

**National Drought Management Authority  
THARAKA NITHI COUNTY (THARAKA)  
DROUGHT EARLY WARNING BULLETIN FOR OCTOBER 2017**



A Vision 2030 Flagship Project



**OCTOBER 2017 EW Phase**



Early Warning Phase Classification		
Livelihood Zone	EW PHASE	TRENDS
Mixed Farming	Alarm	Improving
Marginal Mixed Farming	Alarm	Improving
Rainfed cropping	Alarm	Improving
County	Alarm	Improving
Biophysical Indicators	Value	Normal Ranges
VCI-3month (Tharaka)	19.87	>35
Water Sources	Fair	Normal
Production Indicators	Value	Normal Ranges
Livestock Migration Pattern	Migration	No Migration
Livestock Body Conditions	Fair to Poor	Fair
Milk Production	1.10Litres	>1.13 Litres
Livestock deaths (from drought)	No death	No death
Access Indicators	Value	Normal
Terms of Trade	87	<76
Milk Consumption	1 Litres	>0.90Litre
Water for Households	Fair	Good
Utilization indicators	Value	Range/Value
MUAC	8.2	<8.7
Coping Strategy Index (CSI)	15	<52
Food Consumption (Marginal Mixed Farming)	86.2 Percent Acceptable	>80 Percent Acceptable

**Drought Situation & EW Phase Classification**

**Biophysical Indicators**

- Onset of the short rains was on the 2<sup>nd</sup> dekad of October which was normal onset however, the rainfall amount was below the long term average for the month of October.
- The Vegetation Condition Index (VCI3M) decreased from 27.76 to 19.87 indicating a severe agricultural drought in October.
- The water recharge level was fair with most of the rivers impounding water to up to 30% of their normal level. However, silting caused poor quality of water due to contamination hence the risk of water borne disease outbreak. This calls for enhanced water treatment.

**Socio Economic Indicators (Impact Indicators)**

**Production Indicators**

- The condition of pasture and browse remained poor in October but is expected to improve due to the onset of rains.
- Livestock body condition for cattle remained poor while that for goats improved slightly due to availability of leaf droplets for goats.
- Farming activities reported in the month of October were planting and kidding for goats.

**Access Indicators**

- There was a drop in cattle price and an increase in goat price. Maize prices also decreased due to increased supply from outside the county.
- Milk production and consumption per household level increased from that of the previous months mainly from goats.

**Utilization Indicators**

- Percentage of children at risk of malnutrition decreased due to increased consumption of milk from goats.

<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>Kidding (Sept)</li> <li>Increased HH Food Stocks</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

**Seasonal Calendar**

# BIOPHYSICAL INDICATORS

## 1.0 MEASURING DROUGHT HAZARD

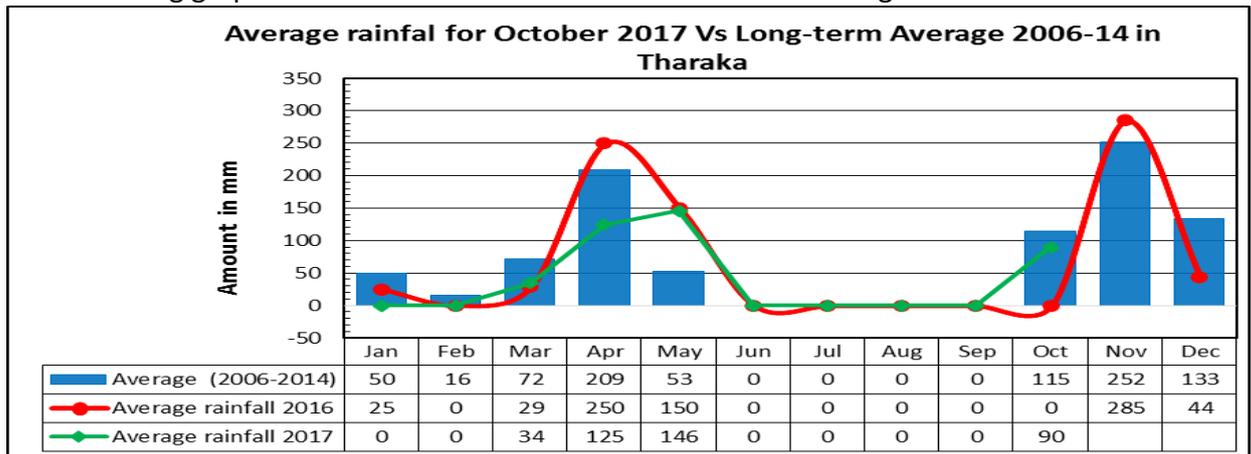
### 1.1 METEOROLOGICAL DROUGHT

#### 1.1.1 Actual Rainfall

- Onset of the short rains was on the second decade of October (from 13<sup>th</sup> October). An average of 90.36 mm of Rainfall was received in the county for the month of October.
- With reference to the long-term average, rainfall performance for October of 90.36mm was lower than the long term average of 115 mm for October.

