

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



A Vision 2030 Flagship Project



**January 2017 EW Phase**

**Drought Status: ALERT**



**Maandalizi ya mapema**

**Drought Situation & EW Phase Classification**

**Biophysical Indicators**

- The month of January was characterized by hot dry sunny weather conditions with no rainfall marking the start of the short rains season.
- The Vegetation Condition Index (VCI) was 32 indicating a moderate drought.
- The water availability was below normal for the period and shows a declining trend.

**Socio Economic Indicators (Impact Indicators)**

**Production Indicators**

- During the month under review there was destruction of the little field crops by Quilea birds in the rainfed livelihood zone.
- The condition for pastures was fair to poor, while browse was good to fair but showing a worsening trend attributed to the below normal performance of the short rains.
- Livestock body condition for cattle was fair while that of shoats was good across all the livelihood zones.

**Access Indicators**

- Milk production and consumption per household was 0.84 litres and 0.72 litres respectively compared to an average production of 1.4 litres and an average consumption of 1.13 litres.

**Utilization Indicators**

- Percentage of children at risk of malnourishment whose MUAC was below 135mm was 9.0 for the period under review, a higher value than the long-term average of 7.2 percent.

Early Warning Phase Classification		
Livelihood Zone	EW PHASE	TRENDS
Mixed Farming	Alert	worsening
Marginal Mixed Farming	Alert	Stable
Rainfed cropping	Alert	stable
County	Alert	Stable
Biophysical Indicators	Value	Normal Range/Value
VCI-3month (Tharaka)	32	>35
Water Sources	Fair	Fair
Production Indicators	Value	Normal
Livestock Migration Pattern	Normal	Normal
Livestock Body Conditions	Fair	Good
Milk Production	0.84 Litres	<1.38 Litres
Livestock deaths (from drought)	No death	No death
Access Indicators	Value	Normal
Terms of Trade	54	<82
Milk Consumption	0.72 Litres	<1.13Litre
Water for Households	Fair	Good
Utilization indicators	Value	Range/Value
MUAC	9.0	<7.2
Coping Strategy Index (CSI)	19	<56
Food Consumption (Tharaka North)	40.5 Percent	Acceptable

**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

# BIOPHYSICAL INDICATORS

## 1.0 MEASURING DROUGHT HAZARD

### 1.1 METEOROLOGICAL DROUGHT

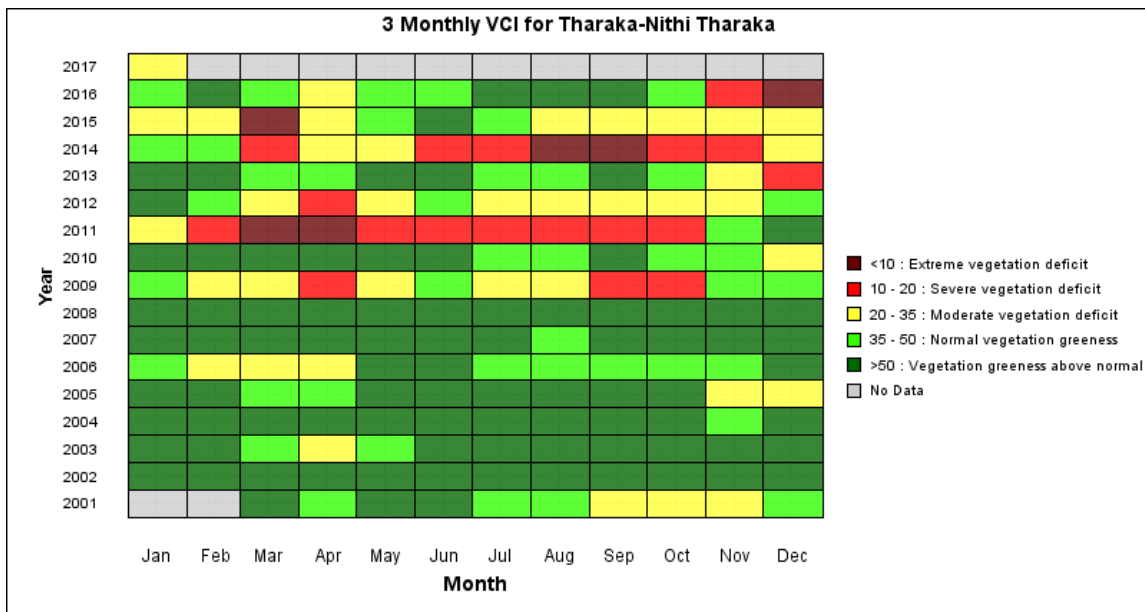
#### 1.1.1 Actual Rainfall

- No rainfall was recorded in the month under review.

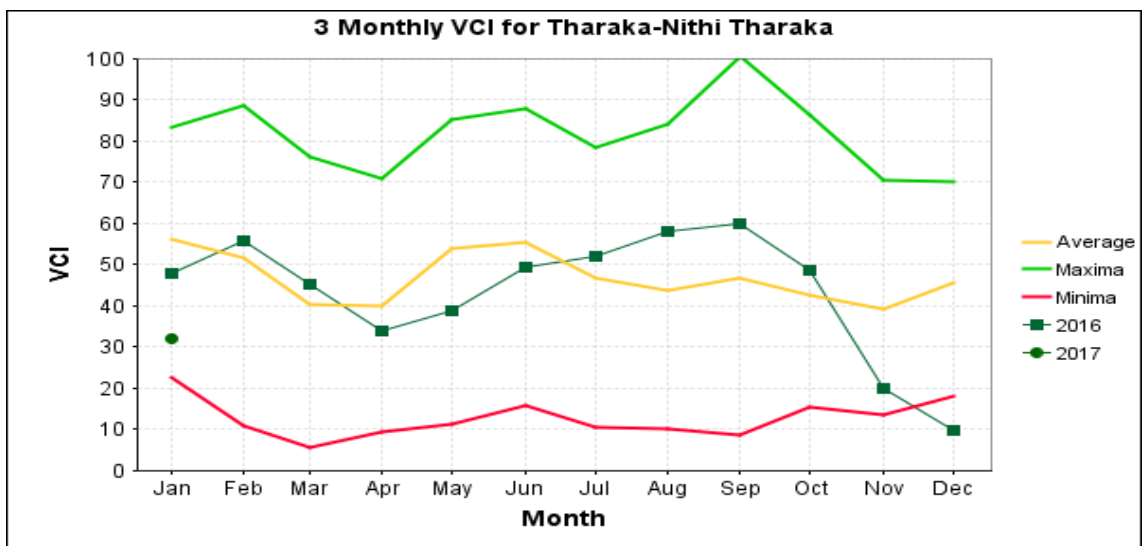
### 1.2 AGRICULTURAL DROUGHT

#### 1.2.1 Vegetation Condition Index (VCI)

- The matrix below illustrates the period from November 2016 to January 2017, as classified as agricultural drought based on VCI thresholds. The matrix below shows a retrospective analysis of the vegetation condition as related to drought.



