

**NATIONAL DROUGHT MANAGEMENT AUTHORITY  
TANA RIVER COUNTY  
DROUGHT EARLY WARNING BULLETIN FOR JUNE 2017**



A Vision 2030 Flagship Project



**JUNE EW PHASE**

**Drought Status: ALARM**



*Mipango ya kukabiliana na ukame*

**Drought Situation & EW Phase Classification**

**Biophysical Indicator**

The County is currently experiencing severe vegetation deficit as a result of poor performance of the seasonal long rains.

**Rainfall:**

- No significant rains were received in this month. The county received off-seasonal showers along the coastal regions of Kipini and recorded an average of 2.6 mm which is below normal for this time of the year. Much of the showers were received within the first and second dekad of this month.
- The vegetation condition.** The 3-month VCI indicates that the County continues to experience severe vegetation deficit recording a VCI of 18.62. A slight improvement was noted compared to the values of the previous month where the VCI was at 15.17. The vegetation condition remains poor in the county.

**Socio Economic Indicators (Impact Indicators)**

**Production indicators**

- Most of the livestock in Tana River County are migrating to Tana Delta and the neighbouring counties (Lamu and Kitui County). The other stocks have remained along river Tana.
- Pasture and browse conditions remains poor.
- Livestock body condition also remains poor.
- Milk production at household level slightly improved but remained below the normal range at 3 litres compared to the last month's which was at 2.6litres.

**Access indicators**

- Milk consumption at household level remained stable at 2.1litres compared to the last month where it was at 2.1 litres. Milk consumption remains below normal.
- The average livestock distance to the water sources remains above normal at 12 km compared to the last month where it was at 15.3 km. The return distance remains high compared to the normal distance of 6.6km.

**Utilization indicators**

The percentage of children under the risk of malnutrition within in June increased to 26.72 compared to that of May which was at 19.8. The poor nutritional status is attributed to low milk production and poor agricultural production in the livelihood zones.

**Early Warning (EW) Phase Classification**

LIVELIHOOD ZONE	EW PHASE	TRENDS
Pastoral	Alarm	worsening
Marginal Mixed Farming	Alarm	worsening
Mixed Farming	Alarm	worsening

Biophysical Indicators	Value	Normal ranges
rainfall (% of Normal)	2.6 mm	>5.2mm
3-Month VCI	18.62	>35
State of water sources	2	5

Production indicators	Value	Normal ranges
Livestock Migration Pattern	Not normal	Normal
Livestock Body Conditions	poor	Good
Milk production	3 litres	>86Litres
Livestock deaths (from drought)	Death reported	No death
Crops area planted (%)	Nil	67%of LTA

Access Indicators	Value	Normal ranges(LTA)
Terms of Trade (ToT)	55.5	75
Milk Consumption	2.1	>43.1Litres
Average return distance to the water sources	12 km	6.6 km

Utilization indicators	Value	Normal ranges
MUAC(% at mid-risk of malnutrition)	26.72%	<12(%)

<ul style="list-style-type: none"> <li>Short rains harvests</li> <li>Short dry spell</li> <li>Reduced milk yields</li> <li>Increased HH Food Stocks</li> <li>Land preparation</li> </ul>	<ul style="list-style-type: none"> <li>Planting/Weeding</li> <li>Long rains</li> <li>High Calving Rate</li> <li>Milk Yields Increase</li> </ul>	<ul style="list-style-type: none"> <li>Long rains harvests</li> <li>A long dry spell</li> <li>Land preparation</li> <li>Increased HH Food Stocks</li> <li>Kidding (Sept)</li> </ul>	<ul style="list-style-type: none"> <li>Short rains</li> <li>Planting/weeding</li> </ul>								
<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sept</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>

## BIO-PHYSICAL INDICATORS

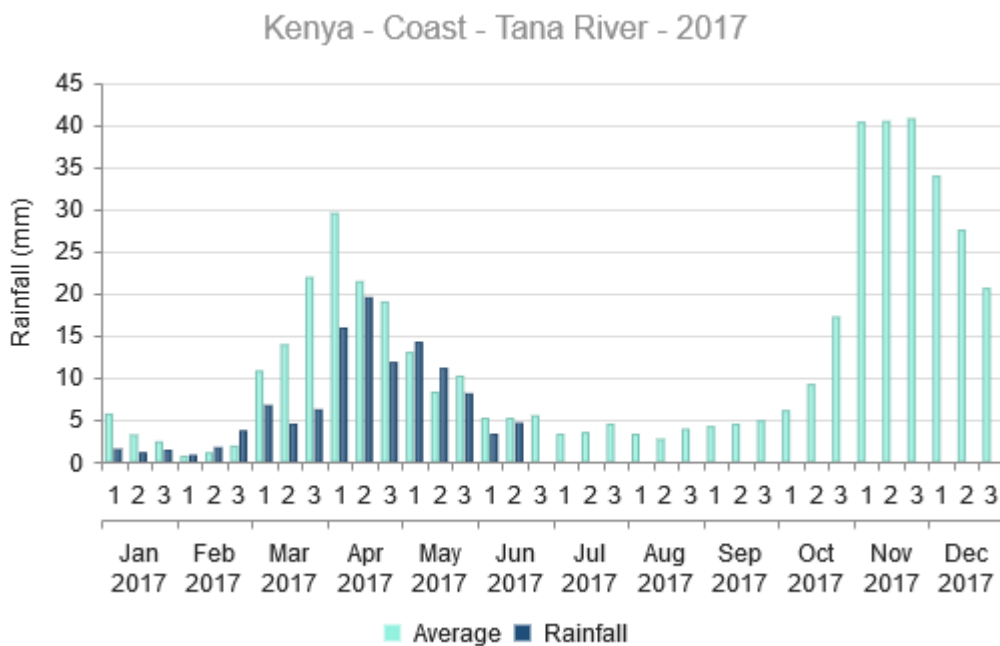
### 1. CLIMATIC CONDITIONS

#### 1.1 Rainfall performance

#### 1.2 AMOUNT OF RAINFALL AND SPATIAL DISTRIBUTION

##### Rainfall situation data

- The long rains cessation occurred within the second dekad of May. No major rainfall was received in this month.
- The county received an off seasonal downpour in the coastal regions of Kipini recording an average of 2.6mm of rain in this month. These showers were experienced in the 1<sup>st</sup> and 2<sup>nd</sup> dekad of this month.
- The graph below shows the rainfall amounts received and compares it to the normal averages.
- The rains received in June were below the normal average of 5.2 mm.



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#### 1.3 AGRICULTURAL DROUGHT

- The 3-M Vegetation Condition Index indicates that the county is experiencing severe vegetation deficit recording a VCI of 18.62 by the end June as compared to the month of May which stood at 15.17.
- In comparison to same time previous years, the vegetation conditions are below the historical minimum.
- The matrix below shows the vegetation condition for this month;
- The county has continuously experienced severe vegetation deficit in all the months of this year.

