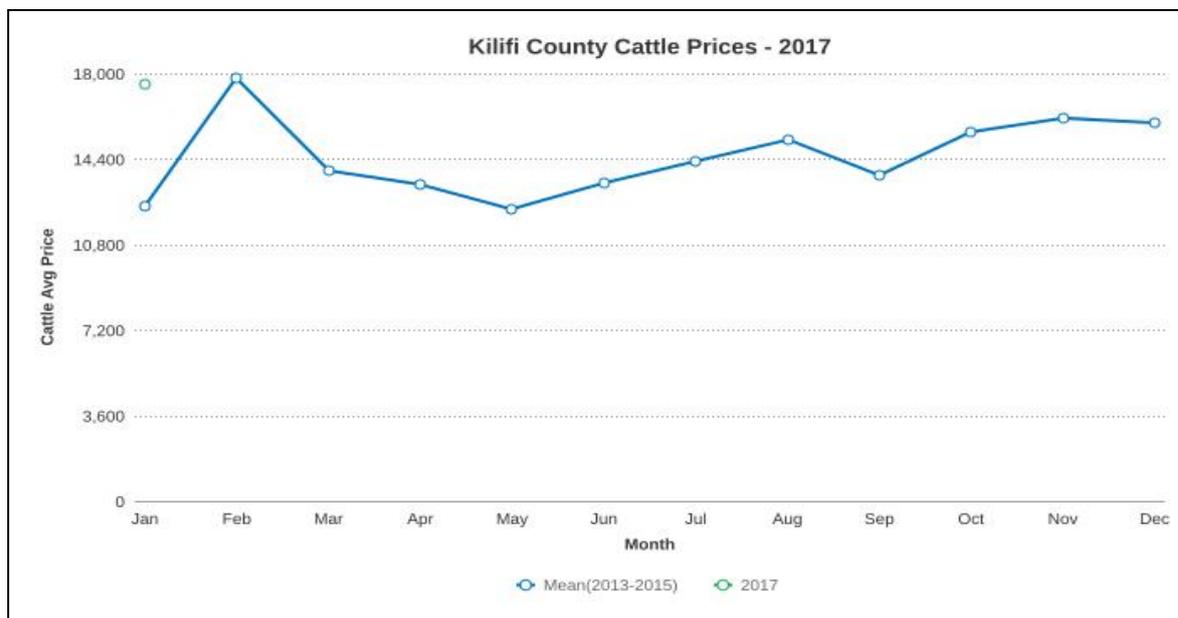


Figure7: Average cattle price (4 year bull/steer) in major livestock markets in Kilifi County.

- Average cattle price increased further from Kshs11,000 recorded the previous month to Kshs17,500 in the current month
- Increase can be attributed to low cattle supply in the market and improved body condition in areas of Bamba.
- The highest price was recorded in the ranching zone at kshs30,000 while the least price was recorded in the marginal mixed farming zone at kshs6,000
- The average price recorded in the month of January was higher than the long term mean.