#### 1.1.2 Rainfall Station data

- The following graph shows the actual rainfall received in mm during the month of October.

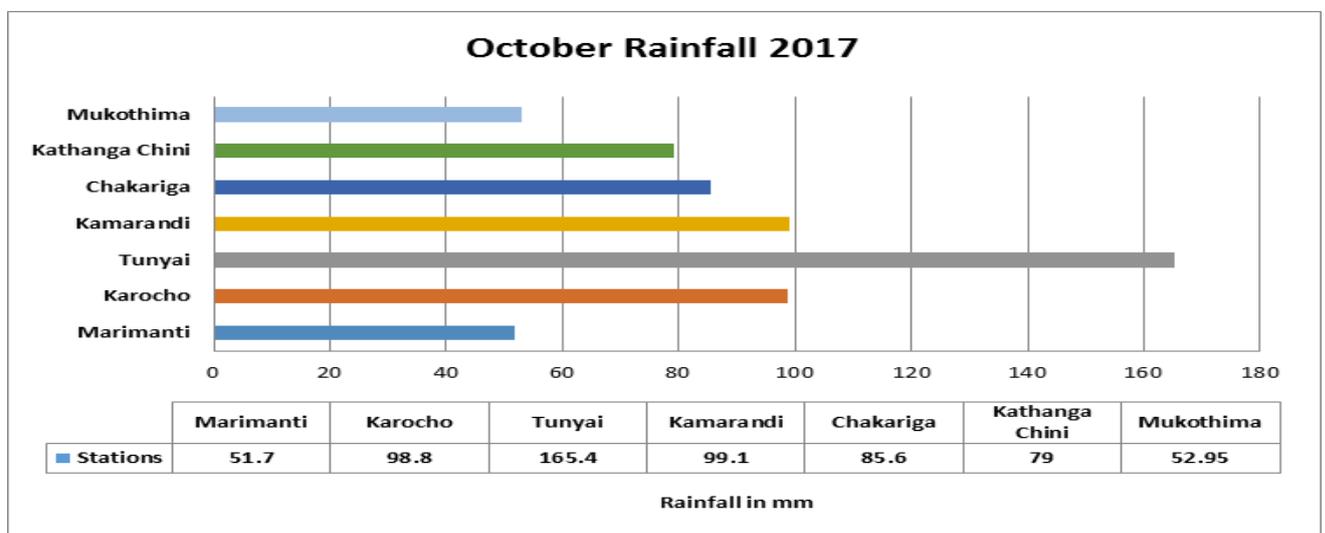


#### 1.1.3 Spatial and Temporal Distribution

- The spatial distribution of rainfall across the County was fair and even in all the 7 recording stations across all the three livelihood zones.
- The amounts of rainfall received per stations were as follows: Marimanti received 51.7 mm for 5 days, Karocho 98.8 mm for 6 days, Tunyai 165.4 mm for 8 days, Chakariga 85.4mm for 4 days, Kamarandi 99.1mm for 4 days, Kathanga Chini 93.9 mm for 4 days while Mukothima received 52.95mm of rainfall for 3 days.
- Rainfall was received for an average of 5 days in 7 stations for the month of October across all the livelihood zones from the second week of October (13<sup>th</sup> October 2017).

#### 1.1.5 Rainfall per stations

The graph below illustrates the rainfall amount received per the 7 rainfall recording stations.



## 1.2 AGRICULTURAL DROUGHT

### 1.2.1 Vegetation Condition Index (VCI)

- The vegetation condition of Tharaka Nithi for the month of October was below normal compared to the long term average for the month of October. The October VCI for Tharaka was 19.87 compared to the Normal index of 35. This depicted a severe vegetation deficit in October.
- The matrix below shows the vegetation condition for the month of October 2017 classified based on VCI thresholds.