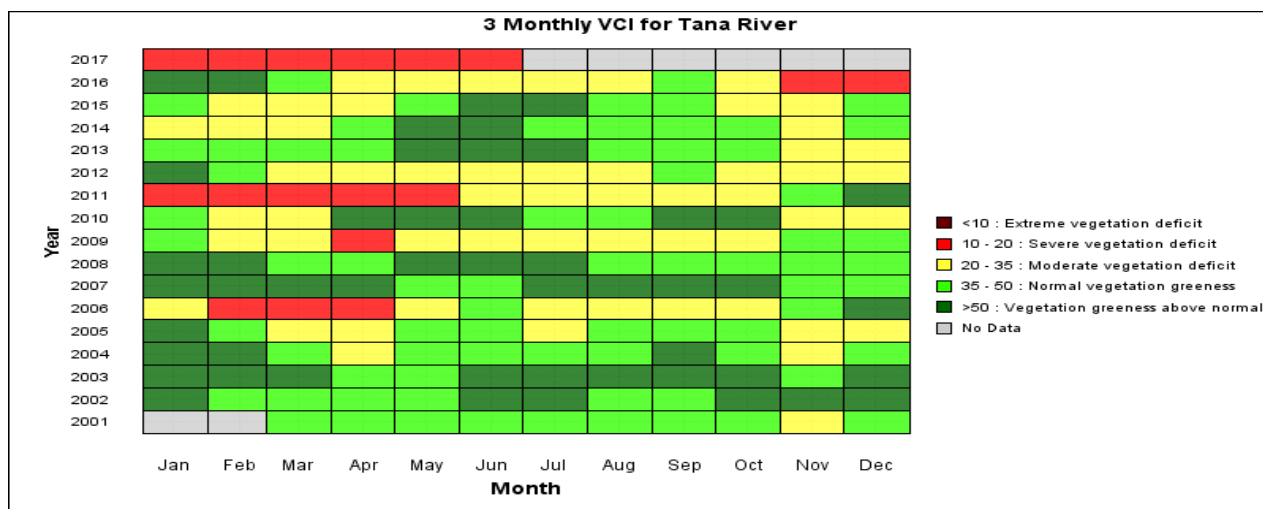


Fig. 2 Source: University of Natural Resources and Applied Life Sciences (BOKU), Institute of Surveying, Remote Sensing and Land Information

- The graph below show the 3-month VCI trend for June and compares it to the same time in 2016 values; the long term average, the maxima and minima.
- The vegetation condition in this month shows the county vegetation condition in June was 13% below the minima and 50% below the average.
- The county has recorded a below average vegetation greenness from November 2016 up to this month and as shown in the chart below.
- The county also recorded a VCI below the minima in the months of November and December in 2016, and in January, April, May and June in 2017. This is attributed to the poor performance of both the short and long rains in Tana River County.

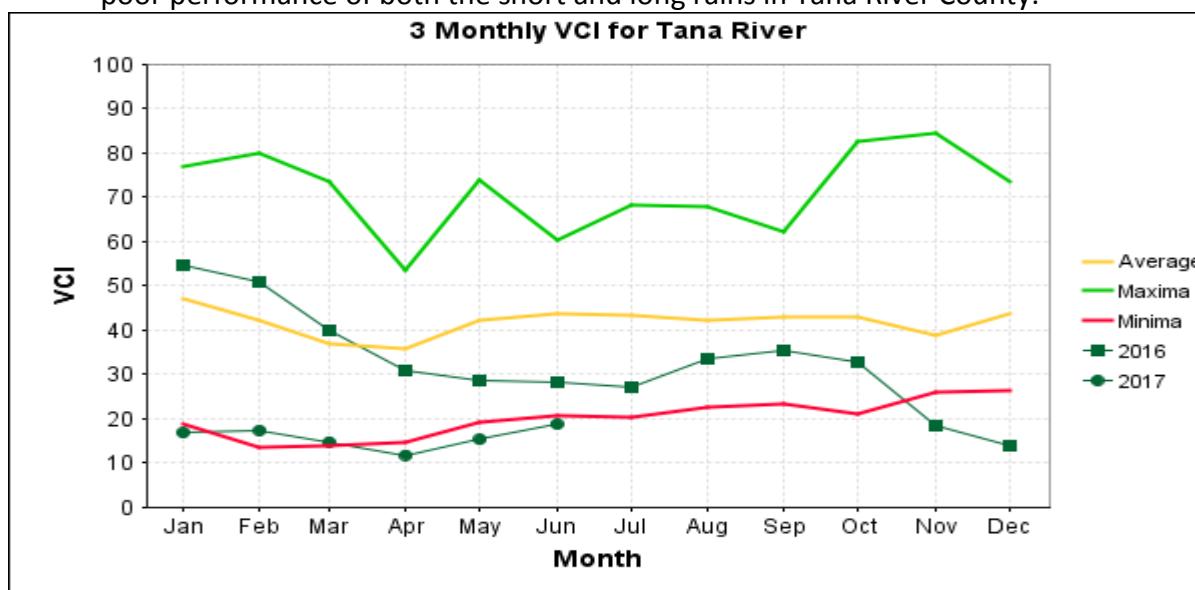


Fig. 3 Source: University of Natural Resources and Applied Life Sciences (BOKU), Institute of Surveying, Remote Sensing and Land Information

### Sub county VCI

All the three Sub Counties (Bura, Garsen and Galole) are experiencing severe vegetation deficit in this month.

## Bura

The 3-month Vegetation cover for Bura (Tana North Sub County) is currently at 18.73 compared to last month's VCI of 17.08. The vegetation condition is showing an improving trend in this month. The VCI of 18.73 still indicates severe vegetation deficit within Bura sub-county.

