

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



A Vision 2030 Flagship Project



**May 2017 EW Phase**

**Drought Status: ALERT**



**Maandalizi ya mapema**

**Early Warning Phase Classification**

Livelihood Zone	EW PHASE	TRENDS
Mixed Farming	Alert	Stable
Marginal Mixed Farming	Alert	Worsening
Rainfed cropping	Alert	Stable
County	Alert	Stable
Biophysical Indicators	Value	Normal Range/Value
VCI-3month (Tharaka)	28	>35
Water Sources	Fair	Fair
Production Indicators	Value	Normal
Livestock Migration Pattern	Normal	Normal
Livestock Body Conditions	Fair to Poor	Fair
Milk Production	0.85 Litres	<1.44 Litres
Livestock deaths (from drought)	No death	No death
Access Indicators	Value	Normal
Terms of Trade	45	<85
Milk Consumption	0.72 Litres	<1.15 Litre
Water for Households	Fair	Good
Utilization indicators	Value	Range/Value
MUAC	9.7	<7.7
Coping Strategy Index (CSI)	24	<52
Food Consumption (Marginal Mixed Farming)	26 Percent Acceptable	>80 Percent Acceptable

**Drought Situation & EW Phase Classification**

**Biophysical Indicators**

- The month of May was characterized by poor rainfall performance coupled with intervals of sunny and dry weather conditions.
- The Vegetation Condition Index (VCI) was 28 indicating a severe vegetation deficit.
- The water recharge levels and availability were below normal.

**Socio Economic Indicators (Impact Indicators)**

**Production Indicators**

- The condition of pasture and browse was poor and fair respectively characterized by poor regeneration attributed to the delayed long rains onset and its intermittent distribution of the rains.
- Livestock body condition for cattle was poor to fair while that of small stock was fair across all the livelihood zones.
- Farming activities reported in the period under review were weeding and pests and diseases control. Most crops are at tussling/ponding and grain filling.

**Access Indicators**

- Livestock prices indicated a poor but stable trend and a steady increase in the prices of food commodities.
- Milk production and consumption per household was 0.85 litres and 0.72 litres respectively compared to an average production of 1.40 litres and an average consumption of 1.2 litres.

**Utilization Indicators**

- Percentage of children at risk of malnourishment whose MUAC was below 135mm was 9.7 percent for the period under review which was higher than the long-term average of 7.7 percent.

**Seasonal Calendar**

<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>								
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec

# BIO-PHYSICAL INDICATORS

## 1.0 MEASURING DROUGHT HAZARD

### 1.1 METEOROLOGICAL DROUGHT

#### 1.1.1 Actual Rainfall

- The onset of rains was in the first week of April with the dates varying from 6<sup>th</sup> to 7<sup>th</sup> April, 2017 which was late by three weeks.
- Rainfall across the county over the month of May was in falls of 5.0 - 50mm across Rainfed and Mixed Farming livelihood zones. The Marginal Mixed farming livelihood zone received 2-30.0mm, primarily in Tharaka North.
- The average recorded amount of rainfall received was 146.1 mm with an average of 6 rainy days from 4 recording stations.
- With reference to the long-term average, rainfall performance was below normal in comparison to a normal year.

#### 1.1.2 Spatial Distribution

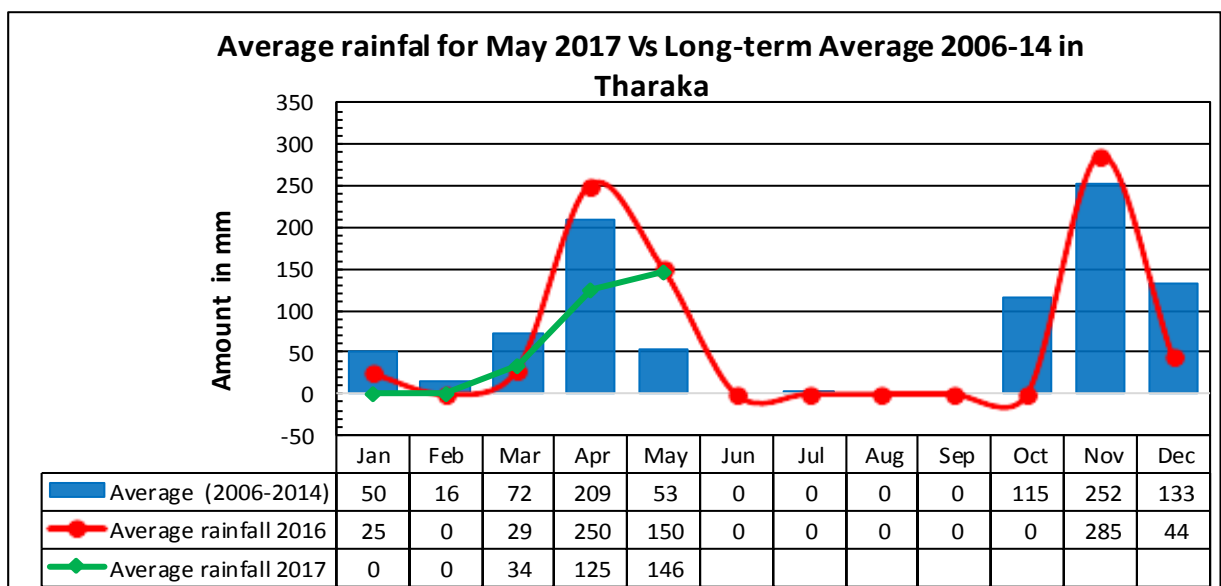
- The rains spatial distribution across the County was uneven as noted by 4 recording stations, though the Rain-fed cropping and Mixed Farming zones received slightly higher amounts of rainfall in comparison to the Marginal Mixed Farming livelihood zone.

#### 1.1.3 Temporal Distribution

- The recorded average amount of rainfall was 121.7mm for an average of 6 rainy days indicating poor temporal distribution.

#### 1.1.4 Rainfall Station data

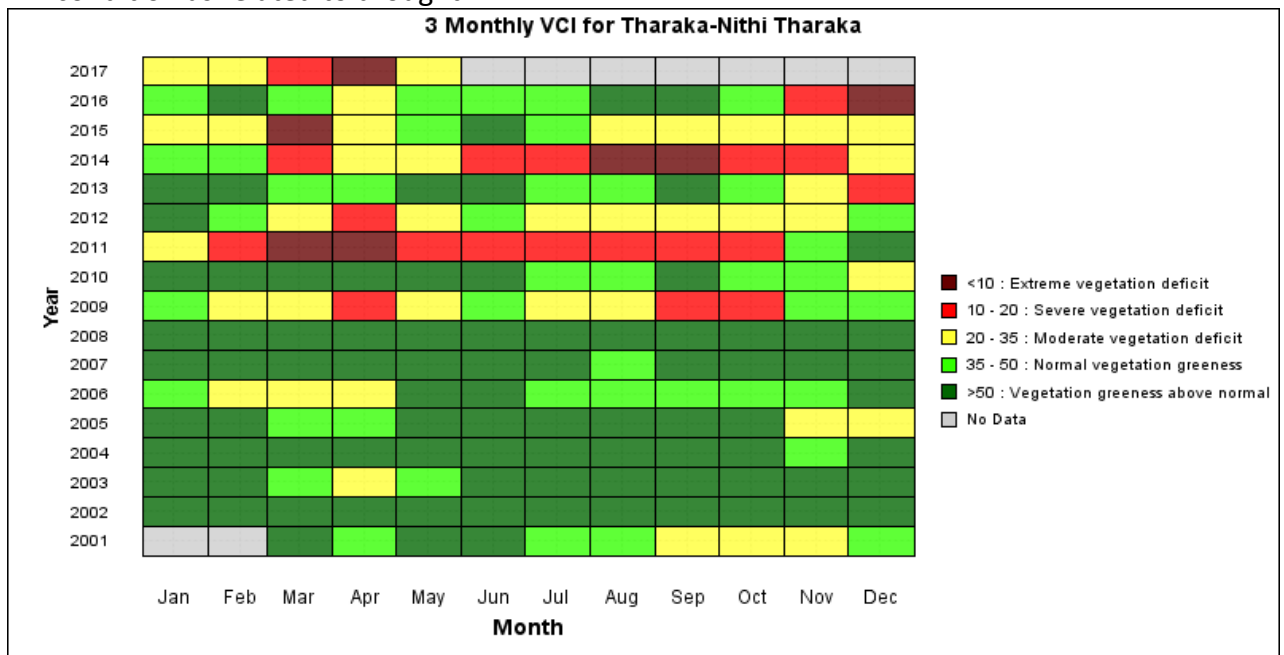
- The following graph shows the rainfall station data during the month under review.