- Tharaka was in moderate vegetation deficit band within thresholds of 20-35. The County's vegetation condition improved as suggested by an increase in the 3-month VCI index of 9 in December 2016 to 32 in January. The improved vegetation condition is attributed to October, November and December (OND) rains.



## 1.2.2 NATURAL VEGETATION AND PASTURE CONDITION

### Field Observations (Pasture and Browse Conditions)

#### Pasture condition

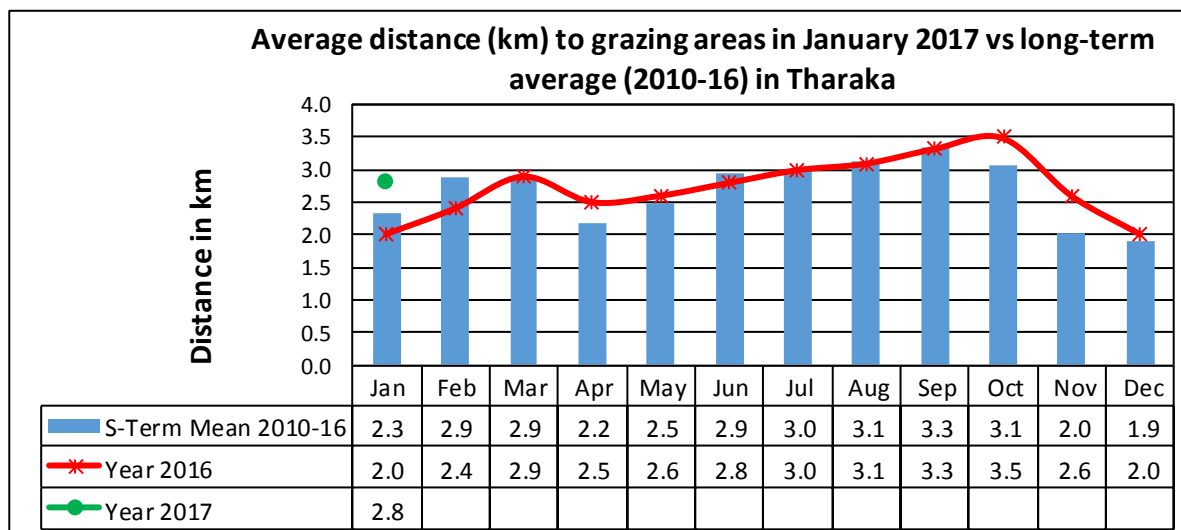
- In all livelihood zones, pasture was fair to poor attributed to poor regeneration owing to below normal rainfall performance.
- The available quantities were likely to last for approximately less than a month until end of February, compared to the normal stock for two months in this period.

#### Browse condition

- Browse condition was generally good across all livelihood zones but showing a deteriorating trend. The available browse was likely to last for at least two to three months until April, which is normal for the period.
- The presence of crop residues will slightly contribute to livestock feed, less than ten percent.
- In comparison to the normal year, the available browse and pasture amount was below normal.

### 1.2.3 Distance to Grazing Areas

- Livestock average distance to grazing areas increased from 2.0 km in December 2016 to 2.8 km in January 2017, attributed to worsening pasture and browse condition owing to poor performance of the short rains.
- The longest return distance to grazing areas was recorded in the Marginal Mixed Farming at 4.3 km while Rain Fed Cropping and Mixed Farming livelihood zones recorded 2.4km and 1.9 km respectively.
- The average distance to grazing areas was higher than the five-year average of 2.3km for this time of the year.

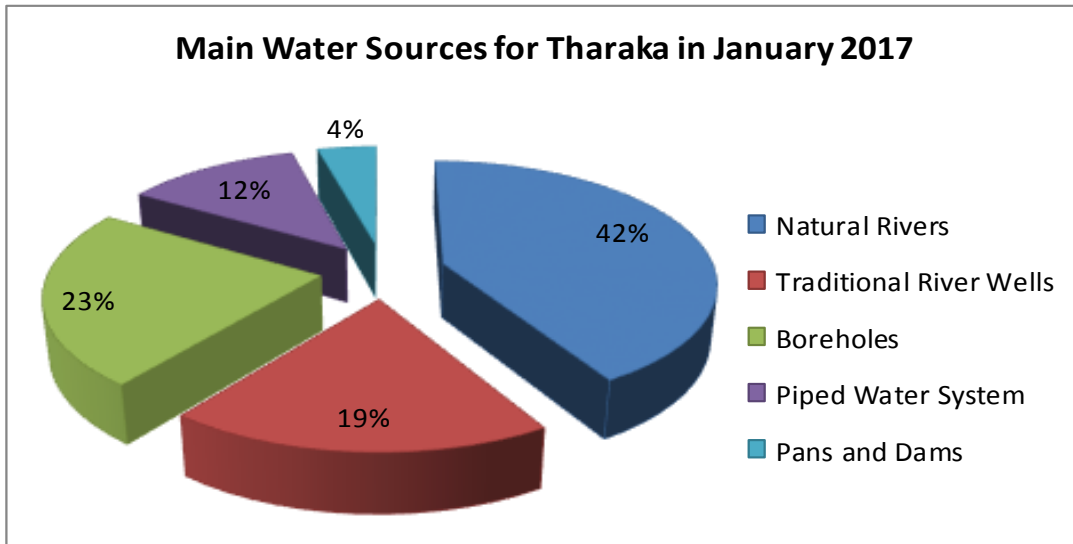


**HYDROLOGICAL DROUGHT**

**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-counties were natural rivers, pipelines, boreholes, piped water system and traditional river wells.
- The most affected areas, with low water concentration in Marginal Mixed Farming zone includes: Marimanti, Gituma, Chiakariga, Kamanyaki, Kamarandi, Maragwa, Kathangachini, Gatue and Kanjoro where all the seasonal rivers have dried up. However, the situation is stable as the existing sources are estimated to last until the onset of the long rain season.



- 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 with a declining trend.

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 is fair while that of shoats is good across the livelihood zones attributed to the worsening pasture and browse condition coupled with increasing distances to the water sources.
- For most livestock, current body condition can be rated at index 5 as per the threshold scale below.