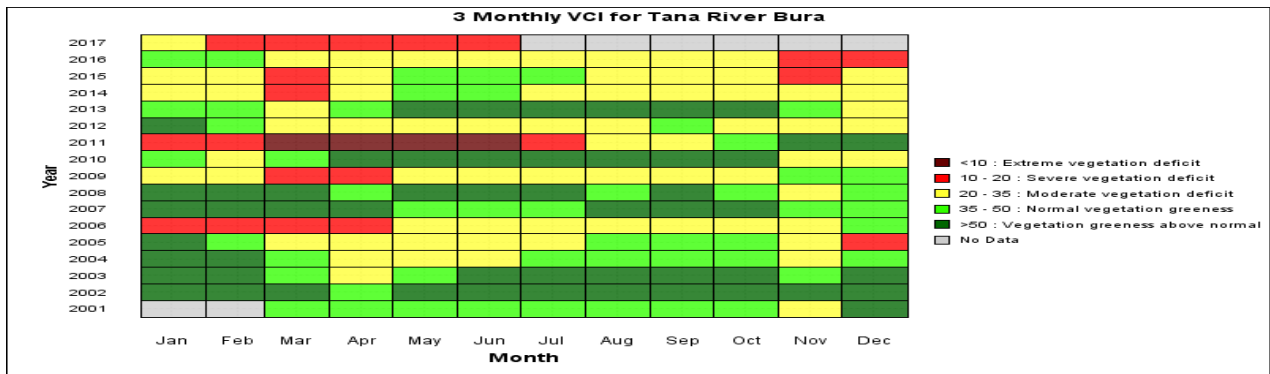


Fig. 4 Source: University of Natural Resources and Applied Life Sciences (BOKU), Institute of Surveying, Remote Sensing and Land Information

## Galole

The 3-month Vegetation cover for Galole is currently at 18.44 compared to last month's VCI of 15.36. The vegetation condition slightly improved in this month when compared to the previous month. The VCI of 18.44 still indicates severe vegetation deficit within Galole sub-county.

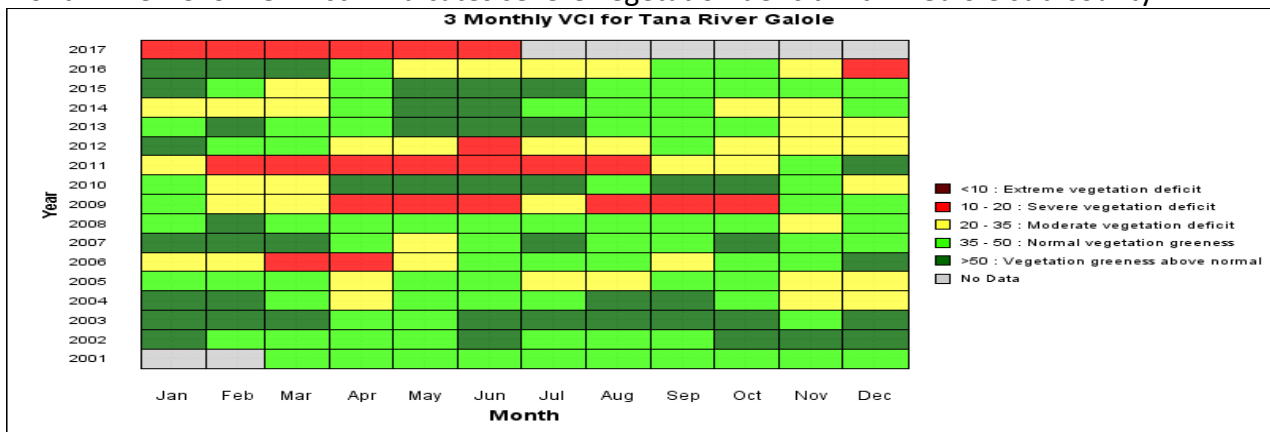


Fig. 5 Source: University of Natural Resources and Applied Life Sciences (BOKU), Institute of Surveying, Remote Sensing and Land Information

## Garsen

The 3 Month VCI for Garsen is currently at 18.64 compared to last month's VCI of 13.44. The VCI in this sub county slightly improved in this month. However, the VCI of 18.64 still indicates that this sub-county continues to experience severe vegetation deficit in this month.

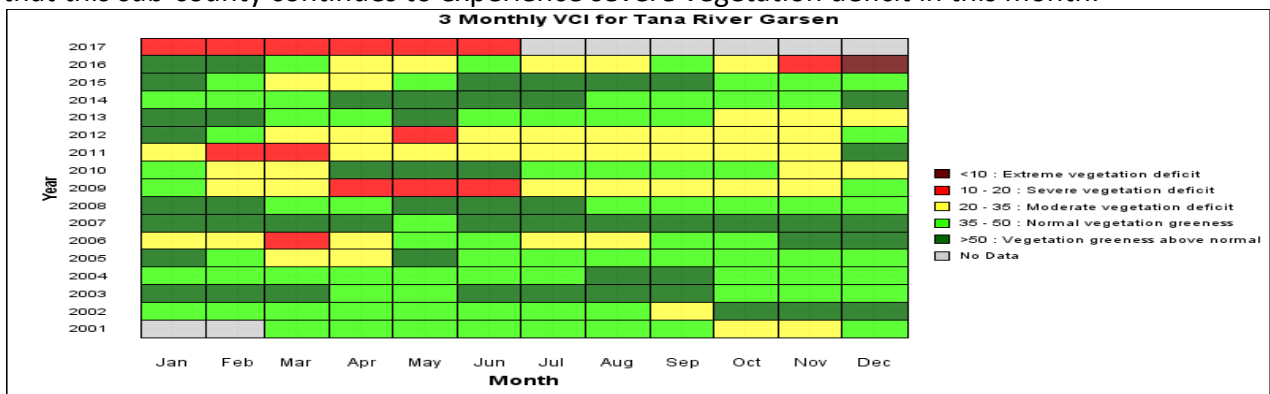


Fig. 6 Source: University of Natural Resources and Applied Life Sciences (BOKU), Institute of Surveying, Remote Sensing and Land Information

### **1.3 Field Observations (Pasture and Browse Conditions)**

#### **Quality**

- The pasture and browse quality in the county remains poor. This is attributed to the poor seasonal rainfall performance. During the season, the rain interval days were 2-3 weeks. High solar intensity were experienced in this interval days and this conditions greatly contributed to poor pasture regeneration in the county.
- The browse and pasture in Tana Delta region is currently fair due to the little showers experienced during the month of May and the off seasonal showers received up to the second dekad of June.
- The browse quality is fair compared to the pasture.
- The pasture and browse condition is already deteriorating though at a slow rate due to low temperatures that are currently prevailing.
- In Tana Delta the condition could be stable for a longer period but the livestock influx witnessed is going to affect this scenario.
- Pasture and browse conditions remain below the normal during this time of the year.

#### **Quantity**

- The quantity of Pasture and browse within the County is currently below historical normal at this time of the year.
- in the pastoral zone, pasture is expected not to last for more than a month compared to normal duration of 3months, while browse is expected to last for 1 month compared to normal duration of 4months.
- In the marginal and marginal mixed zones the pasture is expected to last for 1 month compared to a normal situation of 4months, while browse is expected to last for 2 months compared to a normal situation of 3 months
- The overall vegetation conditions in the county are poor and cannot sustain the livestock for more than 1 month if the present conditions prevail.
- Crop residues (straw) play a very crucial role in livestock food security since it can be stored for future use when pastures are not available. After the farmers harvest their crops, they negotiate and agree with pastoralists to cut and carry or even directly graze the animals on the farms. This temporarily supplements the natural pastures for the weakened animals.