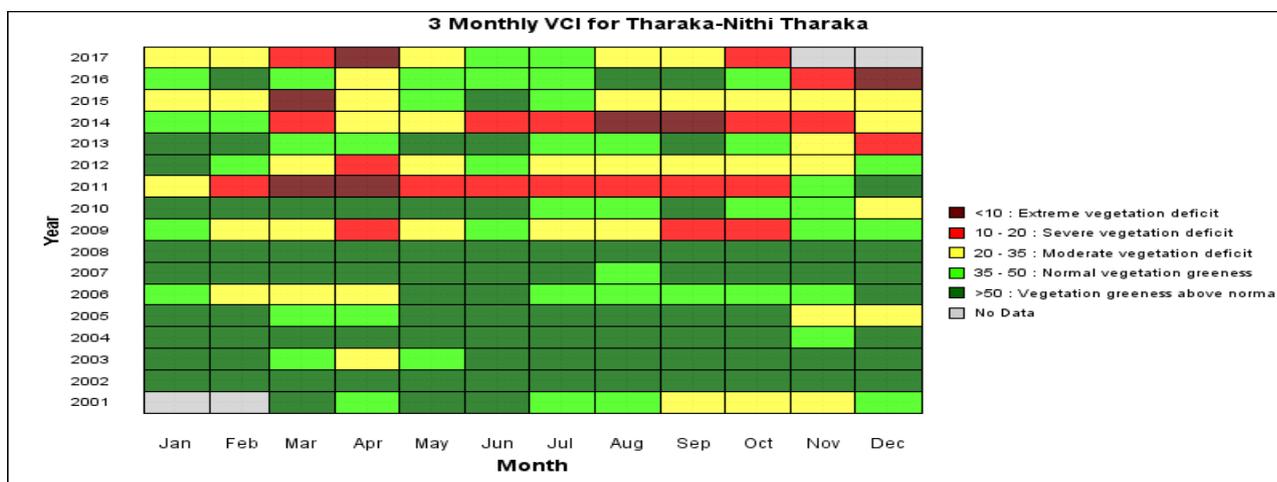


Figure 1 : VCI Matrix for Tharaka Nithi (Tharaka)

- The chart below illustrates the VCI trend for Tharaka Nithi from January to October 2017.

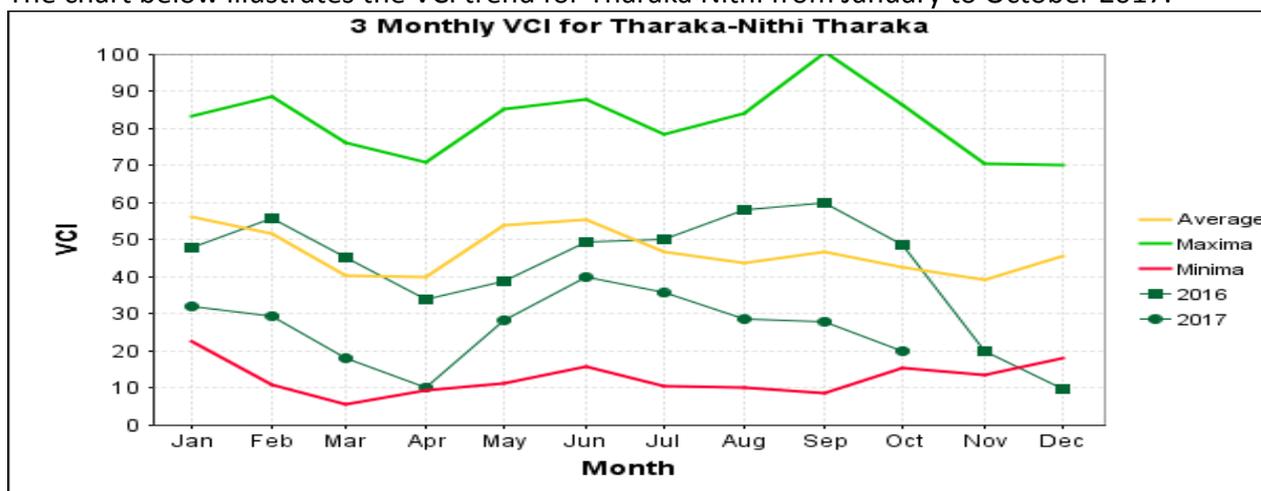


Figure 2: VCI Chart for Tharaka Nithi (Tharaka)