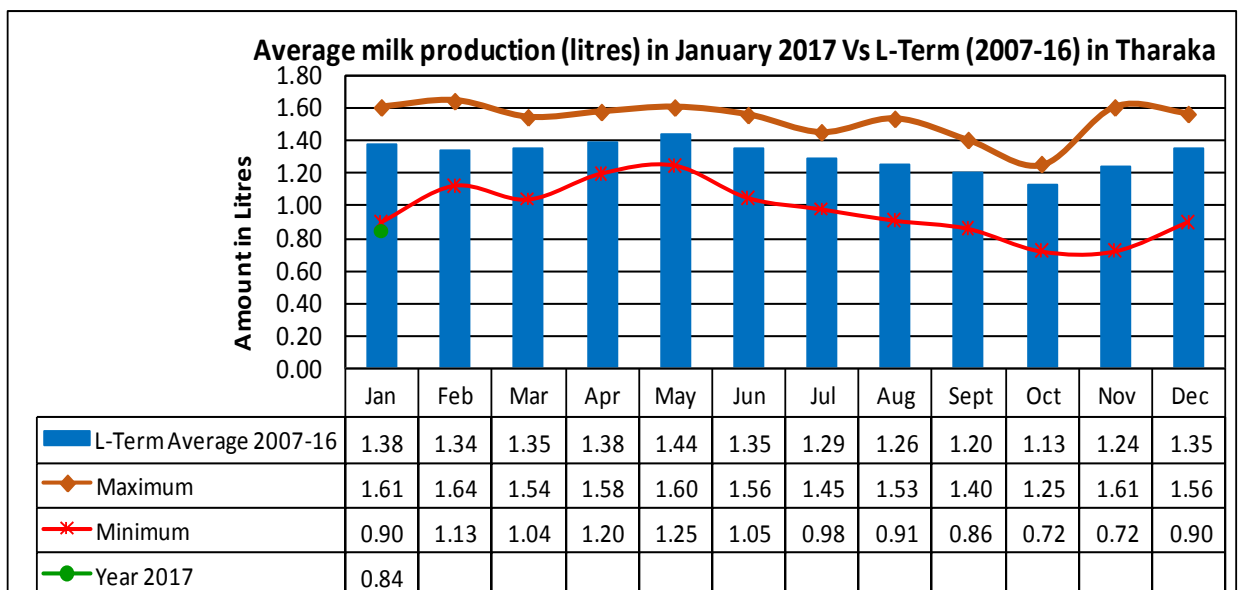
BODY CONDITIONS	SCORE	WARNING STAGE
Emaciated, little muscle left	1	Emergency
Very thin no fat, bones visible	2	
Thin fore ribs visible	3	Alert Worsening/Alarm
Borderline fore-ribs not visible. 12 <sup>th</sup> & 13 <sup>th</sup> ribs visible	4	Alert
Moderate. Neither fat nor thin	5	Normal/Alert
Good 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	

#### 2.1.3 Livestock Diseases

- There were no unusual incidences of diseases except for Contagious Caprine Pleuropneumonia (CCPP), Trypanosomosis, Orf, sheep and goat pox and Heart Water diseases, which are endemic in Marginal Mixed farming zones. Other common diseases include Helminthosis, Pneumonia and Anaplasmosis. These diseases mostly affect cattle and goats. In poultry, the common diseases include; Newcastle disease (NCD), Fowl typhoid and Infectious bronchitis.

#### 2.1.4 Milk Production

- Household milk production was stable at less than one litre for both January, 2017 and December, 2016.
- The highest milk production was recorded in the households of the Marginal Mixed Farming livelihood zone at 0.96 litres while Mixed Farming livelihood and Rainfed livelihood zone had 0.85 litres and 0.72 litres respectively per household.
- Milk production per household was 39 percent lower than the ten year average attributed to worsening condition of pasture and browse coupled with increasing distances to water sources.



## 2.2 Crop Production

### 2.2.1. Timeliness and Status of Crops

- The area under maize production decreased by 16 percent of the long term average and consequently the production is expected at 17 percent of the long term average. While the area under green grams increased by 20 percent attributed to increased advocacy on adoption of the drought tolerant crops, especially in the marginal mixed livelihood zones, and good market prices. However the production is expected at 37 percent of the long term average mainly due to poor rainfall performance.
- Flagged out areas include localized areas of Maragwa, Kathangachini, Kanjoro, Kamarandi, Kamanyaki, Kamacabi, Macomango and Chiakariga which are mainly in Marginal Mixed farming livelihood zone.

### 2.2.2. Pests and Diseases

- During the month under review there was destruction of the little field crops by Quilea birds in the rainfed livelihood zone.

### 2.2.3. Crop Harvest

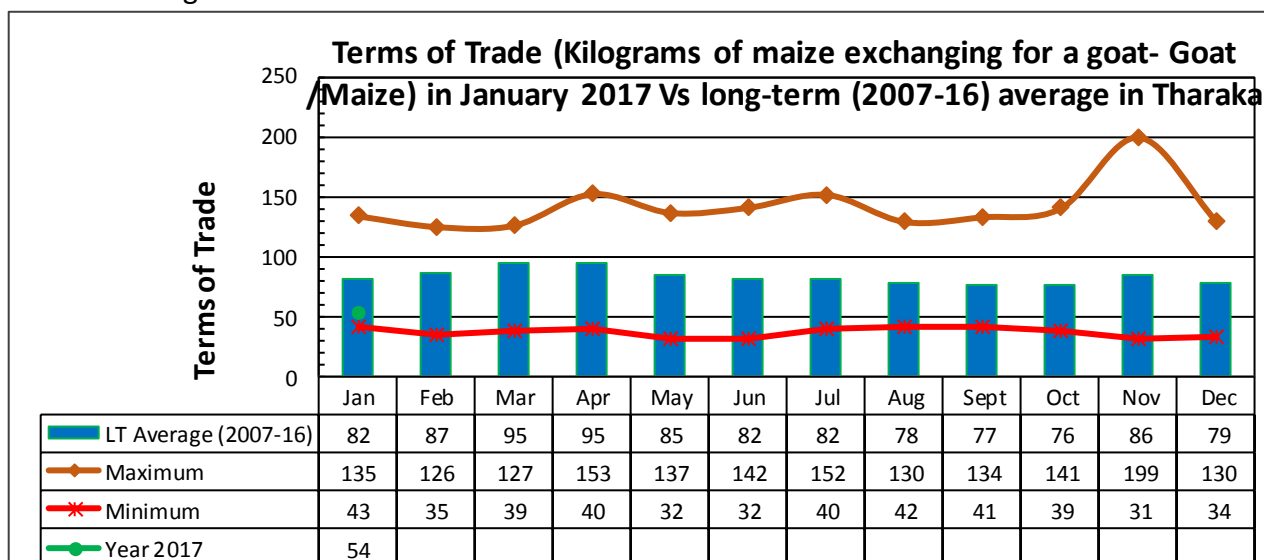
- The green grams and cowpeas were harvested during the month under review.