### **1.4 WATER RESOURCE**

#### **1.4.1. Sources**

- Most of the communities within the pastoral, Marginal mixed and the Mixed farming livelihood zones depend on natural rivers, pans and dams for domestic and livestock water consumption.
- Settlements along River Tana are less water stressed, whereas, water scarcity is still there in the hinterland (pastoral livelihood zone).
- The households in the pastoral livelihoods zones are covering longer distances to fetch water as compared to the normal and this situation is expected to worsen with the poor performance of the Long rains.

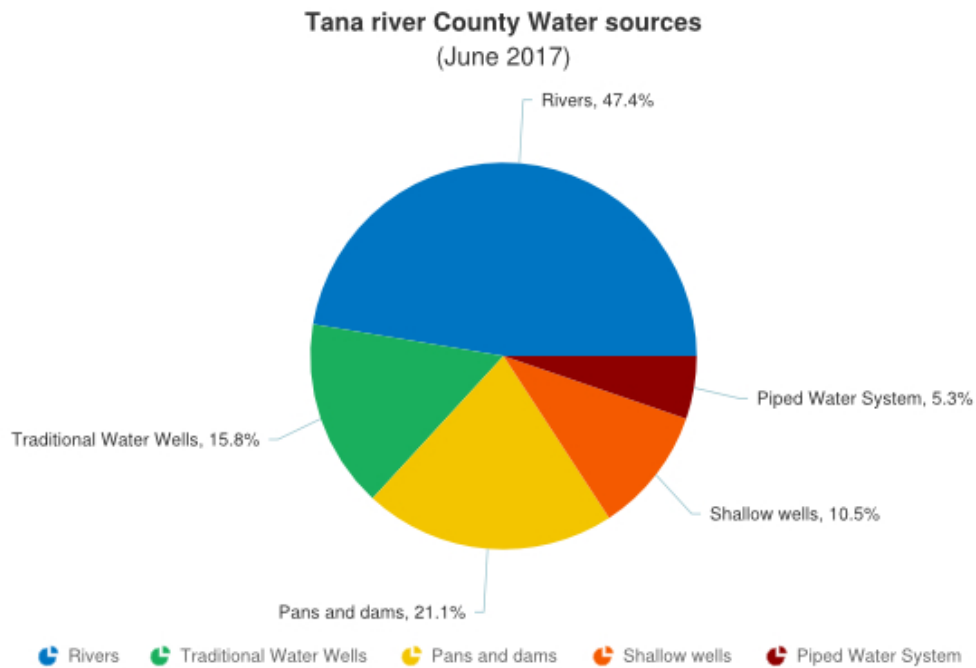


Fig 7.the figure above shows the different water sources in the county by the end of June 2017. The main community water sources in the county are currently; Natural River, traditional wells, pans and dams.

#### 1.4.2. Household access to Water

- The average return distance from the households to the main water sources in June was 4 kilometres.
- In comparison to May where distance covered from the households to the main water sources was 4.8 Kilometres. The distances slightly reduced in this month.
- Most of the H/H in the pastoral livelihood zones depends on pans and dams for their water needs.
- The households within mixed livelihood zones take approximately 2 hours to reach water points compared to households within Pastoral livelihood zones which take 3.5 hours to water points.
- The current distances are above normal in this season of the year.

#### 1.4.3. Livestock access to water

- The average distances covered by livestock from the grazing areas to main water sources in the month of June were 12 kilometres. .
- In comparison to the month of May where the livestock covered 15.3 kilometres, the distances covered by the livestock remains high in this month compared to the normal.
- This is attributed to the longer distances from the grazing fields due to the lesser rainfall amounts received during the season and also the poor distribution in space and time that lead to reduced pasture regeneration in most regions of the county.
- Most of the dams have not been recharged to the normal and the communities mostly depend on River Tana to provide water to the livestock.
- The distances covered by livestock to access water remains above the mean at this time of the year.

## Tana River County distance to grazing as compared to 2012-2015 averages

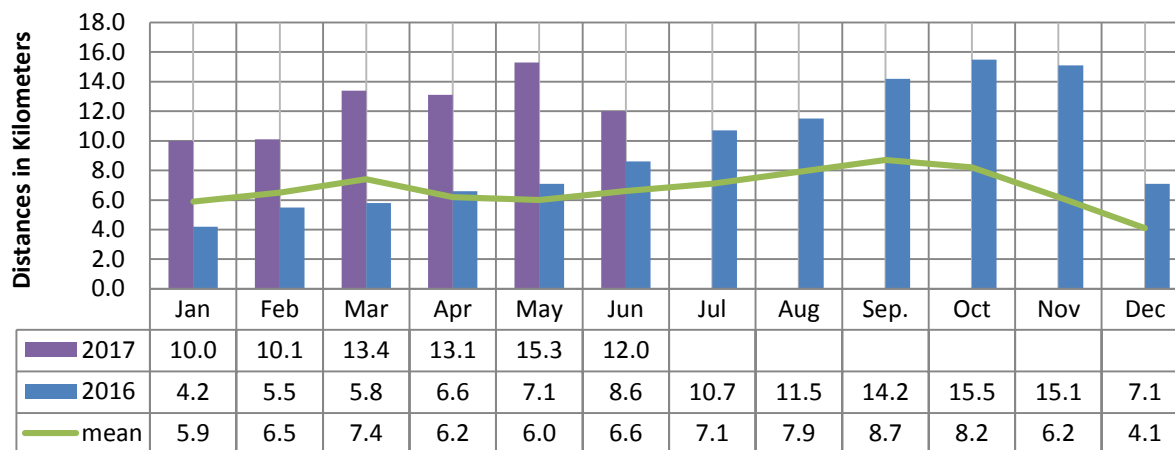


Fig 8 n=450 Households

### SOCIO-ECONOMIC INDICATORS

#### 2.0 PRODUCTION INDICATORS

##### 2.1.1 Livestock Migration Patterns

- Most of the animals especially the bovines continue to migrate towards the delta region of Tana delta.
- Livestock influx has already been witnessed in Tana Delta region and this is expected to continue thus creating a likely conflict occurrence between the farmers and the pastoralists.
- The major migratory route currently are,
  - Bangale - Waldena.
  - Bura – Chifiri – Waldena-Kitui
  - Ijara – Majengo – Boji – Hara – Haroresa-Assa-Tsavo
  - Waldena – Assa-Tsavo East
  - Bura – Dayate – Dadashkori – Mnazini - Sera – Garsen –Lamu
- Currently about 80% of cattle have migrated to Tana delta region and the trend is expected to continue into Lamu and Kilifi counties.
- The county is also a host of animals from North Eastern which are on Migration.