### 1.2.2 NATURAL VEGETATION AND PASTURE CONDITION

Field Observations (Pasture and Browse Conditions)

#### Pasture Condition

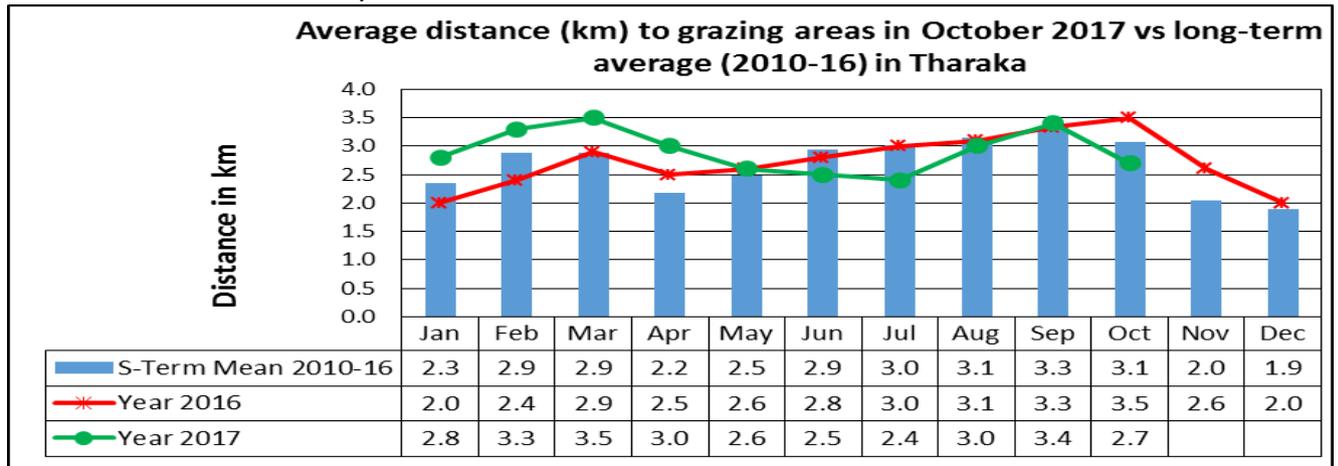
- Pasture condition in terms of quantity and quality was poor in the 1<sup>st</sup> and 2<sup>nd</sup> week of October but is expected to regenerate due to onset of rains. The pasture condition was below normal compared to the long term average for the month of October.
- Regeneration of pasture is expected in most grazing fields across all the livelihood zones.
- Internal migration was still high in the month of October with most livestock in the Marginal Mixed farming zones moving towards the Mixed Farming and the Rain fed Zones. However, these movements are expected to reduce due to regeneration of pasture in most grazing fields across the County.
- Resource based conflicts cases on pasture during the month of October reduced from that witnessed in September. Tran's boundary livestock diseases are also likely to decrease due to minimal movement of livestock if the situation improves.

**Browse Condition**

- Browse condition in terms of quantity and quality remained poor but the condition is likely to improve due to the onset of the short rains.
- The browse condition was below normal in the 1<sup>st</sup> dekad of October compared to the long term average. However, there were plenty of leaf droplets which availed food for goats which attributed to their fair body condition and enhanced milk production.

**1.2.3 Distance to Grazing Areas**

- The average distance to grazing areas decreased from 3.4Km recorded in September to 2.67 Km October which was attributed to regeneration of pasture in some areas and plenty of leaf droplets which availed food for goats.
- The longest return distance to grazing areas was recorded in the Marginal Mixed Farming at 3.35 Km, Rain fed Cropping at 2 Km and Mixed Farming livelihood zones at 1.83 Km.
- The distance to grazing areas was 12.9 percent lower than the long term average of 3.1 km for this time of the year.