## 3.0 ACCESS INDICATORS

### 3.1 Livestock Prices

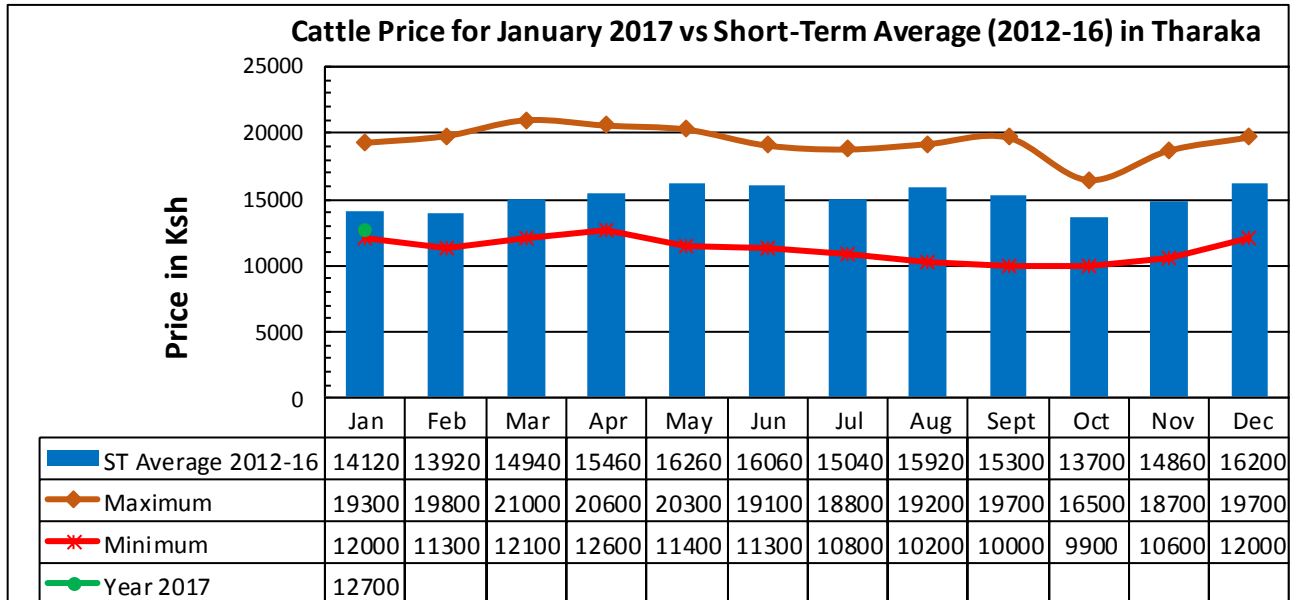
#### 3.1.1 Terms of Trade

- The Terms of Trade (the number of kilograms of maize a household would purchase after the sale of one goat) decreased significantly from 75 kilograms in December 2016 to 54 in the period under review. This is likely to be attributed to the increasing maize price and the decreasing goat prices.
- The highest ratio was recorded in the rain fed cropping livelihood zone at 56 kilograms, while the marginal mixed farming and mixed farming livelihood zones had the lowest ToT values of 55 and 51 kilograms respectively.
- The Terms of Trade was lower than the long-term average of 82 and at the lower end of the seasonal range.



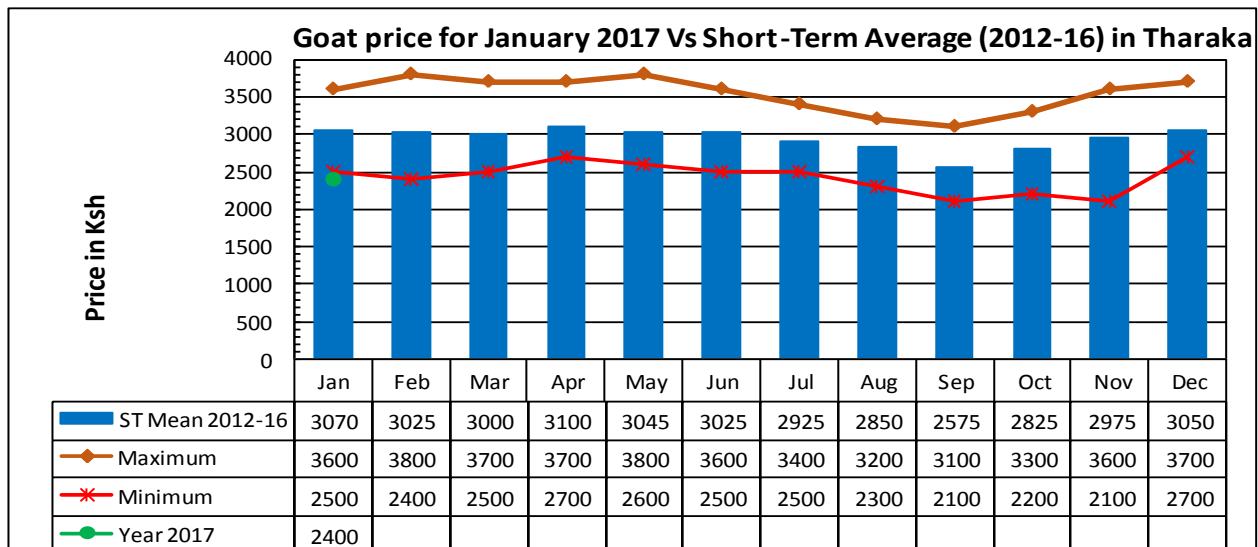
### 3.1.2 Cattle Prices

- The average household cattle prices decreased from Ksh. 17,700.00 recorded in the previous month to Ksh 12,700.00 in the month under review, indicating a 28 percent decline attributed to the worsening livestock body conditions.
- 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 12,000.00 and Ksh 12,600.00 respectively.
- The current cattle price was 10 percent below the five-year short-term average of Kshs 14,100.00.