##### 2.1.2 Livestock Body Condition

- Livestock body condition for cattle is poor in all livelihood zones in the county, while that of goats and shoats is fair due to the seasonal rains which resulted into regeneration of fair browse.
- The livestock body conditions may start worsening in one month in the pastoral zone as browse reduces and water trekking distances increases.
- In the mixed and marginal mixed zones the animal body condition is fair but is expected to deteriorate if the current conditions prevail.
- Cattle are more vulnerable in the present conditions due to their feeding habits.
- The camels' body condition is still good across all livelihood zones in the County.
- The body conditions of all these livestock species are deteriorating at a high rate. This is attributed to the scarcity of pasture and the longer distances covered by livestock from

the grazing area to the water source. Livestock in pastoral livelihood still cover longer distance to the water source.

- Poor livestock body condition has led to reduced productivity hence reduced milk for consumption and for sale. This ultimately reduces household income. These conditions affect the milk prices thereby making it unaffordable to the poor households.
- Market prices for live animals remains high and eventually the animals will become unattractive to the buyers and this will lead to poverty and food insecurity on the dependents of this livelihood.

### 2.1.3 Livestock Diseases

The most prevalent diseases in Tana River County are vector borne like Trypanosomiasis, tick borne diseases, heart water and Babesiosis and Helminthiasis. Fleas and ticks infestation has been evident in most stock.

### 2.1.4 Milk Production

- On average the milk produced per household within Tana River County was 3 litres in the month of June. The amounts slightly increased in this month when compared to the month of May which was at 2.6 litres.
- In comparison to the long term mean, the current average in milk production is below normal average during this time of the year.
- This is attributed to the poor livestock body condition and also unavailability of pastures and browse for the livestock besides the longer distance they trek search of pasture and water.

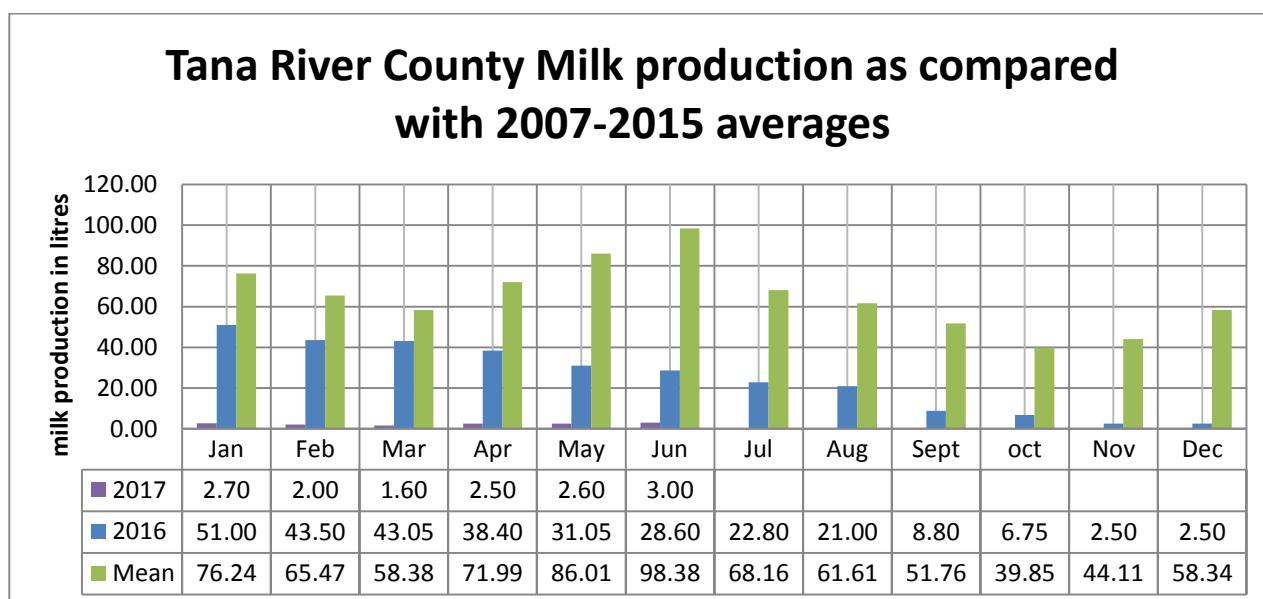


Fig 10n=450 Households

### 2.1.5 Livestock deaths

- No livestock death has been reported in this month.
- In the months of February, March and April, Livestock deaths were reported in several areas such as Waldena, Wayu, Chifiri, Hakoka, Bangale, Boka and Assa. Mortality of about 5% of cattle and 3% of sheep was reported across the county.
- The major causes were associated with the prolonged drought conditions which are still being experienced even after the seasonal rains.



## 2.2 Rain fed Crop Production

- The main crops grown under rain fed production are maize, green grams, cowpeas and water melon. Other major crops include mangoes, bananas and tomatoes.
- The little acreage was achieved this time was in mixed, marginal mixed farming zone whereas in the pastoral livelihood zone no planting/cultivation was done because there were no rains.
- Currently, there are no food stocks available at the household level in all the livelihood zones and heavily depend on purchased foodstuff and relief food from the county and national governments.

### 2.2.1 Stage and Condition of food Crops

Subsistence farms in regions along the River Tana planted maize, cowpeas and green grams. Crops are reported to be a knee high in Nanighi, Makere and Kipini regions.

## ACCESS INDICATORS

### 3.1 Livestock Prices

#### 3.1.2 Cattle Prices

- The average price of a mature 3 year old bull in the month of June was Kshs.15, 000. In comparison to the month of May, where the price of a 3 year old mature bull was Ksh.14, 433, the prices in June slightly increased.
- The increase in the cattle prices is attributed to market dynamics.
- The current cattle price of Kshs.15, 000 is above the normal at this period of the year as shown on the graph below.