4.1.2 Goat Prices

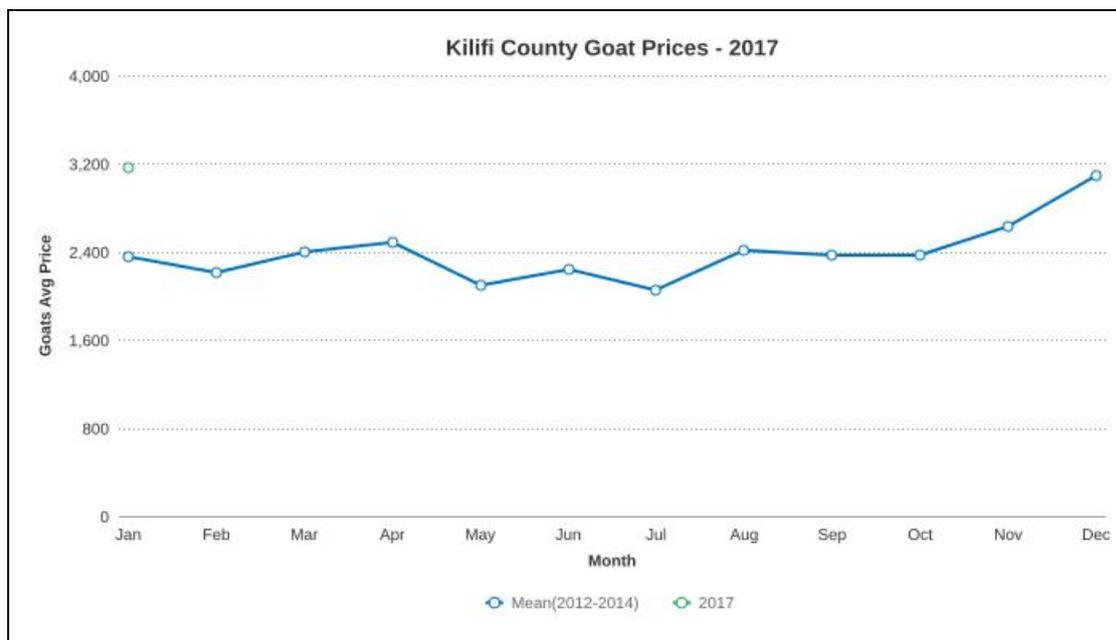


Figure 8: Average goat price (2 year old) at market level in Kilifi County.

- The average market price of a medium sized goat increased further to Ksh3,100 from Ksh2,200 recorded in the previous month as the body condition for goats remained good and stable occasioned by the availability of browse.
- The highest average goat prices were recorded in the livestock farming zone at Ksh3,800 while the least prices were recorded in the marginal mixed farming zone at Ksh1900.
- The difference in price across the livelihood zones was occasioned by variation in body condition and breed.
- The price recorded in the current month was 29 percent higher than the long term mean price and also higher than the average price recorded in similar month last year.

4.2 Crop Prices

4.2.1 Maize

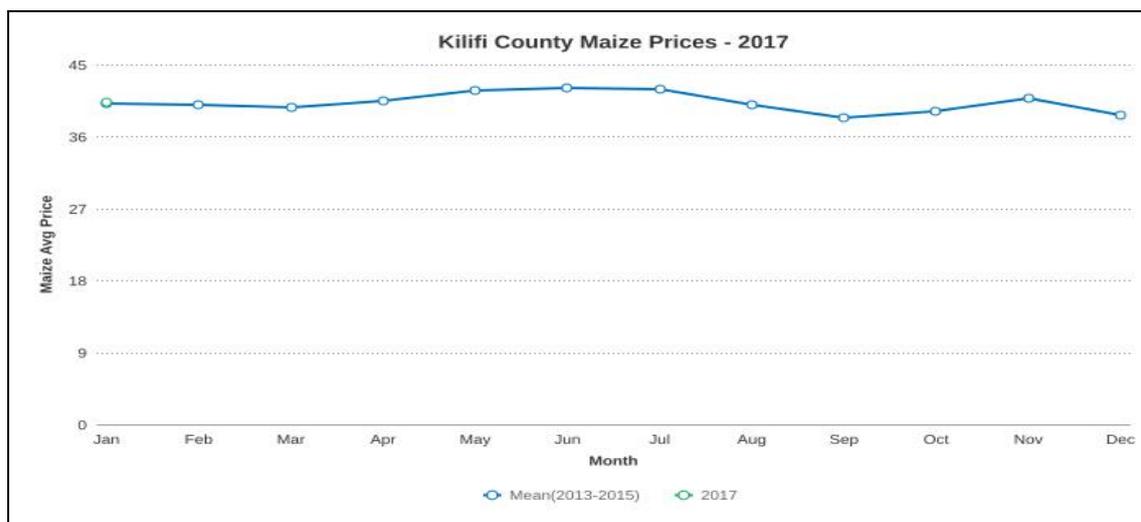


Figure 9: Average maize price in Kilifi County.