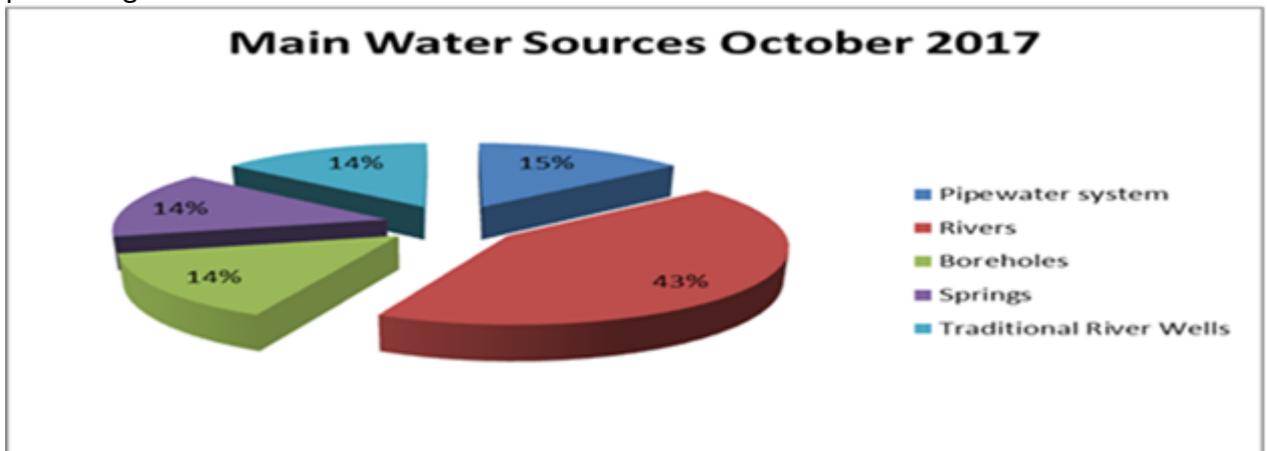


**HYDROLOGICAL DROUGHT**

**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 County were Rivers, springs, boreholes, piped water system and traditional river wells. Rivers accounted for 43%, Piped water system 15% while Boreholes, springs and Traditional River Wells accounted for 14% each.
- The state of water sources was ranked at index 3 in reference to the scale below implying the water availability was still inadequate for the month of October. The chart below shows percentage water sources as described above.



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 remained poor while that for shoats was fair across all the livelihood zones. This was attributed to poor state of pasture and browse condition. However, plenty of leaf droplets were a substitute food for goats leading to their fair body condition. This led to improved goat price and milk production for goats.

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

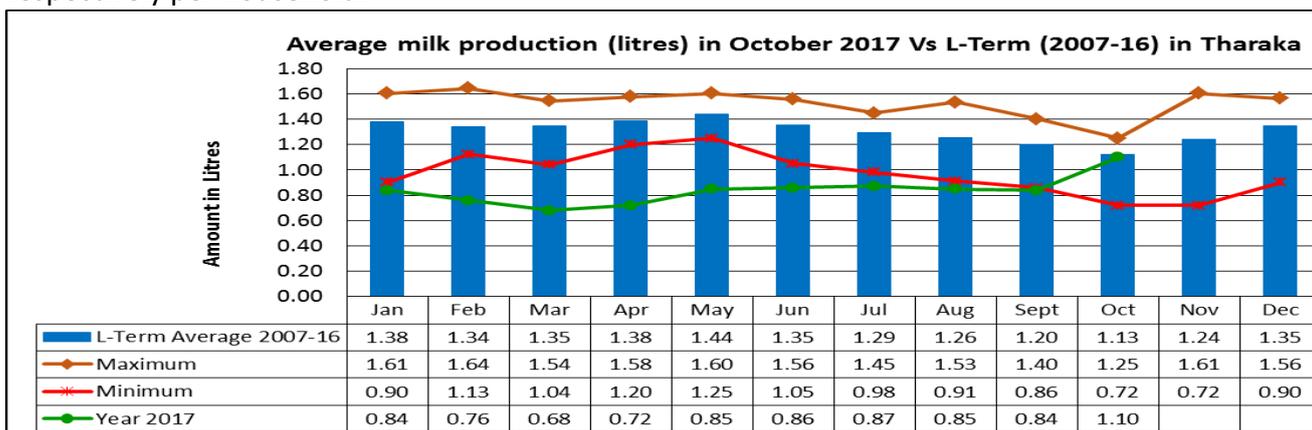
##### 2.1.3 Livestock Diseases and Migration

- Infection and death of goats from sheep and goat pox has continued to spread from Tharaka North sub-county to Tharaka South. This spread was exacerbated by cattle rustling which made farmers to move their livestock to safer regions away from areas surrounding the National Park.
- Other diseases reported during the period under review were Contagious Caprine Pleuropneumonia (CCPP), Trypanosomiasis, and Heart Water diseases, which are endemic across all livelihood zones.

##### 2.1.4 Milk Production

- Milk production increased from an average production of 0.84 of a litre in September to 1.10 litre per household in October.