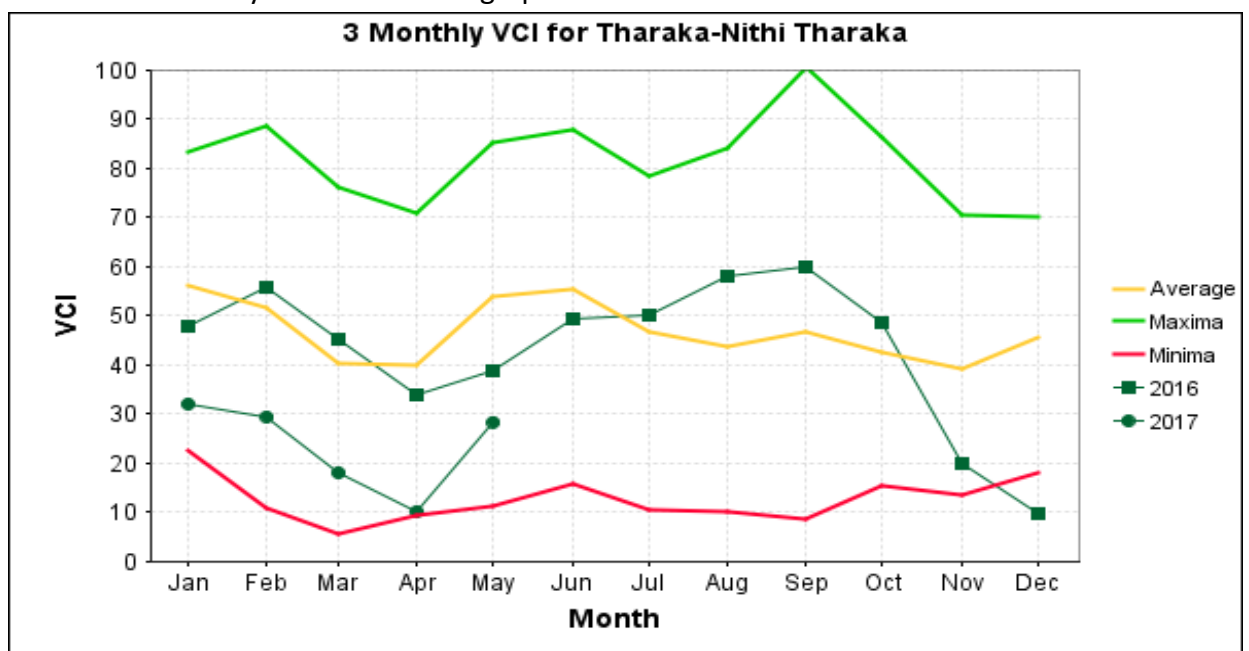
## 1.2 AGRICULTURAL DROUGHT

### 1.2.1 Vegetation Condition Index (VCI)

- The matrix below illustrates the period from March to May 2017, as classified as agricultural drought based on VCI thresholds. The matrix shows a retrospective analysis of the vegetation condition as related to drought.



- Tharaka was in Moderate Vegetation deficit band within thresholds of 28.2. The County's vegetation condition improved as suggested by an increase in the 3-month VCI index from 10 in April 2017 to 28 in May.
- The improved vegetation condition is attributed to the rains that were received in April and the first dekad of May as shown in the graph below.



### 1.2.2 NATURAL VEGETATION AND PASTURE CONDITION

Field Observations (Pasture and Browse Conditions)

#### Pasture Condition

- Pasture condition in terms of quantity and quality was poor attributed to the low rate of regeneration from the prior state of exhaustion and the intermittent performance of the just concluded MAM rainy season.

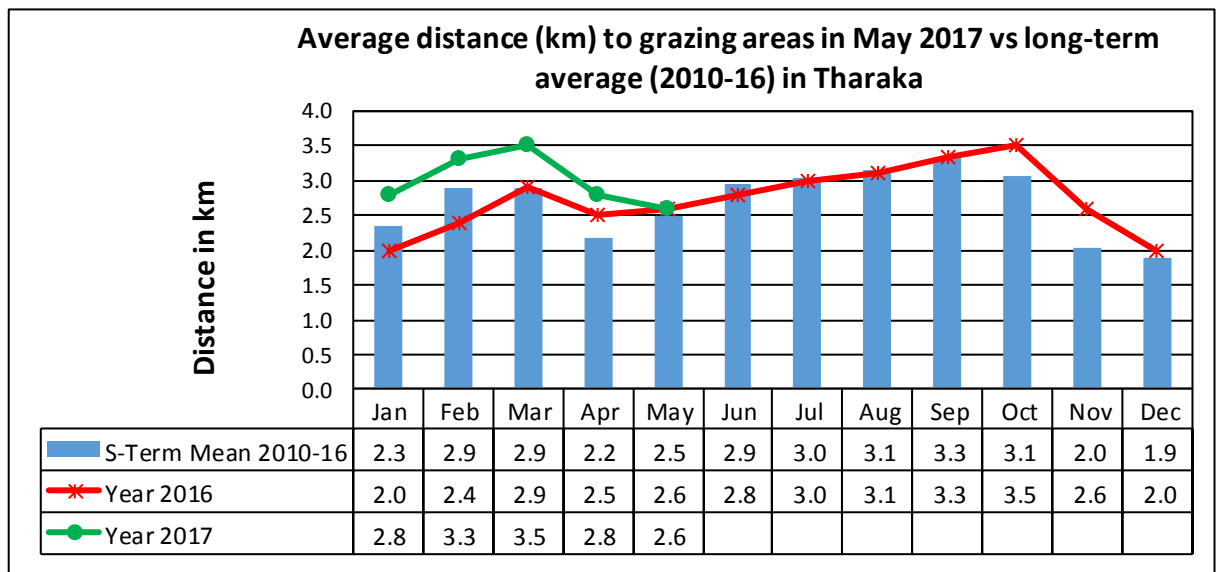
- The available pasture in most grazing fields especially in the marginal mixed farming is expected to be depleted in two to three months afterwards herders will be forced to look for alternative sources of animal feeds.
- The condition could be rated at poor-to-fair as opposed to the normal fair-to-good during this time of the year across all livelihood zones.