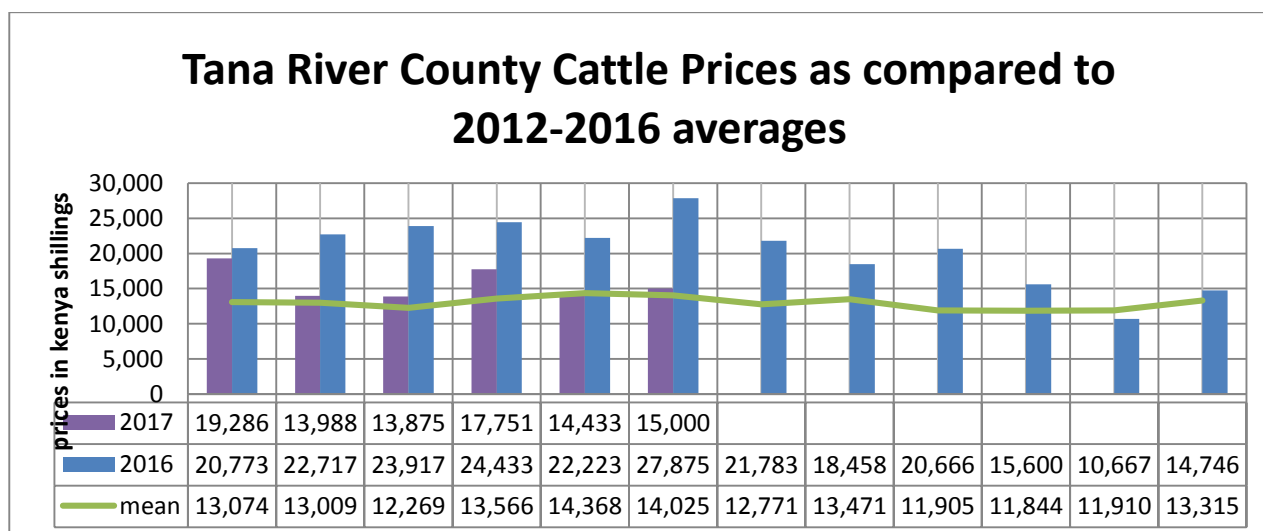


Fig 11n=450 Households

#### 3.1.3 Goat Prices

- The average price of a medium size goat in the month of June was Kshs.3500. In comparison to the month of May where the average price of a medium size goat was Ksh. 4000. The prices in June slightly reduced. The price variability is attributed to the market dynamics.
- The current goat price of Ksh.3500 remains above the normal at this period of the year as shown on the graph below.

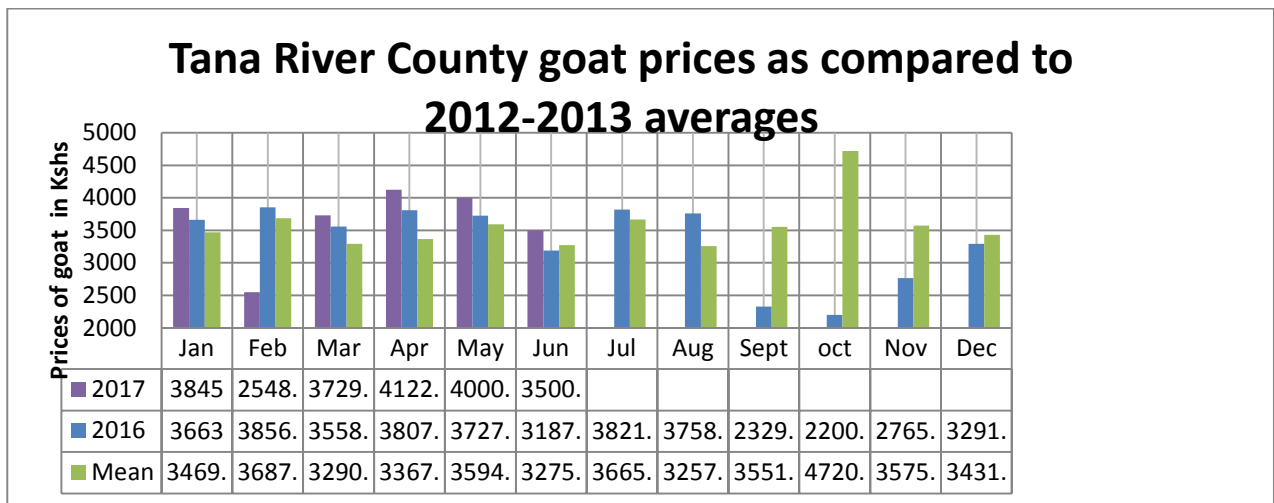


Fig 12n=450 Households

#### 3.1.4 Sheep Prices

- The average price of a sheep in the month of June was Kshs.2, 356. The prices slightly reduced in June when compared to that of the month of May which was at Ksh.2, 567.
- Compared to the mean of 2012-2015, the current price is above the normal prices of 2, 432 at this time of the year.

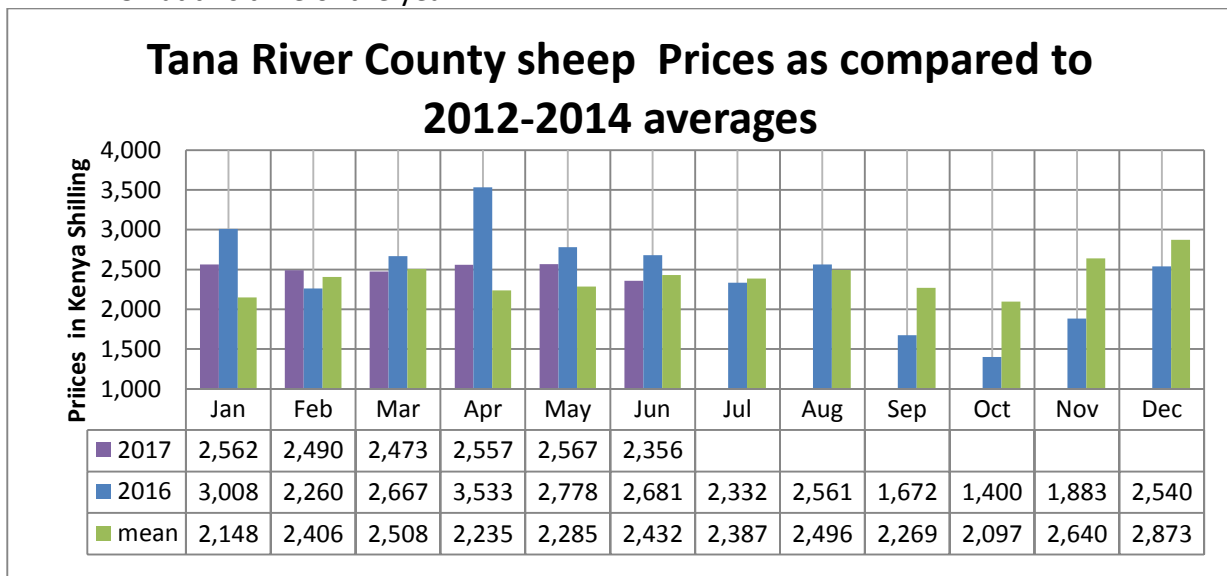


Fig 13n=450 Households

#### 3.1.5 Milk Prices

Currently milk is retailing at an average of Kshs.70 per litre. The prices remained high in June as compared to the month of May which recorded a price of Ksh 80 per litre. This milk price remains above the average prices recorded during this time of the year.

#### 3.1.6 Terms of Trade

Currently the terms of trade are 55.5Kg of maize for a goat. Compared to the month of May which recorded an average of 66.7, the terms of trade reduced in this month. The current terms of trade is above the long term mean of 75 Kg for a goat.