- The highest milk production was recorded in the Marginal Mixed Farming livelihood zone at 1.2 litre while Mixed Farming livelihood and Rain fed livelihood zone had 1.1 litres and 1.0 litre respectively per household.



- Milk production per household was 2.65 percent lower than the 10-year average attributed to poor condition of pasture and browse due to prolonged dry spell.

## 2.2 Crop Production

### 2.2.1. Timeliness and Status of Crops

- Farming activities for the month under review included planting for the short rainy season commencing mid-October to December.
- Crops planted during the month of October were: green grams, sorghum, millet, maize, cowpeas and pigeon peas.

### 2.2.2. Pests and Diseases

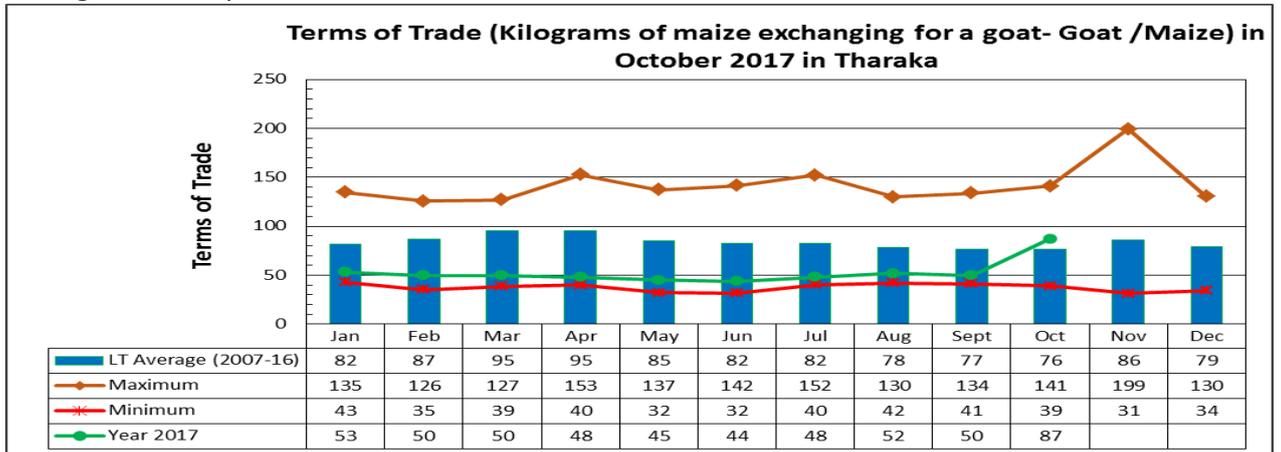
- There were no major reports of pests' infestation across all the livelihood zones.