**Browse Condition**

- Browse condition in terms of quantity and quality was fair attributed to a significant rate of regeneration from the prior state of exhaustion and the intermittent performance of the just concluded MAM rainy season.
- Most areas registered an increase in *Vegetation Density* based on the Normalized Difference Vegetation Index (NDVI) received in dekad 1, 2 and 3 of May 2017.
- In comparison to a normal year, the available browse amount was below normal.

**1.2.3 Distance to Grazing Areas**

- There was stability in the average distance to grazing areas where it decreased marginally from 2.8km recorded in April to 2.6km over the period under review attributed to the impact of the rains on rangeland conditions.
- The longest return distance to grazing areas was recorded in the Marginal Mixed Farming at 3.8km, Rainfed Cropping and Mixed Farming livelihood zones recorded 1.9km and 2.5km respectively.
- The distance to grazing areas was 27 percent higher than the average of 2.2 km for this time of the year.



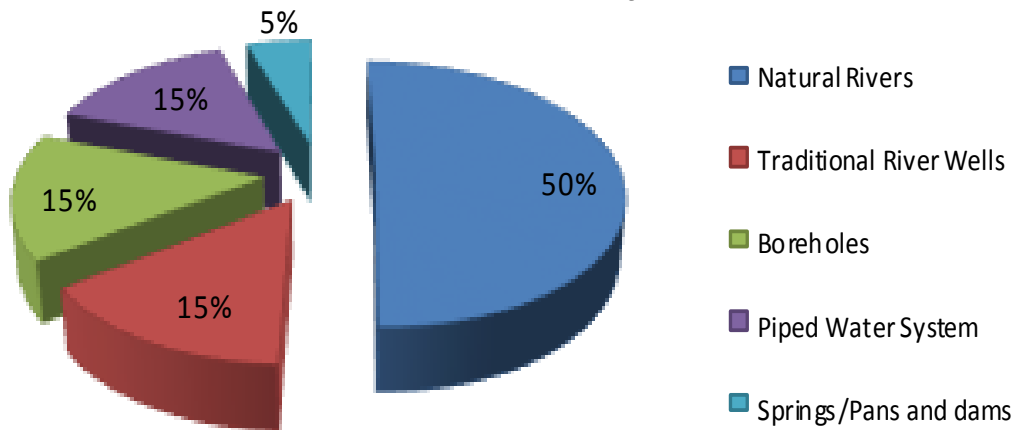
**HYDROLOGICAL DROUGHT**

**1.3 Water Sources and Availability**

**1.3.1 Main Sources of Water**

- The major sources of water for livestock and domestic use in Tharaka North and South Sub-Countries were natural permanent rivers, boreholes, piped water system and traditional river wells.
- The areas with low water availability were mainly in Marginal Mixed Farming livelihood zone which includes Marimanti, Gituma, Chiakariga, Kamanyaki, Kamarandi, Maragwa, Kathangachini, Gatue and Kanjoro locations where all the seasonal rivers had dried up and have had not any significant recharge since onset of the ongoing rains.
- Ground observations and reports show that the state of water sources was ranked at index 4 in reference to the scale below implying the water availability was below normal for the period.

## Main Water Sources for Tharaka in May 2017



INDEX	STATE OF WATER	DESCRIPTION
1	EMERGENCY SITUATION	All main water sources have dried up; only few boreholes still yielding significant amounts
2	STRONGLY INADEQUATE	Surface water sources have dried up while the underground water sources are yielding very little amounts of water. Breakages of boreholes contribute to worsen the situation. Acute water shortage in many areas within the livelihood
3	INADEQUATE	Surface water sources have dried up while the underground water sources are yielding modest amounts of water. Concentration of livestock around few water points contribute to spread communicable diseases and to degradation of rangeland
4	DECLINING	The water availability is below normal for the period, but showing declining trends.
5	NORMAL	The water availability is normal for the period
6	GOOD	The water availability is above normal for the period

## SOCIO-ECONOMIC INDICATORS

### 2.0 PRODUCTION INDICATORS

#### 2.1 Livestock Production

##### 2.1.2 Livestock Body Condition

- Livestock body condition for cattle was poor while that of shoats was fair across all the livelihood zones attributed to the deprived state of pasture and browse condition coupled with relatively long distances to water sources.

BODY CONDITIONS	SCORE	WARNING STAGE
Emaciated, little muscle left	1	Emergency
Very thin no fat, bones visible	2	
Thin fore ribs visible	3	Alert Worsening/Alarm
Borderline fore-ribs not visible. 12 <sup>th</sup> & 13 <sup>th</sup> ribs visible	4	Alert
Moderate. Neither fat nor thin	5	Normal/Alert
Good smooth appearance	6	
Very Good Smooth with fat over back and tail head	7	Normal
Fat, Blocky. Bone over back not visible	8	
Very Fat Tail buried in fat	9	

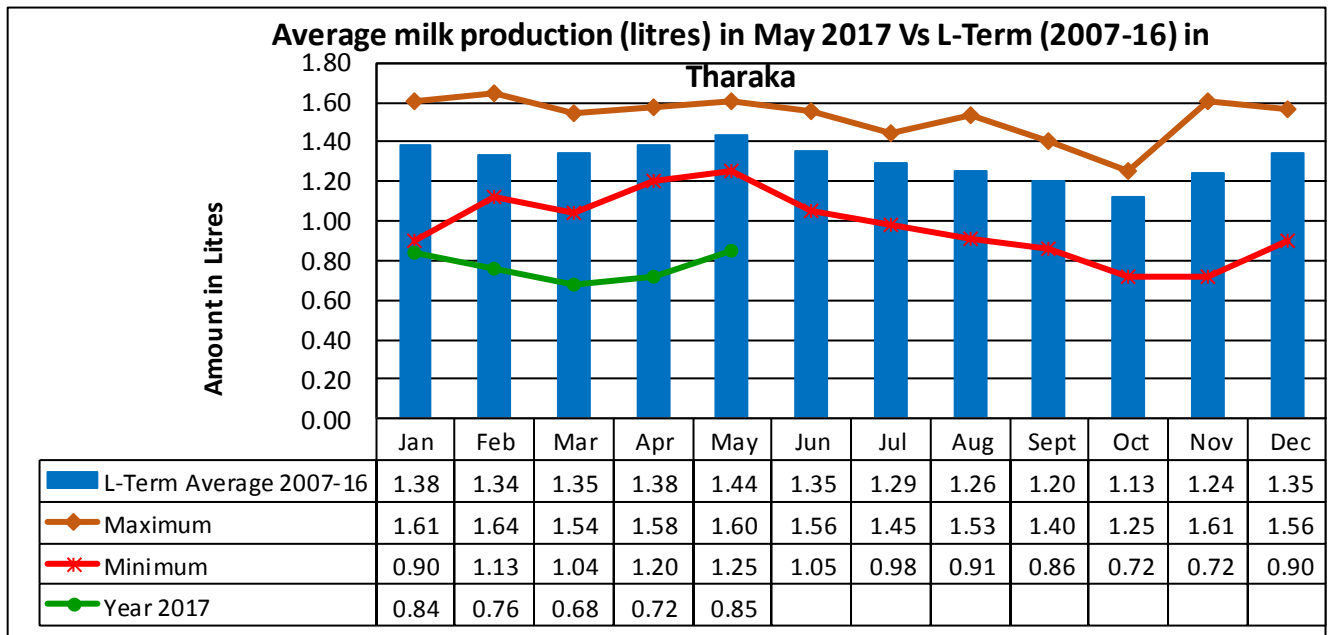
- For most livestock, current body condition can be rated at index 5 as per the threshold scale above

### 2.1.3 Livestock Diseases and Migration

- There were several incidences of infection and death of goats from sheep and goat pox in Tharaka North sub-county. Other diseases reported during the period under review were Contagious Caprine Pleuropneumonia (CCPP), Trypanosomosis, and Heart Water diseases, which are endemic across all livelihood zones.