- Average maize price remained stable in the month of January as compared to previous month at kshs.43 as more households depended on sifted maize meal.
- The highest average maize price was recorded in the marginal mixed farming zone at Ksh45 while the least prices were recorded in the food cropping zone at Ksh38.
- The average price recorded in January comparatively similar to the long term mean price and also higher than the average price recorded in the same month last year

4.2.2 Beans

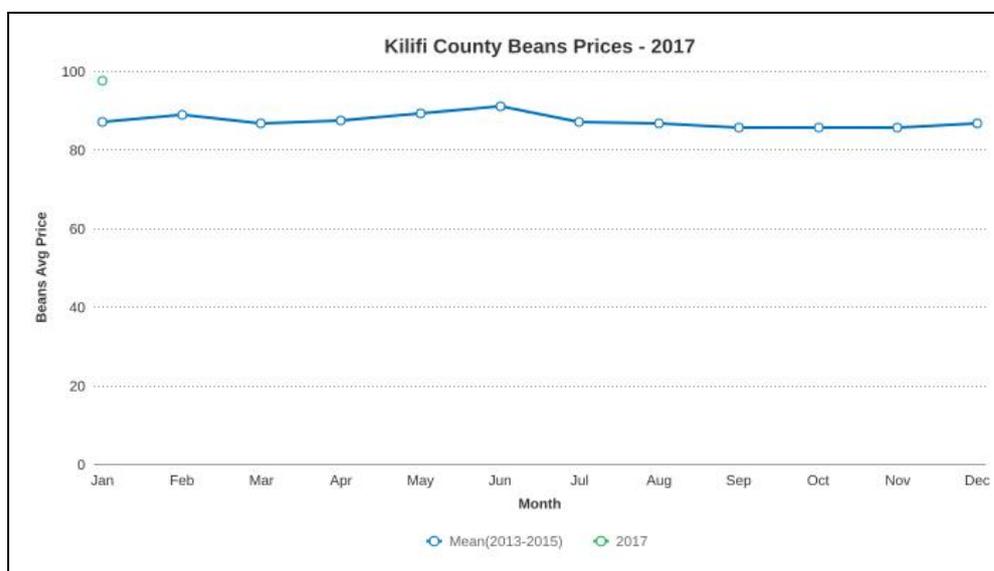


Figure 10: Average beans price in Kilifi County.

- Average beans price for the month under review was higher compared to the long term mean.
- High average beans' price can be attributed to failure green grams and cow peas harvest during the 2016 short rains and poor performance of the 2016 long rains and 2015 short rains
- The livestock farming zone recorded the highest average price of Ksh110 per kilogram while the food cropping zone posted the lowest average price of Ksh75 per kilogram.

- The average price recorded in January was 11 percent higher than the long term mean price.

4.3 TERMS OF TRADE

The terms of trade determines the purchasing power of livestock keepers.