### Goat Prices

- Household goat prices decreased by 23 percent from Ksh. 3,100.00 in the month of December, 2016 to Ksh. 2,400.00 during the period under review. This was mainly attributed to the high traded volumes of goats to the markets as farmers sought to meet household food requirements, school fees and other household expenditure.
- The Marginal Mixed Farming and Rainfed cropping livelihood zones recorded similar and the highest average price of Ksh.2, 500.00 while Mixed Farming livelihood zone recorded the lowest average price of Ksh 2,300.00.
- Tharaka North recorded an average price of Ksh 2,600 as compared to Tharaka South's average of Ksh 2,300.00.



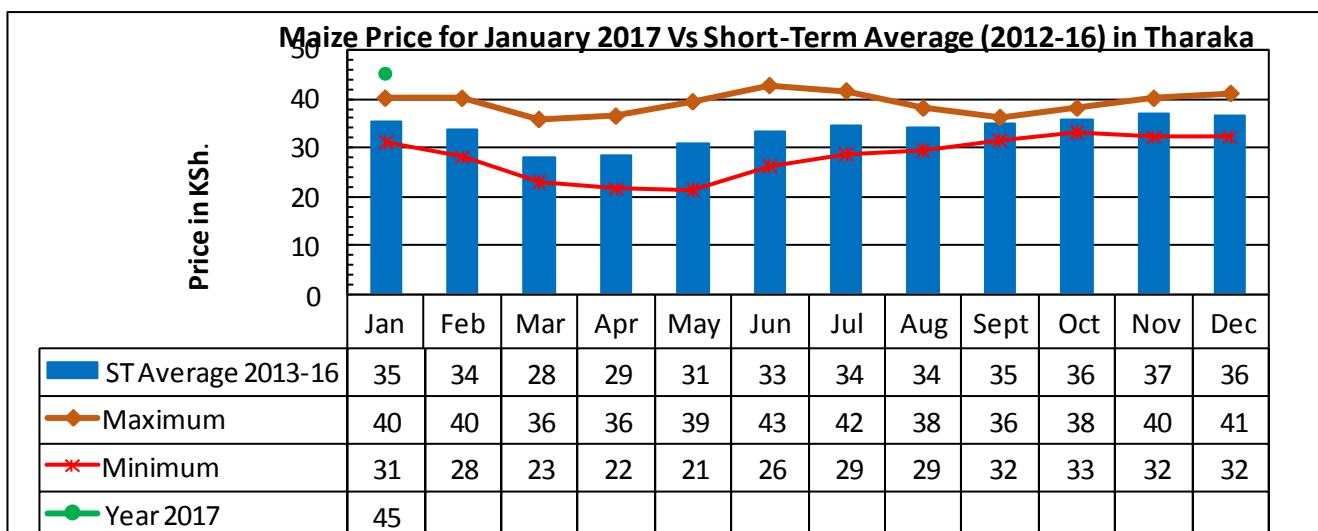
- The average goat price was considerably lower than the five-year average of Ksh 3,070.00.

Ksh

## Price of Cereals and Other Food Products

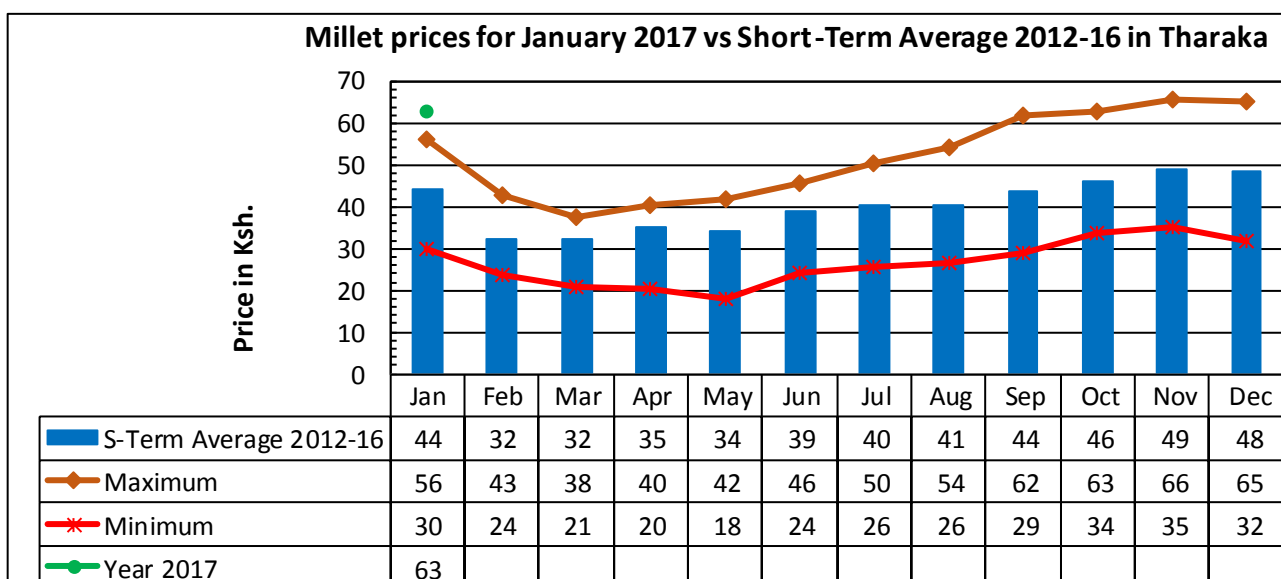
### 3.2 Maize Prices

- The market average price of a kilogram of maize increased by 10 percent from Ksh 41.00 recorded in December, 2016 to Ksh 45.00 in the period under review. This was attributed to below normal maize production as a result of poor performance of the short rains.
- All the major markets namely; Marimanti, Chiakariga and Gatunga recorded an equal average price of Ksh 45.00.
- All the livelihood zones, Marginal Mixed Farming, Mixed Farming and Rainfed Cropping recorded a similar price of Ksh.45.00.
- The average maize price was 25 percent above the three-year average of Ksh 36.00.