## Tana River County January TOT as compared to 2012-2013 averages

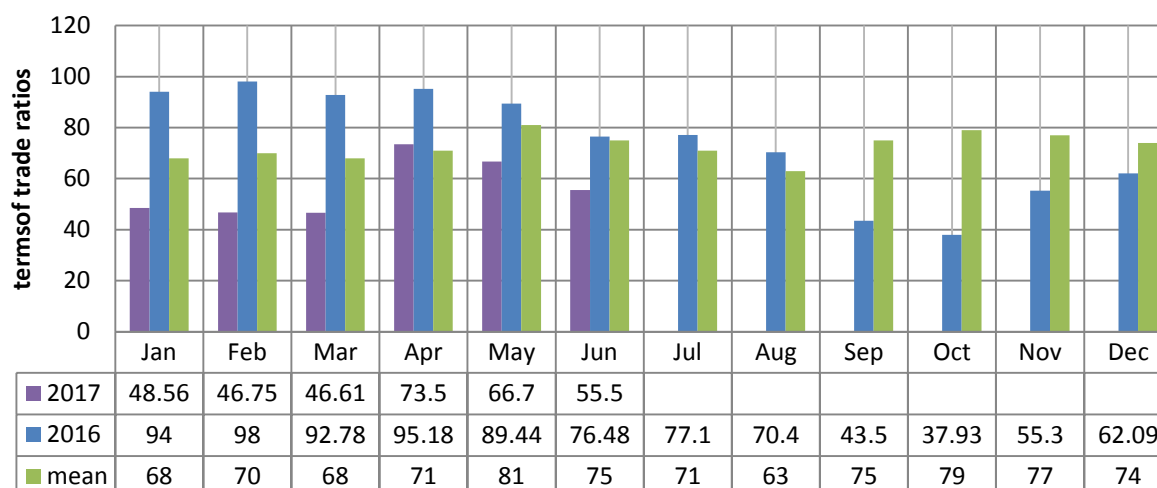


Fig 14n=450 Households

### 3.2 Price of cereals and other food products

#### 3.2.1 Maize

- The average maize price per kilogram for the month of June was Kshs.63.1.
- When compared to the month of May, where the average price per kilogram of maize was Kshs.60, maize prices increased by the end of June. This is attributed to the fact that lesser maize stocks are available at the markets.
- The communities do not have any stocks due to the poor harvest from the last season.
- In comparison to the average maize price at this time of the year, the current maize prices are above long term averages of Ksh 40 per kg.

## Tana River County 2016 maize prices as compared to 2012-2015 averages

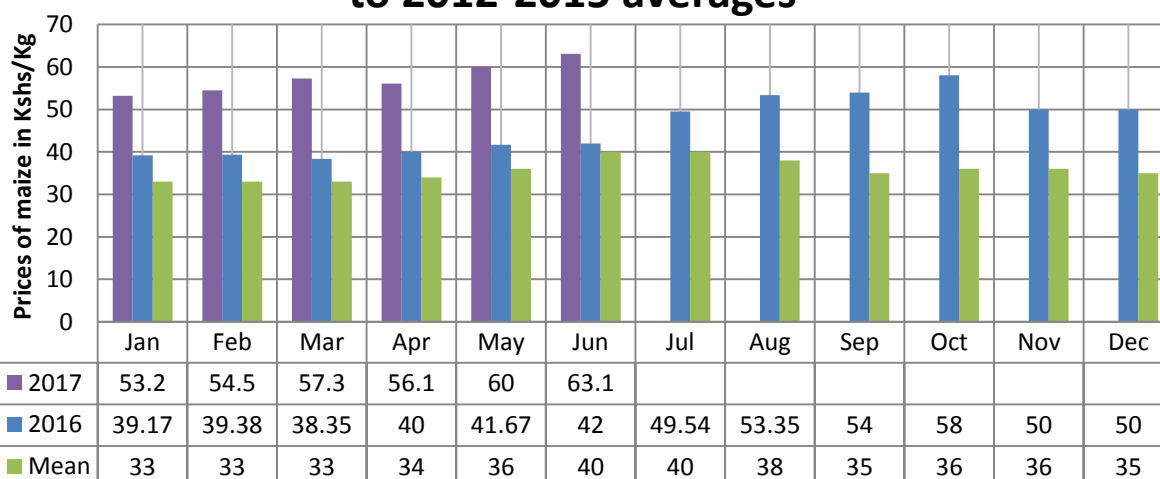


Fig 15 n=450 Households

### 3.3 Access to Food and Water

#### 3.3.1 Food Consumption score

#### 3.3.2 Availability of milk for household consumption

- On average the milk consumed per household was 2.1litres in the month of June.
- In comparison to the month of May, where the average milk consumed per household was 2.1 litres, the milk consumption remained stable the end of June.
- Meanwhile, water and pasture availability is not sufficient and the livestock are away from the households in search of water and pasture.
- In comparison to a normal year, the current milk consumption rate per household is below normal at this time of the year.

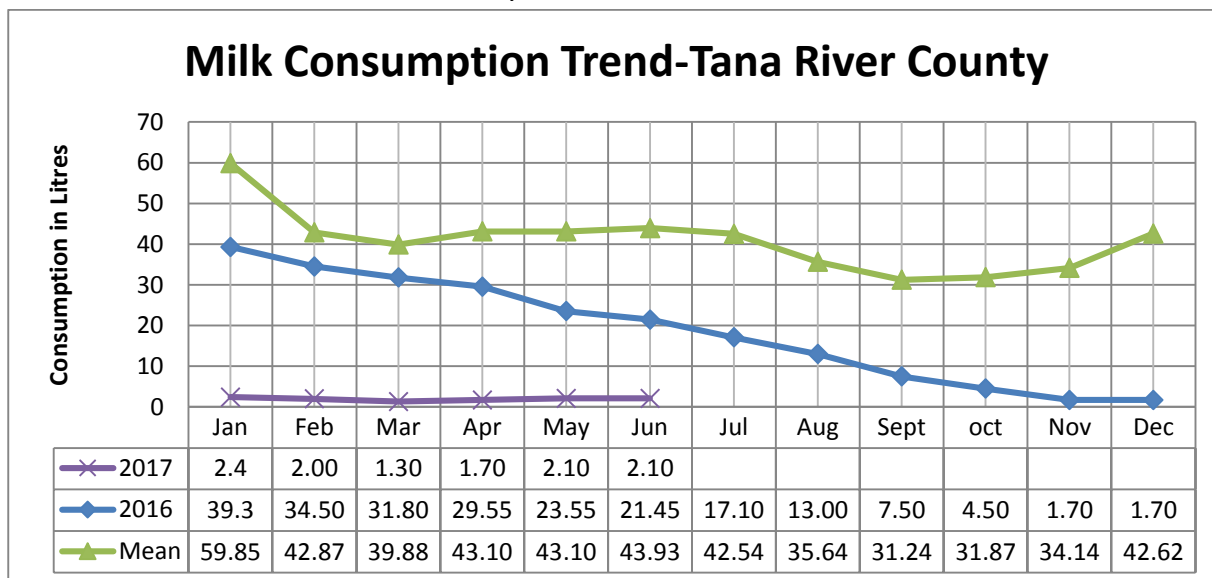


Fig 16 *n=450 Households*

## UTILISATION INDICATORS

### 4.1 Health and Nutrition Status

#### 4.1.1 MUAC

- The percentage of children under the risk of malnutrition within the month of June increased to 26.72 compared to that of May which was at 19.8.
- The increase in the number of the children at the risk malnutrition is attributed to the low milk production and consumption and also poor agricultural production.
- Compared to long term averages of 11.7%, the current percentage is above normal at this time of the year.