### 2.1.4 Milk Production

- Milk production improved slightly to 0.85 litres per household from 0.72 litres in the previous month.
- The highest milk production was recorded in the Marginal Mixed Farming livelihood zone at 1.10 litres while Mixed Farming livelihood and Rainfed livelihood zone had 0.80 litres and 0.66 litres respectively per household.
- Milk production per household was 41 percent lower than the 10-year average attributed to the reduced TLUs in addition to poor condition of pasture and browse coupled with relatively long distances to water sources.



## 2.2 Crop Production

### 2.2.1. Timeliness and Status of Crops

- Farming activities over the month under review included weeding and pest control activities. Farmers who planted legumes right at the onset of the ongoing rains are prospecting harvests in mid-June.
- Crops are at a good state in the Mixed Farming and Rain fed Cropping livelihood zones as opposed to the Marginal Mixed Farming zone where state of crops is poor.
- Crops planted were green grams, sorghum, millet, cowpeas and groundnuts.
- No crop harvests were recorded during the month under review.

### 2.2.2. Pests and Diseases

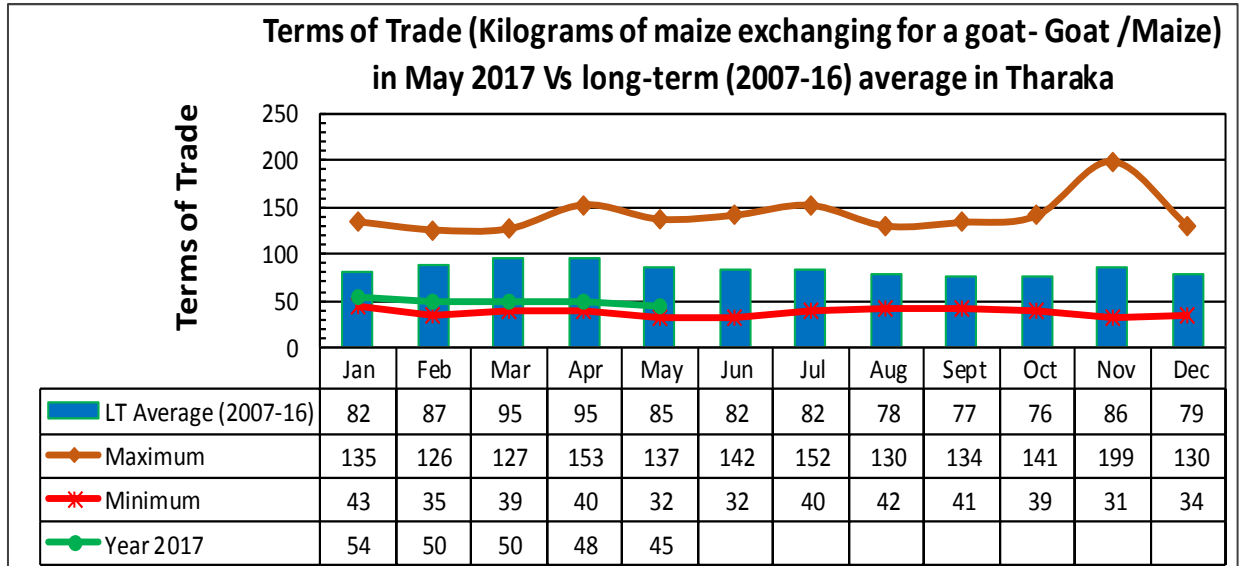
- Fall Army Worms' invasion on sorghum and millet that was reported in the Rainfed cropping livelihood zone was reportedly swept off by the rains that were received in the first dekad of the month under review.
- There were no major reports of pests' infestation across all the livelihood zones.

### 3.0 ACCESS INDICATORS

#### 3.1 Livestock Prices

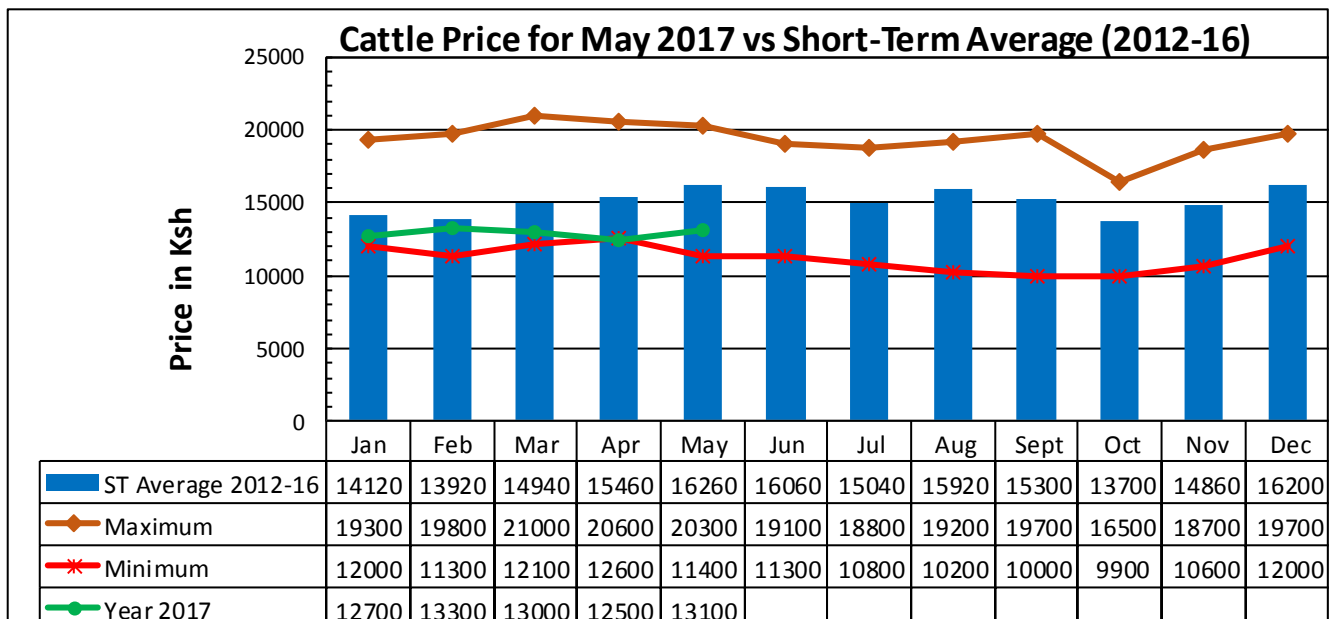
##### 3.1.1 Terms of Trade

- The Terms of Trade (the number of kilograms of maize a household would purchase after a sale of one goat) decreased slightly from 48 kg in the previous month to 45 kilograms in May, 2017.
- The highest ratio was recorded in the marginal mixed farming zone at 50 kilograms, while the mixed farming and rainfed cropping livelihood zones had the lowest ToT values of 41 and 5 kilograms respectively.
- The ToT for the period under review was almost half of the long-term average value during the same period.