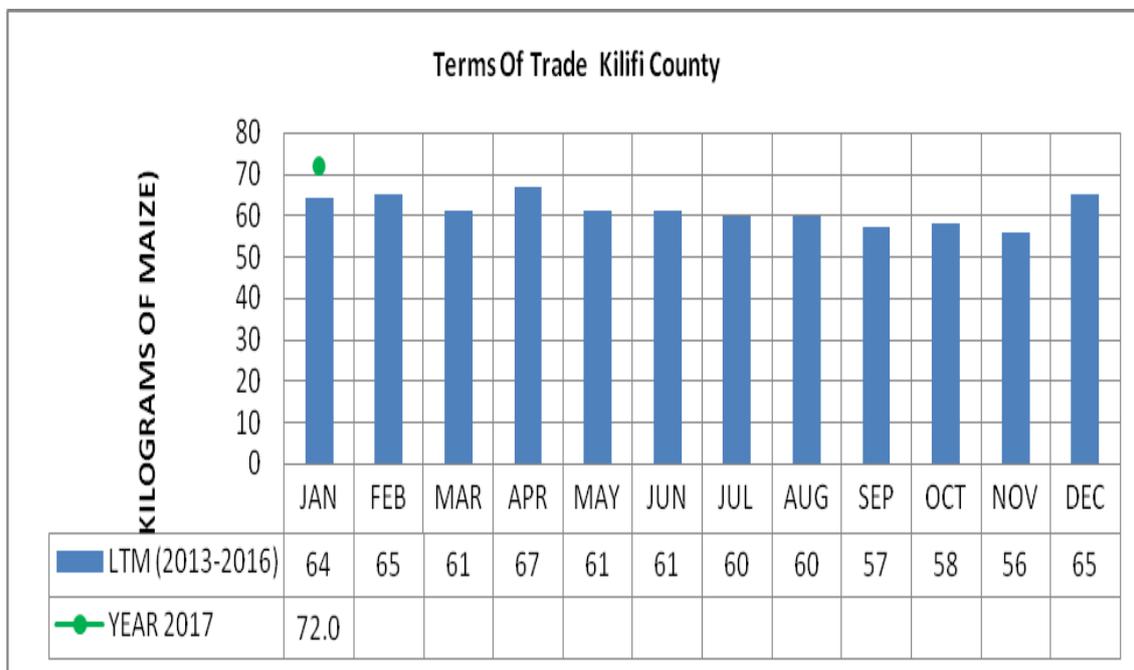
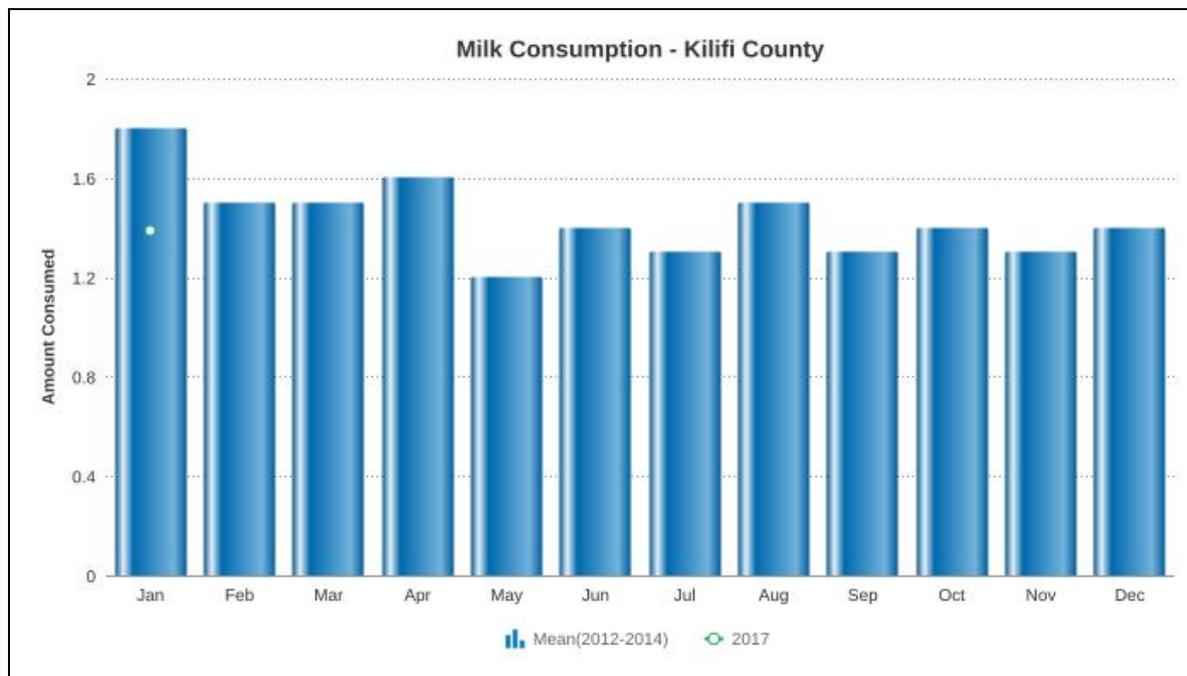