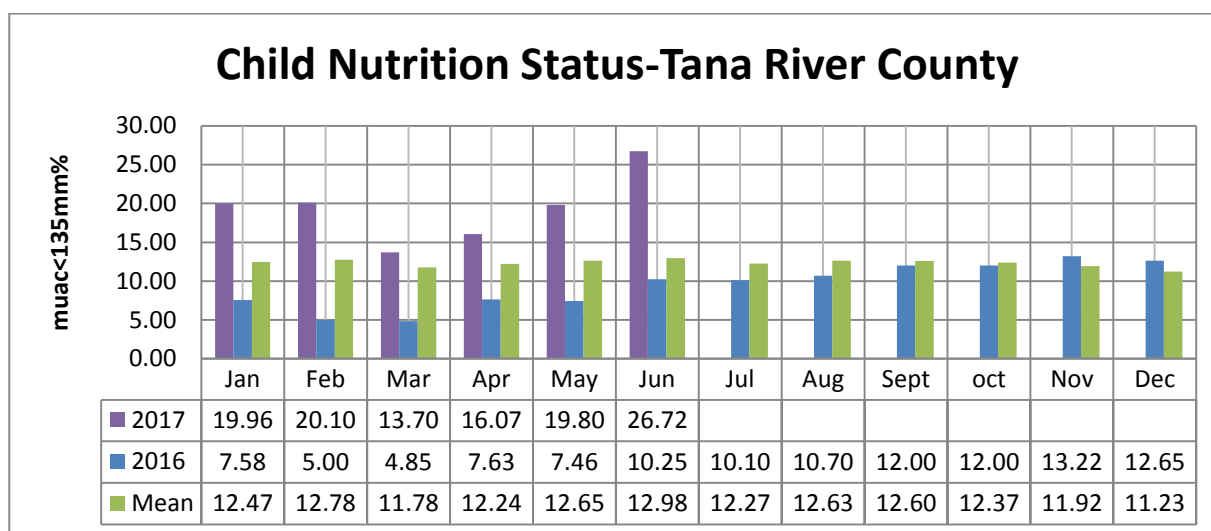


Fig 17n= 2,255 Children

## Health

- The most prevalent disease in the general population was Upper Respiratory Tract Infection (URTI) as result of dust and wind. URTI was also the most prevalent disease among the under-fives followed by diseases of the skin, attributed to low sanitation and hygiene practices.
- Up to 80 percent do not treat their drinking water. These are some of the factors, which have led to the increase of diarrheal cases in the county.

## Current Interventions and Recommendations

### 5.1 Non-food interventions

- Medical and preventive health outreach by NDMA/NDCF.
- Medical outreach of hard to-reach-areas are being undertaken by NDMA supported through National drought contingency fund(NDCF)
- Repair, maintenance and servicing of NDMA water bowser.
- Coordination and monitoring of drought response activities.
- Security surveillance, peace building, conflict resolution and management initiatives by the OOP, KRC, UNDP Peace Committees.
- Coordination of on-going activities by NDCF/NDMA.

### 5.2. Food Aid

- FFA targeting 45,900 beneficiaries in Tana delta and Tana river sub-county, supplementation of feeding program in the entire county targeting PLWC, agricultural market access and linkage project (AMAL), school meal program(SMP) in all 161 primary schools, will also be responding to provide food and non-food items to 700 households in need who are displaced by the floods in the entire county through KRC
- SFP/OTP with FFA/GFD linkage being undertaken by GOK, MOH, IMC UNICEF in all operational health facilities across the County
- RED CROSS-FFA-targeting 21,939 people within Tana River, Tana Delta and Tana North.PRRO/Food for Assets - The New PRRO beneficiary target for the county is 34,320 out of whom 45,900 households will be under FFA while GFD is 4,900. FFA activities include irrigation for crop production, range reseeding and rehabilitation, tree planting and construction of water pans.
- Some public primary schools and an equivalent number of ECD centres are under regular School Meals Program - current primary enrolment stands at 59,419 pupils.

- Food aid in terms of cereals, pulses and oil for the general public targeting 56,427 vulnerable people -by GOK.

## **Emerging Issues**

### **6.1 Insecurity/Conflict/Human Displacement**

- Tensions in Tana Delta are on the rise due to the increased in-migration of livestock as result of poor pasture in pastoral areas.
- Continuous peace meetings need to be conducted in order to maintain peaceful coexistence between the farmers and the pastoralists.

### **6.2 Other Shocks and Hazards**

#### **6.3 Food Security Prognosis**

- Recurrent failure of the seasonal rains for the last 3 seasons has negatively affected food security situation in all the livelihood zones in the county.
- With scarce pasture and water and the past poor harvests in the county, households have no food stocks and the prices of essential commodities continues to increase, making it inaccessible to most households.
- The food security situations in all the livelihood zones have worsened.

## **7.0. Recommendations for Action**

### **Recommendations by the County Steering Group/Kenya Food Security.**

- Peace building and community dialogues by NDMA/NDCF.
- Enhance relief food distribution in areas affected by drought.-Distribution of NFI to the affected households.
- Enhance support to small scale irrigation activities through provision of water pumps and restocking of vulnerable families to improve food security at household level.
- Disease surveillance within the areas affected by drought and the continuation of malaria control initiatives to undermine the prevalence rates.
- Destocking, livestock off-take, Feed supplementation and establishment of feed reserves.
- Disease surveillance, vaccination and de-worming
- Conduct integrated outreaches and health promotion activities, Treatment of Cholera cases, water sampling and decontamination of surfaces, Active case finding and provision of food supplements
- Explore sustainable measures to overcome incidences of human/wildlife conflicts which have become a food insecurity threat across the livelihood zones.
- Desilting of water pans, rehabilitation of shallow wells, pipeline extensions, water trucking.
- Construction of shallow wells and boreholes, Construction of pans and major dams along the laghas. Action: CSG, Ministry of Water and Other Partners