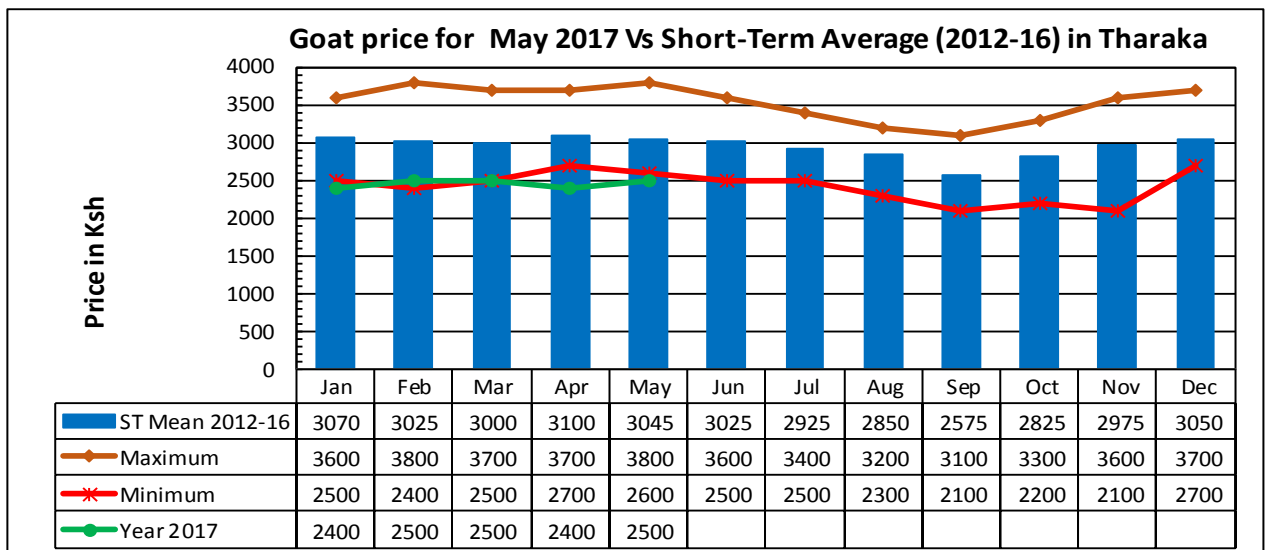
##### 3.1.2 Cattle Prices

- The average household cattle prices increased slightly from Ksh.12,500.00 recorded in the previous month to Ksh 13,100.00 in the month under review. Cattle prices continued to perform poorly at the farm gate and market levels, a factor that is partially attributed to the low demand and poor condition following the poor condition of pasture in all livelihood zones.
- The Marginal Mixed Farming livelihood zone had the highest average price of Ksh 13,500.00 while the Mixed Farming and the Rain fed Cropping had Ksh 12,900.00 and Ksh 13,000.00 respectively.
- The current price was 19 percent lower than the five-year short-term average of Ksh 16,260.00.



### 3.1.3 Goat Prices

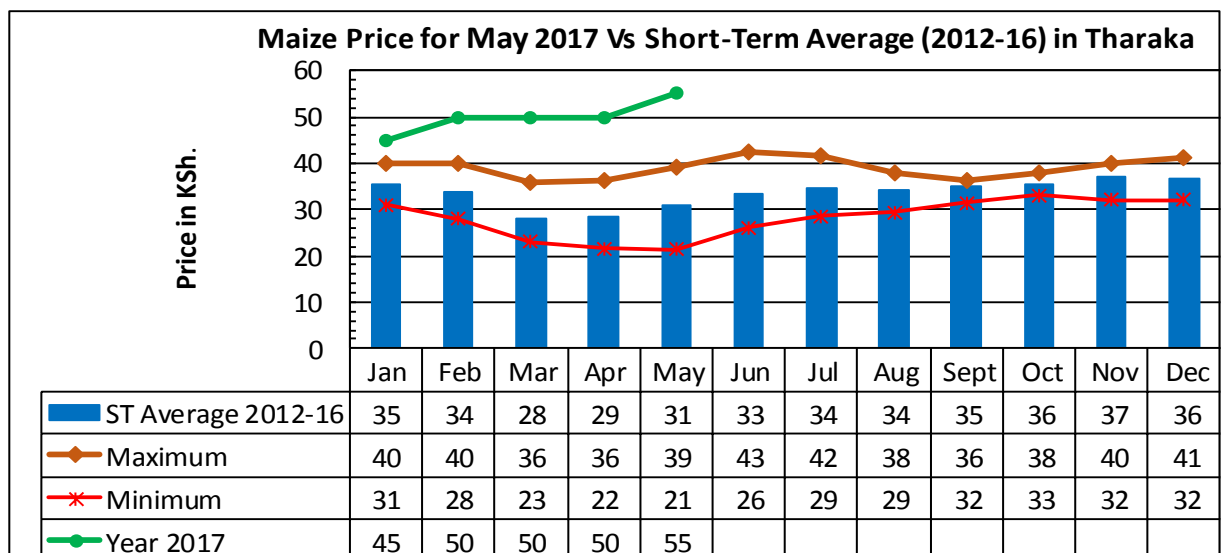
- There was stability in the average farm gate goat prices in all livelihood zones where the price slightly increased from Ksh 2,400.00 in April to Ksh.2,500.00 in the month under review.
- The ongoing trend of poor goat prices was mainly attributed to the high influx of animals into the market as farmers dispose of their animals to enable them purchase food, meet school fees requirements other household needs. However, the rate of disposal has reduced during the month under review as farmers prospects of good harvests were restored following the continuation of rains during the period.
- The Marginal Mixed Farming recorded the highest average price of Ksh.2,700.00 while the Mixed Farming livelihood zone recorded the lowest price of Ksh. 2,300.00. Rainfed Cropping livelihood zone stabilized at an average price of Ksh 2,500.00.
- Tharaka North and Tharaka South recorded a similar average price of Ksh 2,500.00 and Ksh 2,600.00 respectively.
- The average goat price was 18 percent lower than the five-year average of Ksh 3,000.00.