### 3.3 Millet Price at Market Level

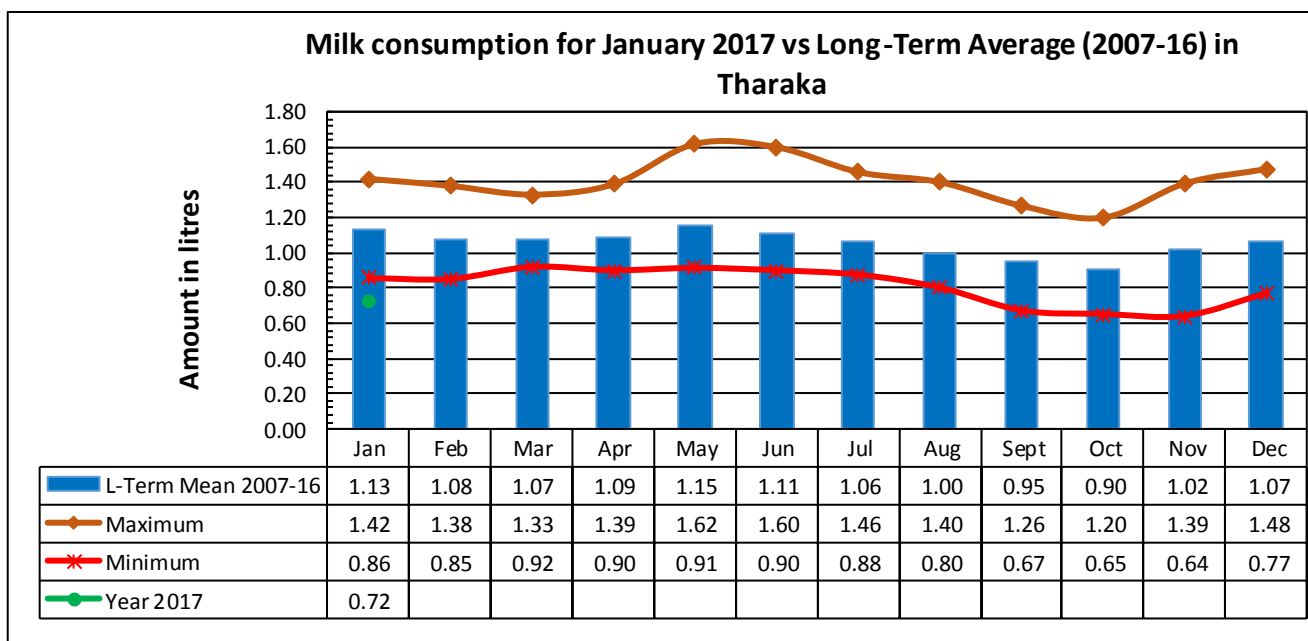
- The market average price of millet per kilogram increased from Ksh 52.00 recorded in December to Ksh. 63.00 in the month under review. The current price is indicative of a 21 percent increase which was mainly attributed to the low millet production as a result of poor rainfall performance.
- The highest market average prices were recorded in Marginal Mixed Farming and Mixed Farming livelihood zones at Ksh.65.00. The Rainfed recorded lowest average price of Ksh. 60.00.
- The cereal's price was 43 percent above the short-term average of Kshs.44.00 also above the seasonal range.





### 3.4 Milk Consumption

- The average milk consumption per household was stable at below one litre for both December, 2016 and the period under review attributed to decreased milk production across all livelihood zones owing to worsening condition of pasture and browse coupled with increasing distances to water source.
- The highest milk consumption was recorded in the Marginal Mixed Farming at 0.82 litres while Households in Rain fed and Mixed Farming livelihood zones consumed 0.65 litres and 0.70 litres respectively.
- The average milk consumed was 36 percent below the long-term five-year average of 1.13 litres per household.



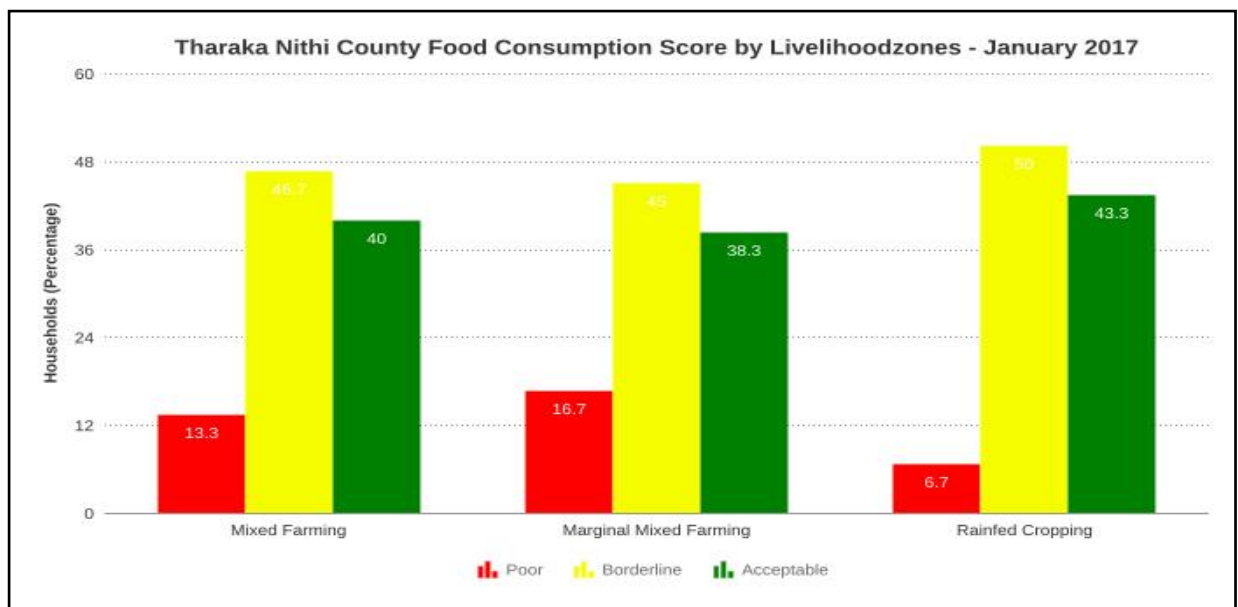
#### 3.4.1 Food Consumption Score

- Nearly 60 percent of the households are currently food insecure with either Borderline or Poor Food Consumption Score, mainly due to the poor performance of the short rains season that has seen a decline in food availability.