Figure 11: Terms of Trade in Kilifi County

- The terms of trade were improved in favour of livestock keepers in the month under review as compared to the previous month.
- The livestock keepers were able to buy 72 kilograms of maize by selling one goat as compared to 51 kilograms in the month of December last year
- There was variation across livelihood zones due to varying average price of maize and body condition of goats.
- The terms of Trade were lower compared to both the long term mean.

5.0 NUTRITIONAL STATUS

5.1 Milk Consumption



- For the households which produced milk, on average 1.4 litres were consumed by the households per day. This was 22 percent lower than the long term average milk consumed
- On average, 58 percent of the total milk produced in the month of January by households was consumed at household level while the rest was sold to supplement households' income.
- Average household milk price increased further as compared to previous month by 3 percent to Ksh60 per litre.
- Highest milk price was recorded in the food cropping zone with Ksh70 per litre while the lowest average price was recorded in the mixed farming zone with Ksh45 per litre

5.2 Health and Nutritional Status

5.2.1 Mid Upper Arm Circumference [MUAC]

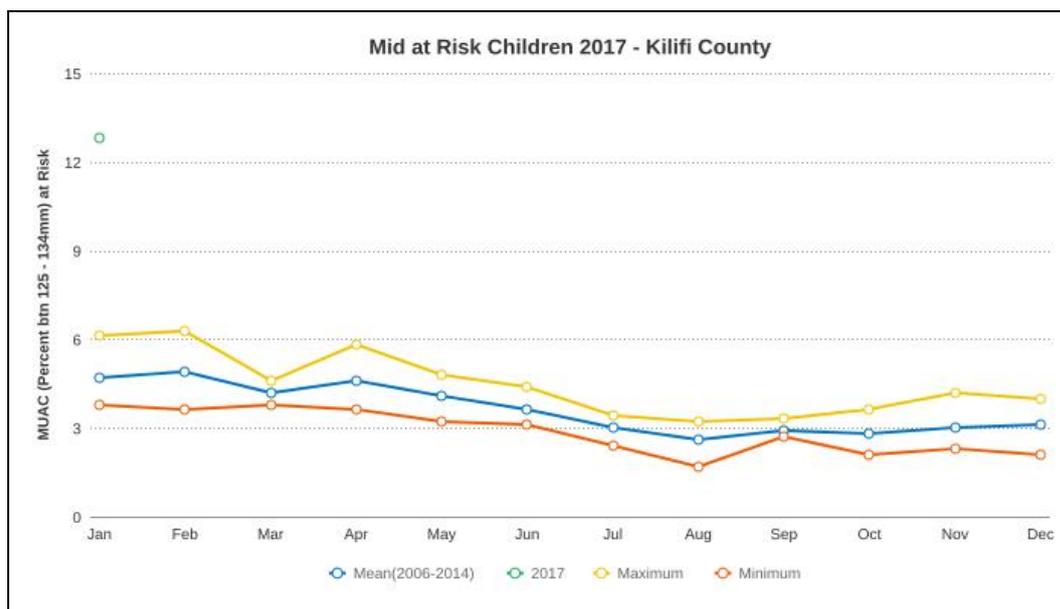
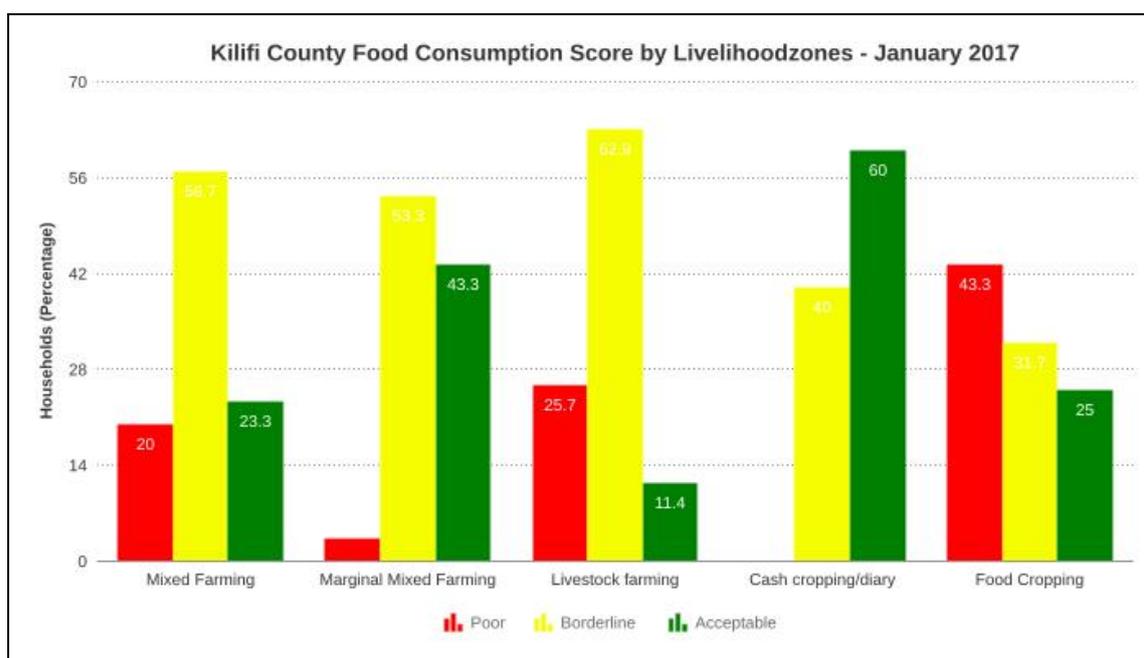