### 3.0 ACCESS INDICATORS

#### 3.1 Livestock Prices

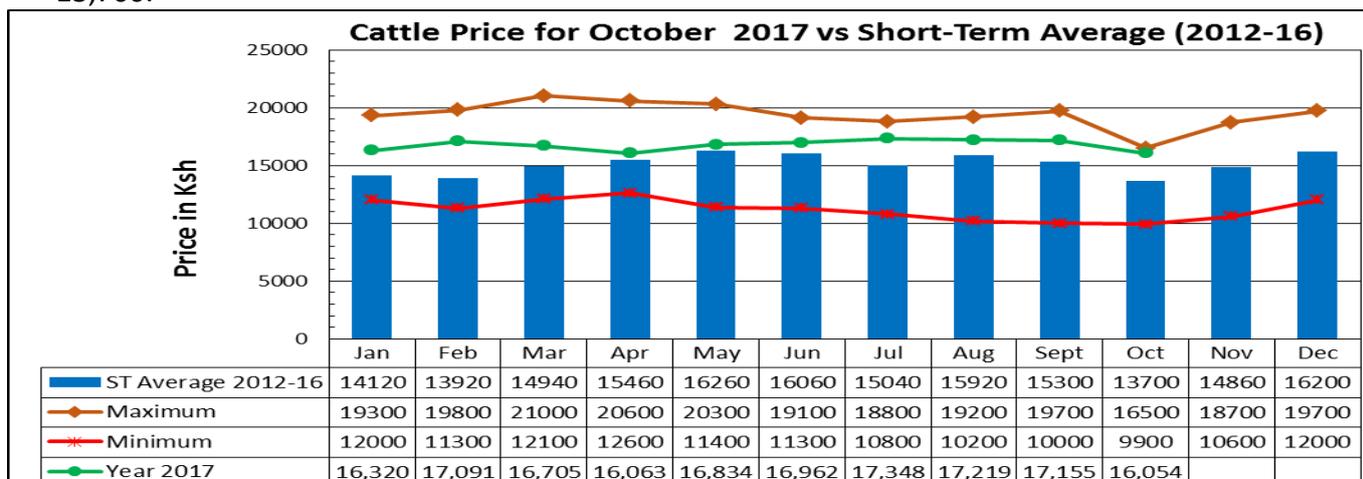
##### 3.1.1 Terms of Trade

- The Terms of Trade increased from 48 in the previous month to 87 in October, 2017 due to a decrease in maize price in relation to an increase in goat price.
- The highest ratio was recorded in the Marginal Mixed Farming zone at 95.01; Rain fed cropping at 55.56 while Mixed Farming Livelihood Zone had ToT value of 76.32.
- The ToT for the period under review was 14.5 percent higher than the long-term average value during the same period.



##### 3.1.2 Cattle Prices

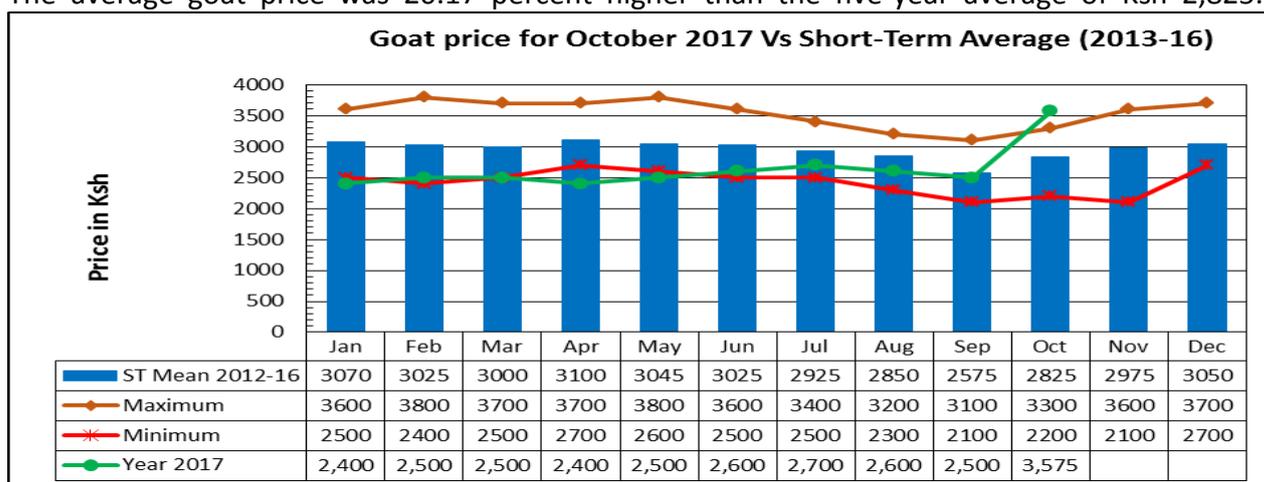
- The average household cattle price decreased from Ksh.17, 155 recorded in the previous month to Ksh. 16,054 in the month under review. Cattle prices dropped both at the farm gate and market levels, a factor that was attributed to the poor body condition following the poor quality and quantity of pasture in all livelihood zones.
- The Rain fed Cropping had the highest average price of Ksh 19,500, the Marginal Mixed Farming cattle price was Kshs 15,547 while that for the Mixed Farming livelihood zone was Ksh 16,258.
- The current price was 17.18 percent higher than the five-year short-term average of Kshs 13,700.



##### Goat Prices

- The average goat price increased from Ksh. 2,500 in September to Ksh. 3,575 in the month of October. The increase in goat price was mainly attributed to the numerous droplets of dried leafs which were fed by goats hence providing plenty of goats’ feed during the 1<sup>st</sup> dekad of October, leading to improved goats’ body condition which in turn led to increased goat price.