Period	Acceptable	Borderline	Poor
December, 2016	85	13	0
January, 2017	40	47	13

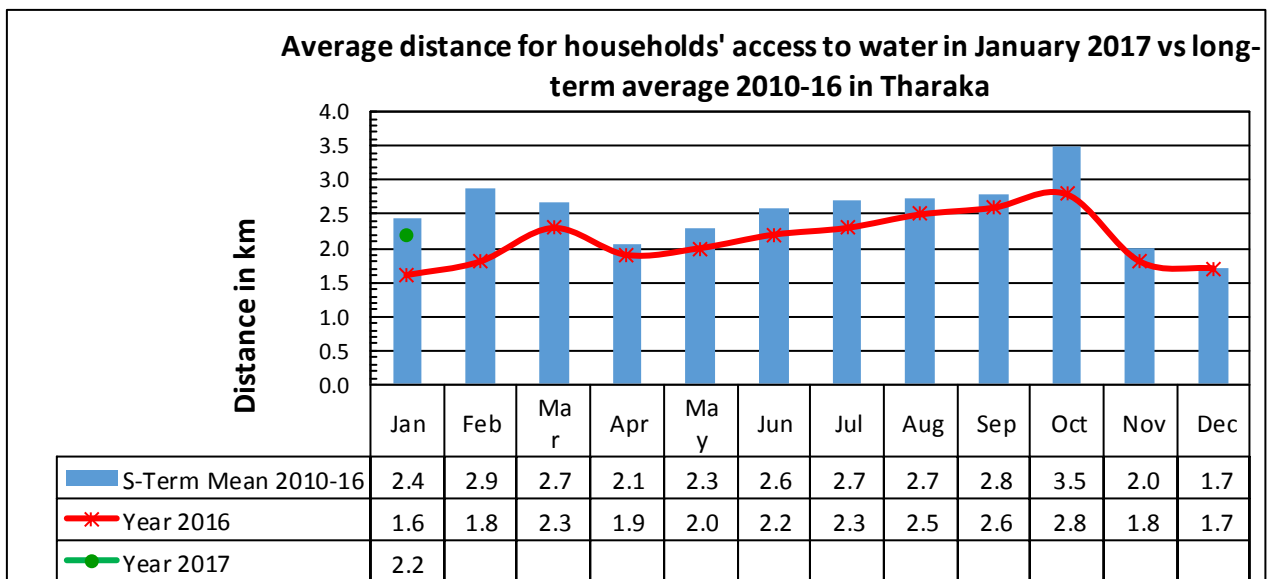
- The poor food consumption score implies household are not consuming staples and vegetables every day and never consuming protein rich food , borderline imply household consuming staple vegetable, every day accompanied by oil and pulse a few times a week while the acceptable imply household consuming staple, vegetable every day, frequently accompanied by pulse.
- Food consumption score disaggregated data by livelihood zone is as illustrated in the table below.

Livelihood	Acceptable	Borderline	Poor
Marginal Mixed Farming	40	47	13
Mixed Farming	38	45	17
Rainfed	43	50	7



### 3.5 Availability of Water for Household Consumption

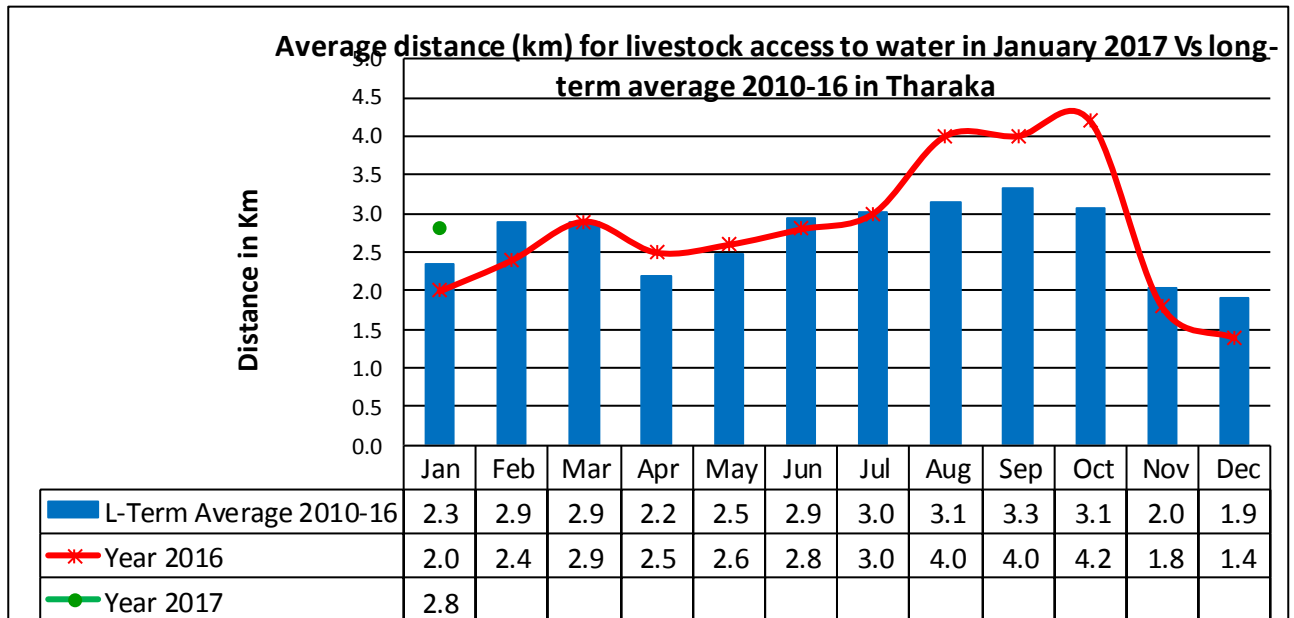
- Household access distance to water increased from 1.7 km in December, 2016 to 2.2km in the period under review
- The Marginal Mixed Farming livelihood recorded an average return distance of 3.6km compared to 1.8km in Rain Fed Cropping zone and 1.2km in mixed farming livelihood zones.
- The distance of household access to water was nearly to the long-term average of 2.4km.



### 3.6 Livestock Access to Water

- Livestock average distance to water sources increased from 2.0km during the previous month to 2.8km in January 2017.
- The longest return distance to grazing areas was recorded in the Marginal Mixed Farming at 4.3 km while Rain Fed Cropping and Mixed Farming livelihood zones recorded 2.4 km and 1.8 km respectively.
- The increase was attributed to the drying of the seasonal rivers, water pans, and traditional river wells as a result of previous below normal rainfall.
- The increasing number of boreholes that are reportedly non-operational owing to frequent breakdowns due to larger concentration of people coupled with low recharge levels.

- The average distance to grazing areas was slightly higher than the long-term average of 2.3.