Figure 12: Proportion of children under five years at risk of malnutrition [n=811]

- The proportion of children at risk of malnutrition increased significantly in the month under review to 12.8 percent.
- The increase may be attributed extreme food shortage at households.
- Mwanamwinga and Mwarakaya sample sites in the marginal mixed farming zone and food cropping zone respectively recorded high proportion of children at risk of malnutrition with 9.5% and 4% respectively of all children sampled falling at the at risk cohort
- The proportion of children under five years at risk of malnutrition was higher than the long term mean and higher than the proportion recorded in January last year.

5.2.2 Food Consumption Score



- Due to food shortages, households were employing various coping strategies among them reduction in the number of meals per day and size of meals per serving and also withdraw of children from school to help in search for water and food.
- There was also lack of food diversity at household level with many consuming *Ugali* with *omena* or vegetables and pulses with minimal protein rich foods.
- Livestock and food cropping zones recorded the highest number of households with poor Food Consumption Score.

5.3 Coping Strategies

5.3.1 Coping Strategy Index

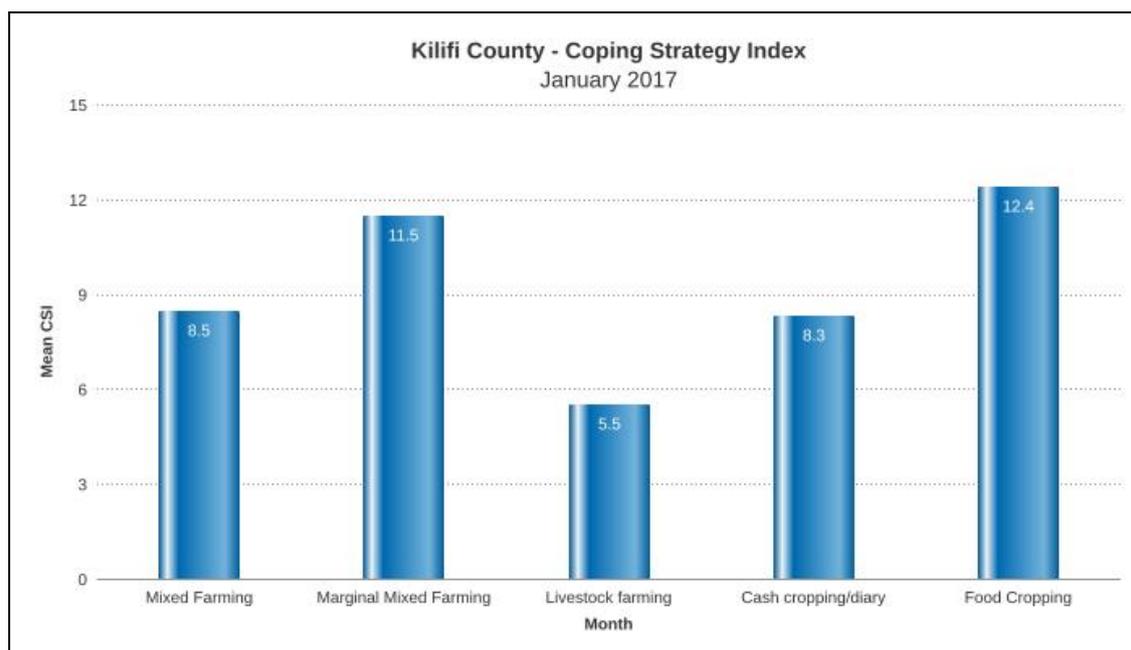


Figure 13: Coping Strategy Index for Kilifi County

- The county average Coping Strategy Index in the month of January was 9.64
- This indicates that household food shortage was evident with minimal improvement at households across the county.
- The food cropping and marginal mixed farming zones recorded the highest mean CSI in the county indicating that food shortage was high in households in this zones.
- The more prevalent coping mechanisms employed by households that faced food shortage in January were;
 - Reduced quantity of food consumed by adults to ensure children get enough to eat
 - Reduction in number and meal per day
 - Borrowing food from friends and relatives.
 - Reduction in number and meal rations.
 - Opting for less preferred or cheaper meals.
 - Purchase of food on credit terms
 - Withdrawal of children from school due lack of food at home and school and lack of school levies.

6.0 CURRENT ONGOING INTERVENTION MEASURES

6.1 Food- aid

- Food (cereals and pulses) distribution by the national and county governments, well-wishers in Ganze, Kaloleni and Magarini sub counties
- Supplementary/ Therapeutic feeding program in health facilities by County Department of Health/UNICEF and Kenya Red Cross.
- Water trucking by the county and national governments and other well-wishers in Ganze, Magarini and Kaloleni sub counties.