### Price of Cereals and Other Food Products

#### 3.2 Maize Prices

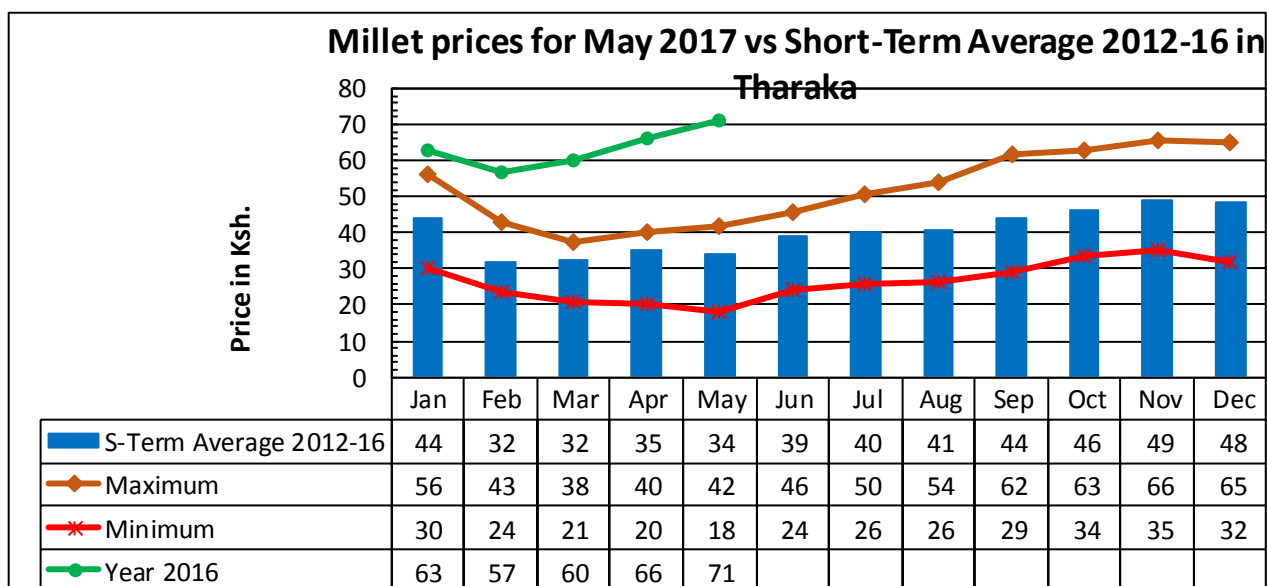
- The average market price of a kilogram of maize increased to Ksh.55.00 during the period under review as compared to Ksh 50.00 in the previous month. This was attributed to the minimal maize production as a result of poor performance of the short rains within the County and in the neighbouring Counties.
- The highest price was recorded in Chiakariga market at Ksh 65.00 while Marimanti and Gatunga recorded an equal average price of Ksh 50.00.
- The average maize price was 77 percent above the five-year average of Ksh 31.00.





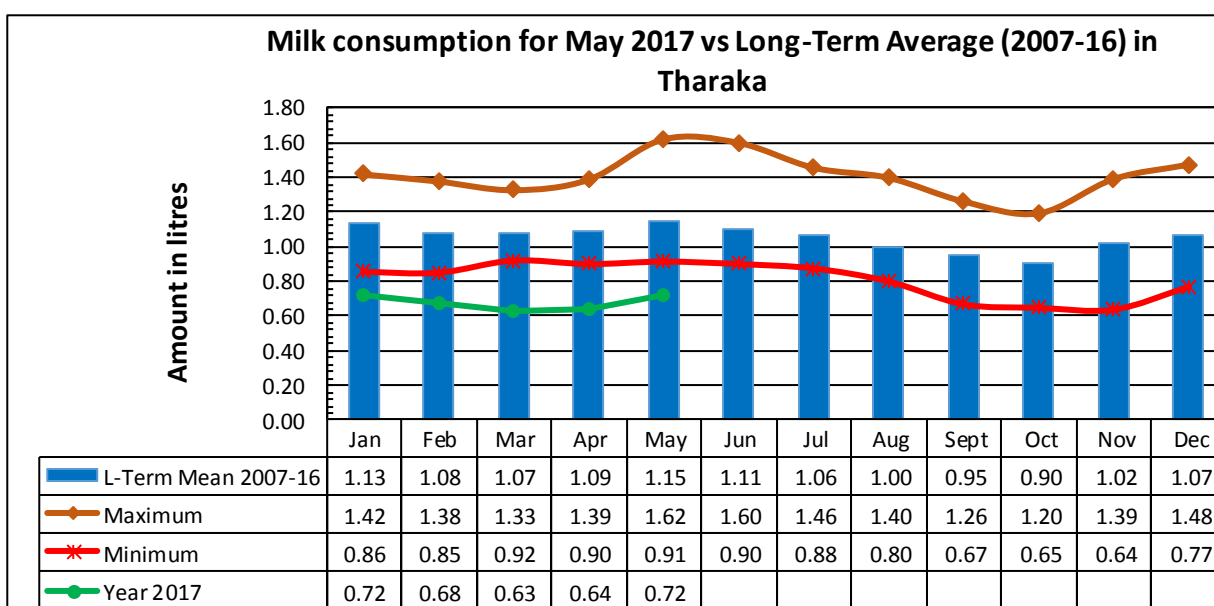
### 3.3 Millet Price at Market Level

- The market average price of millet per kilogram increased from Ksh 66.00 recorded in April to Ksh.71.00 in the month under review. The current price is indicative of a 8 percent increase which was mainly attributed to the reducing supply of the cereal to the local markets following its relatively minimal production after the short rains season.
- The highest market prices were recorded in Chiakariga market at Ksh. 80.00 while Gatunga and Marimanti recorded a similar price of Ksh. 70.00.
- The cereal’s price was 109 percent above the short-term average of Kshs.34.00.