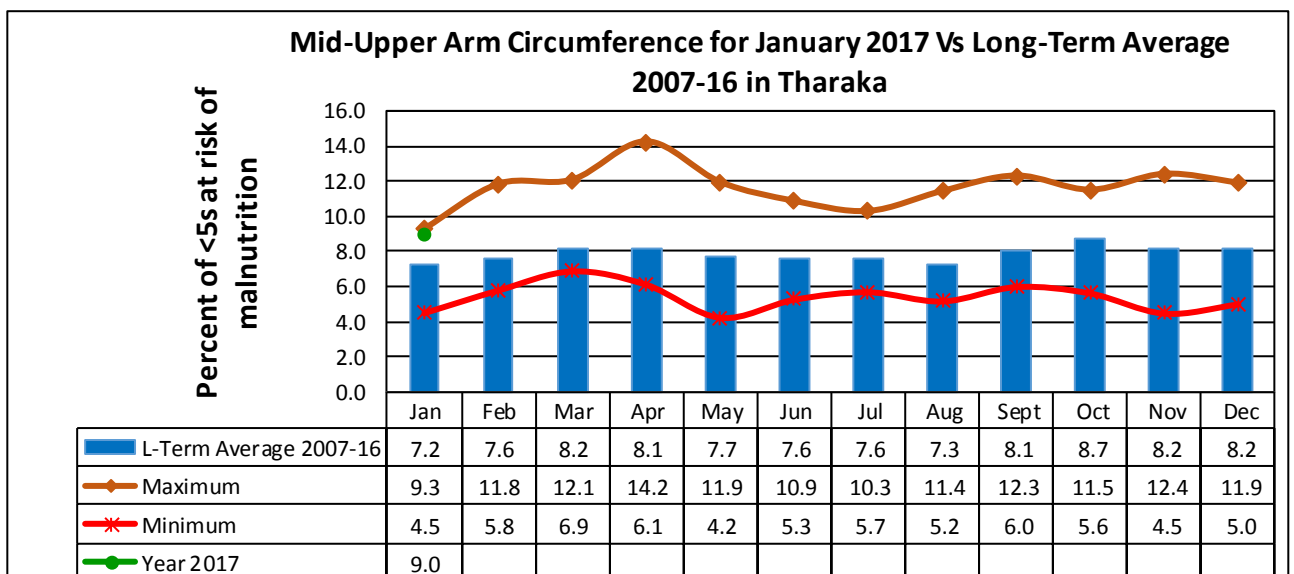


## 4.0 UTILISATION INDICATORS

### 4.1 Health and Nutrition Status

#### 4.1.1 MUAC

- The proportion of children at risk of malnutrition whose MUAC measurement was below 135mm threshold for the period under review increased from 8.2 percent in December, 2016 to 9.0 in January, 2017, which can be attributed to minimal dietary diversity.
- The highest proportion of children at risk of malnutrition was recorded in the Marginal Mixed Farming zone at 11.8 percent compared to 9.5 percent and 5.8 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 7.2 percent.

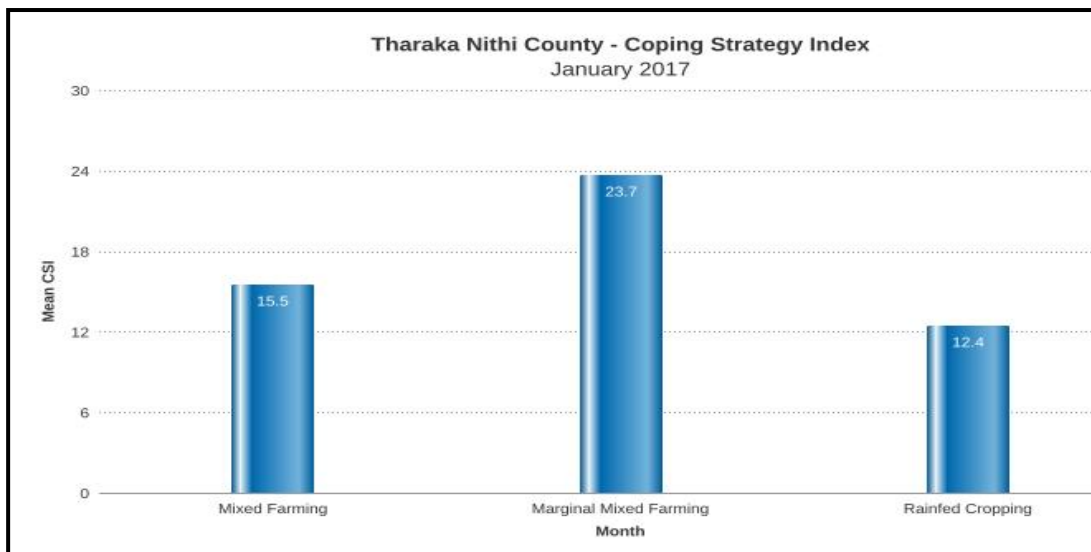


#### 4.1.2 Health

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

#### 4.2 Coping Strategy Index

- The coping strategy index (CSI) slightly increased from 15 in December 2016 to 19 for the period under review implying there is an increase in frequency for the number of households who are employing reduced coping strategies.
- The highest CSI was recorded in the Marginal Mixed Farming zone at 23.7 percent compared to 15.5 percent and 12.4 percent in the Mixed Farming and Rain Fed livelihood zones respectively. Implying that the marginal mixed farming are employing more severe coping strategies than rain fed livelihood zone.
- 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.



#### 5.0 Food Security Prognosis

- Pastures across all livelihood zones are likely to be depleted by March after which livestock prices will fall further due to deteriorating body condition.
- Lower livestock prices are likely to coincide with rising maize prices, resulting in decreasing terms of trade through to July.
- Maize prices are likely to maintain above normal prices and increasing trend, significant food consumption gaps will become evident across all livelihood zone.
- Open water sources are likely to dry up exacerbated with higher than normal temperatures.
- No mortalities are expected.
- To maintain food consumption, households are likely to engage more frequently on various coping strategies such as borrowing and buying food on credit and charcoal burning and selling of firewood.
- From March through April, there is likelihood of timely onset of rainfall in mid- march impacting positively on the range land conditions resulting to improvement in livestock productivity as well as availability of green leafy vegetables. Households will remain in Stressed (IPC Phase 2).

## **6.0 CURRENT INTERVENTIONS AND RECOMMENDATIONS**

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

- Home Grown School Meals Program (HGSMP) in Tharaka North and Tharaka South respectively with a total of 21,695 beneficiaries.
- 36 primary schools in Tharaka South with a total enrolment of are 6,954 beneficiaries of school feeding programme sponsored by International Aid Services.
- Upgrading Goats for Milk and meat production by Upper-Tana and Livestock Production Office at a cost of Ksh 4.8 M.
- Dairy farming by Upper-Tana and Livestock Production Office at a cost of Ksh 2.1 M
- Upgrading chicken for meat and eggs production by Upper-Tana and Livestock Production Office at a cost of Ksh 2 M.

### **6.2 Recommendations**

- Rehabilitation of collapsed boreholes
- Supply and distribution of water treatment chemicals
- Provision of drought tolerant seeds for the Long rains season
- Mass deworming and treatment of livestock
- Intensified diseases surveillance
- Reinstating school feeding program.
- Synchronized vaccination for livestock
- Close monitoring for malnutrition and underweight cases at household and health facilities