6.2 Non-food aid

- Livestock feeds (150 tons of range-cubes, 6000 pieces of 2.5kg UMMB) supplementation distribution in Bamba ward in Ganze Sub County, Kayafungo and Mwanamwinga wards in Kaloleni Sub County, Adu ward in Magarini sub county by National, county governments and NDMA
- Promotion of dairy farming and beekeeping by the county government through livestock department.
- Cash transfers to the elderly, orphaned and vulnerable children, people with severe disability by National government.
- Support to irrigation farming by the county government through agriculture department.
- Cash for Asset by GoK/ WFP, World Vision, Kenya Red Cross Society and NDMA in Ganze, Kaloleni, Malindi, Rabai and Magarini Sub Counties to 12200 households.
- Cash transfers to 1000 vulnerable households in Ganze Sub County by Kenya Red Cross Society.
- Cash transfer by the County Government to 1750 households across the county.
- Community sensitization on conservational Agriculture by County Department of Agriculture and FAO.
- Community capacity building on appropriate infant and young child feeding practices (mother-to-mother support groups) by county department of Health, Plan International and World Vision.
- Promotion of maternal and child health in the county by Share programme (International Medical Corps) in collaboration with the county department of health.
- Mass screening (under-five years old, pregnant and lactating women) and outreaches in Bamba ward by NDMA, UNICEF, IMC and county department of Health.
- Promotion on local-poultry by Agricultural Sector Development Sector Programme across the county.
- Cattle Vaccination against Foot and Mouth Disease and deworming of cattle, goats and sheep.

7.0 EMERGING ISSUES

7.1 Food Security Prognosis

- Current food security places most livelihood zones at stressed phase while the ranching/livestock at crisis phase.
- The situation expected to continue deteriorating till the next seasons' harvest as 2016 short rains recorded total failure.

- Households continued to walk long distances in search for water for household use and this expected to continue increasing till next rainy season when the water pans and dams will recharge.
- 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 poor.
- Following the January 3-Month Vegetation Condition Index indicating extreme vegetation deficit, livestock body condition expected to deteriorate as pasture and water stress continued.

7.2 INDICATORS WHICH NEED CLOSE MONITORING

- Household food security across all livelihood zones
- Nutritional status of the under –fives and pregnant and lactating women.
- Water situation in the county as pipeline and water trucking remained main sources.
- Pasture availability and livestock body conditions
- Food aid distribution in relation to the county needs.
- Schools attendance as drought impacts on food security
- Livestock keeper-crop farmers conflicts along river Sabaki
- Air temperature
- Human-wildlife conflicts including snake bites
- School attendance from January 2017 to better mitigate drought impacts in schools
- livestock migration routes to guard against diseases and conflicts

8.0 RECOMMENDATIONS

- Increase investment in irrigated agriculture as rain-fed performed poorly with 2016 short rains recording total failure
- Increase number of beneficiaries under cash transfer programmes.
- Food support to households already in a crisis and stressed phases.
- Upscale the number of schools under school meals programme and introduction **of food for fees** as more children remained at home due to lack of fees and food both at school and at home.
- Water trucking to schools as schools open and dispensaries as water scarcity was evident.
- Support schools and dispensaries without water storage facilities for water trucking.
- Water trucking to areas of Ganze, Kaloleni and Magarini Sub Counties experiencing water stress
- Purchase and distribution of PUR, water treatment chemical to households using pans and dams.
- More investment on resilience building projects.
- More investment on preparedness projects (merger and strategic dams, fodder planting along the rivers and under irrigation)
- Diversification on livestock keeping; more investment on goat, bee-keeping and local chicken.
- Community sensitization on early livestock off take/disposal, formation of cooperative and feed conservation.
- Upscale of Livestock feed supplementation as pasture stress increased in in Ganze, Kaloleni, Magarini and Malindi sub counties to also include hay.
- Increasing the number of operational boreholes to support livestock in the ranching zone.
- Livestock disease surveillance as livestock migration was recorded in Ganze and Magarini sub counties in search for pasture and water.
- Livestock vaccination and deworming to improve their health.
- Promotion of small-scale irrigation on high value crops in order to contribute to household incomes and diversified household diet.
- Upscale mass screening to capture cases (under-fives, pregnant and lactating women) at risk of malnutrition or already malnourished for timely intervention.
- Support to health outreaches to sensitize the community on proper health seeking behavior and treatment or minor ailments
- Pipeline extension Kaloleni, Ganze and Magarini sub counties which are hard hit by drought.
- Vaccination against CCPP and NCD as household gave priority to food than animal health also following losing of significant number of cattle little support from households.
- Livestock offtake in Kaloleni sub county.