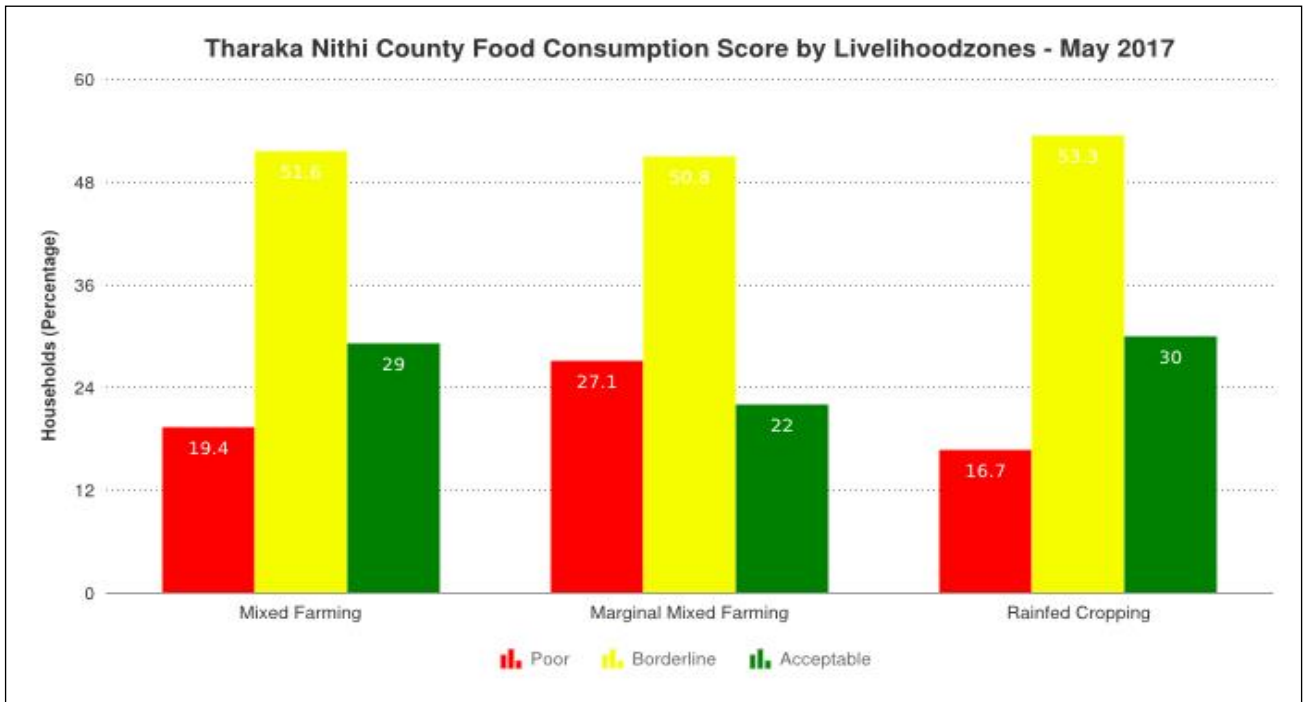


### 3.4 Milk Consumption

- The average milk consumption per household increased slightly to 0.72 litres in the month under review from 0.64 recorded in April, 2017. The increment was attributed to the increased production recorded in all livelihood zones mainly due to improved pasture and browse condition coupled with the relatively reduced distances to water sources.
- The highest milk consumption was recorded in the Marginal Mixed Farming at 0.85 litres while households in Rain fed and Mixed Farming livelihood zones consumed 0.62 litres and 0.70 litres respectively.
- The average milk consumed was 37 percent below the 10-year long-term average of 1.15 litres per household.



### 3.4.1 Food Consumption Score



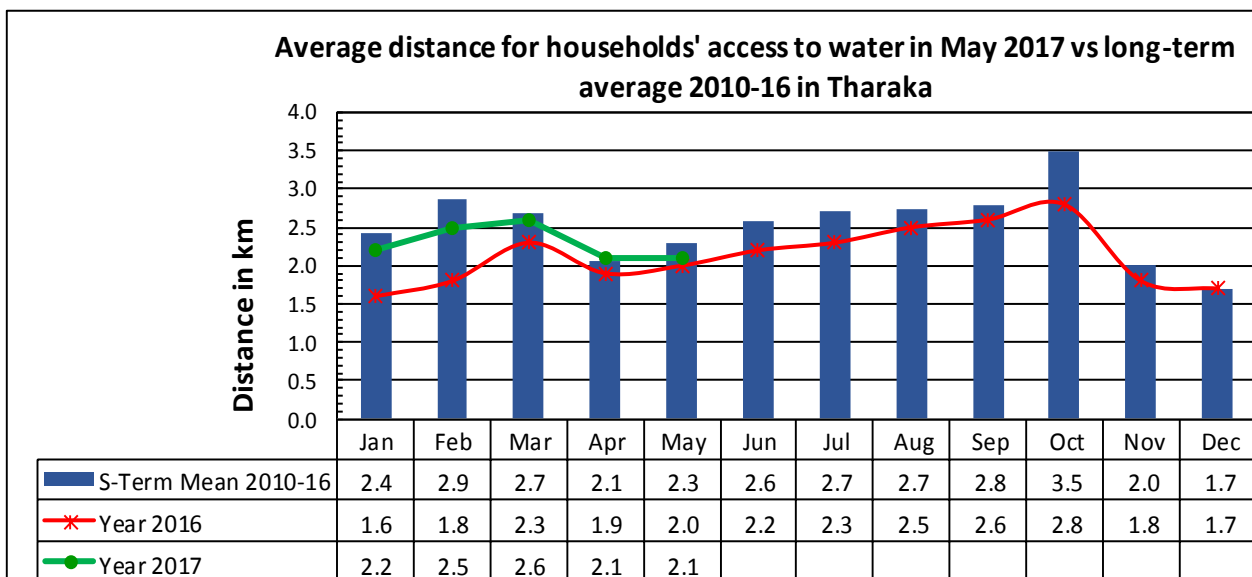
- About 74 percent of the households are currently food insecure with either borderline or poor food consumption scores, attributed to high food prices with limited household purchasing power resulting to a decline in food access.

Period	Acceptable (%)	Borderline (%)	Poor (%)
February, 2017	31	53	16
March, 2017	30	52	18
April, 2017	27	53	20
May, 2017	26	52	23

- The poor food consumption score implies household are not consuming staples and vegetables every day and rarely consuming protein rich food, borderline imply household consuming staple, vegetable every day accompanied by oil and pulse a few times in a week while the acceptable imply households consuming staples, vegetables every day, and frequently accompanied by pulses.

### 3.5 Availability of Water for Household Consumption

- Household access average distance to water stabilized at 2.1km in during the month under review, which was attributed to the just concluded rainy season.
- The Marginal Mixed Farming livelihood recorded an average return distance of 2.9km compared to 1.9km in Rain Fed Cropping zone and 1.4 km in mixed farming livelihood zones.
- The distance of household access to water was similar to the long-term average of 2.1 km.

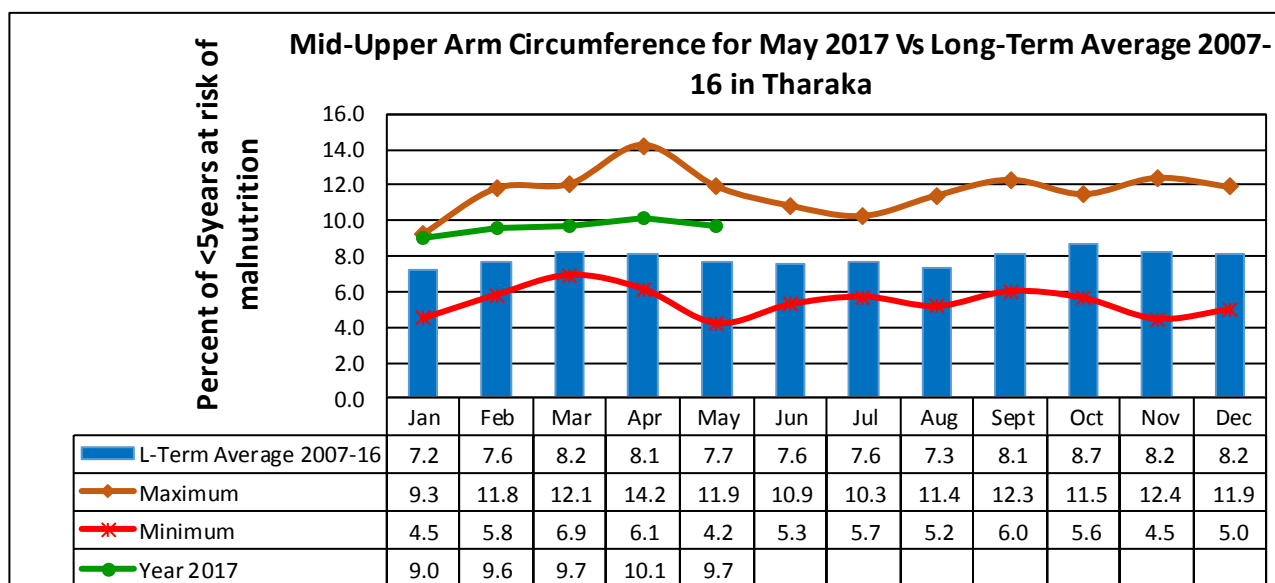


## 4.0 UTILISATION INDICATORS

### 4.1 Health and Nutrition Status

#### 4.1.1 MUAC

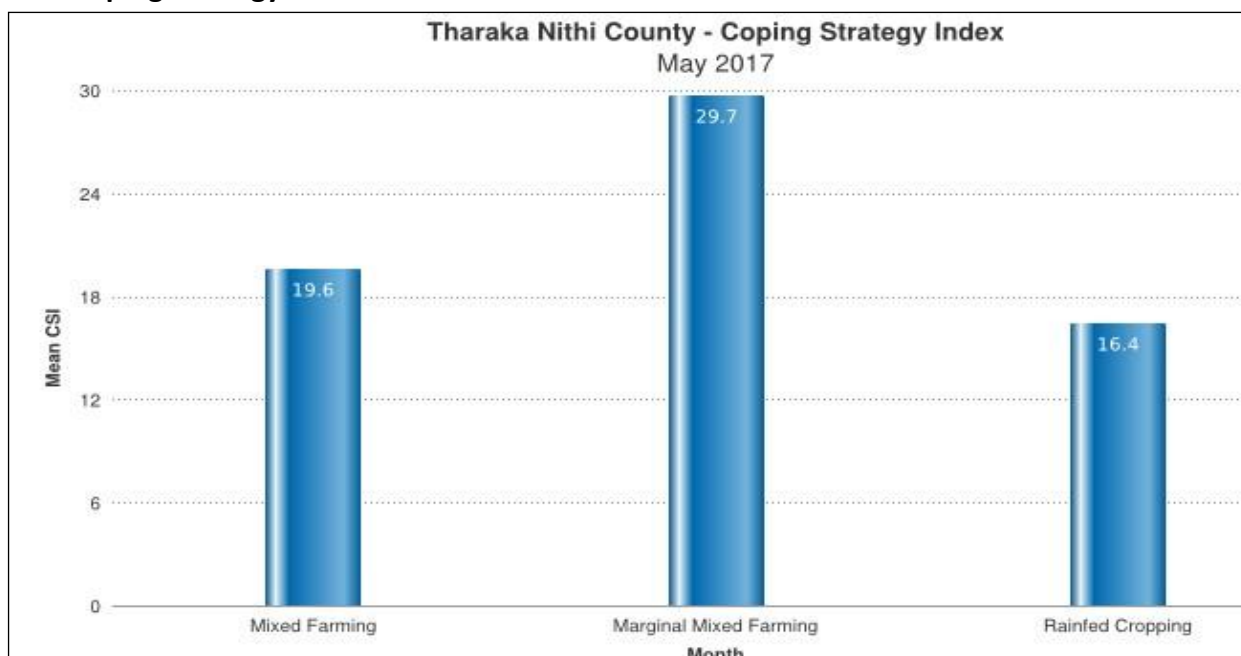
- The proportion of children at risk of malnutrition whose MUAC measurement was below 135 mm threshold for the period under review stabilized at 9.7 percent as compared to 10.1 percent recorded in the previous month.
- The current high proportion of children at risk of malnutrition was attributed to the reduced amount and frequency of meals and limited dietary diversity.
- The highest proportion of children at risk of malnutrition was recorded in the Marginal Mixed Farming zone at 13.8 percent compared to 9.0 percent and 6.3 percent in the Mixed Farming and Rain Fed livelihood zones respectively.
- The proportion of children at risk of malnutrition whose MUAC measurement was below 135mm was above the long-term average of 7.7 percent.



#### 4.1.2 Health

- The prevalence of most common diseases for the general population in Tharaka South and North Sub-Counties included diseases of the respiratory system, malaria, skin disease, urinary tract infections and rheumatism while those mainly affecting children under five years include: diseases of the respiratory system, pneumonia, malaria, intestinal worms and skin diseases.

## 4.2 Coping Strategy Index



- The Coping Strategy Index (CSI) increased slightly to 24 in the month under review compared to 22 in the previous month. The high index implies a slight increase in the frequency and the number of households employing consumption based coping strategies.
- The highest CSI was recorded in the Marginal Mixed Farming zone at 30 compared to 20 and 16 in the Mixed Farming and Rain Fed livelihood zones respectively. This implies that in the marginal mixed farming households are employing more severe coping strategies than in the mixed farming and rain fed livelihood zones.
- The most commonly employed coping mechanisms over the period included reliance on less preferred and or less expensive food, reduction of the number of meals and reduction in portion or size of meals.
- A considerable proportion of households were noted to employ livelihood based coping strategies such as sale of some household assets, spending of savings as well as borrowing of short term loans.

## 5.0 Food Security Prognosis

The month under review marked the end of the long rains (as predicted by the Kenya Meteorological Department) whose performance was below normal with poor distribution temporary and spatially. There is a spatial poor crop performance in the locality with the most affected livelihood zone being the marginal mixed farming where a very poor performance of rains was experienced. Consequently, there have been low recharge of underground and ground water sources as well as poor range land development. In that respect, food and animal production are likely to be below normal in the two sub-counties, a factor that is expected to result in low food supply and affordability as Terms of Trade deteriorate further due to poor performance of livestock markets. Deprived food availability at the household level may significantly affect school attendance and performance of food insecure households in Igambang'ombe, Kamanyaki, Kamarandi, Maragwa, Usueni, Gatunga, Gituma, Nkarini and Kanjoro locations all found in the marginal mixed farming livelihood zones. Migration is also expected to persist along the park due to pasture and browse depletion. Levels of Global Acute Malnutrition are expected to be rise significantly in the affected zones.

Households in the sub-county are likely to remain in the stressed phase (IPC Phase 2) across all livelihood zones.

## **6.0 CURRENT INTERVENTIONS AND RECOMMENDATIONS**

### **6.1 Ongoing food and Non-Food Interventions**

- 37 primary schools in Tharaka South with a total enrolment of are 10,242 beneficiaries of school feeding programme sponsored by International Aid Services.
- Construction of Ura Kathangachini water project in Kanjoro and Kathangachini locations benefiting 4,000 persons by National Government.
- Rehabilitation/upgrading of boreholes to solar pumping by National government through UTaNRMP at Gikingo, Marimanti and Nkondi locations benefiting 2,100 persons.
- Rehabilitation of Rukenya earth dam by National and County Governments through Devolution Ministry at Ntugi location benefiting 1,500 persons.
- Construction of Maragwa water pipeline by County Government and WSTF at Marimanti and Maragwa location benefiting 3000 persons.
- Rehabilitation of Mutonga Gituma water supply by County Government and WSTF at Ntugi location benefiting 2000 persons.
- Kiaranthe Earth dam construction by NMDA/County governments benefiting 2000 persons at Kathangacini location.
- Home Grown School Meals Program (HGSMP) in Tharaka North and Tharaka South respectively with a total of 21,695 beneficiaries.
- Asset creation project where farmers in Tharaka region are being trained on construction and maintenance of farm assets and utilization of modern farming technologies.

### **6.2 Recommendations**

- Train farmers on fodder conservation practices and range land management.
- Advocate rain water harvesting and use of water treatment methods.
- Increased advocacy on treating and consumption of treated water.
- Enhance advocacy on exclusive breastfeeding and healthy feeding practices.
- Enhance community skills on the importance of hand washing at the five critical times.
- Advocacy to the young mothers and fathers on the importance of the indigenous food.
- Close monitoring of malnutrition and underweight cases at household and health facilities.
- Provision of safe nutritious food to schools albeit the increase in food prices.
- Intra and inter county livestock vaccination, deworming, vector control and treatment of the sick animals.