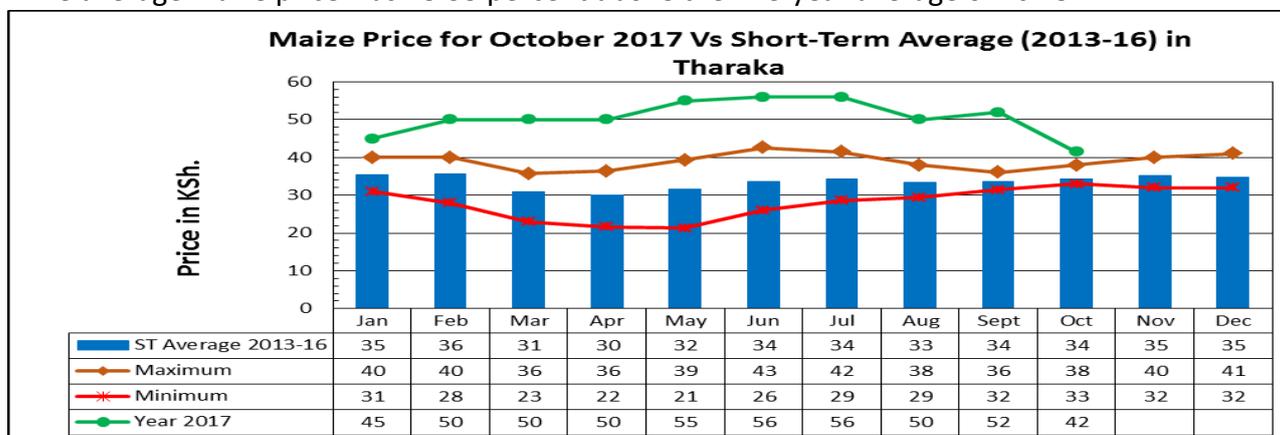
- The Marginal Mixed Farming recorded the highest average goat's price of Ksh. 3,943; Mixed Farming livelihood zone had the price of Ksh. 2,900 while the Rain fed Cropping livelihood zone goat price was Ksh 2,500.
- The average goat price was 20.17 percent higher than the five-year average of Ksh 2,825.



## Price of Cereals and Other Food Products

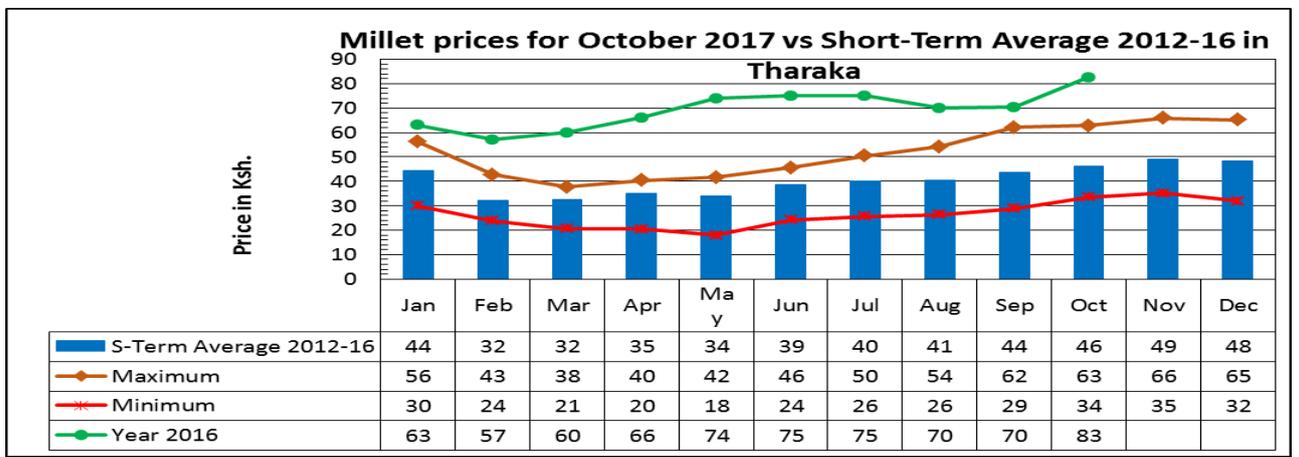
### 3.2 Maize Prices

- The average market price of a kilogram of maize decreased from Ksh.52 in September to Kshs. 42 in October per Kg of maize. This was attributed to increased supplies of maize from other Counties leading to decreased market prices.
- The highest maize price was recorded in Rain Fed Cropping Zone at Kshs 41.50 per Kilogram, followed by Marginal Mixed Farming Zone at Kshs 41.5 per Kilogram while Mixed Farming Zone recorded the lowest price of Kshs 38 per Kilogram.
- The average maize price was 23.53 percent above the five-year average of Ksh 34.



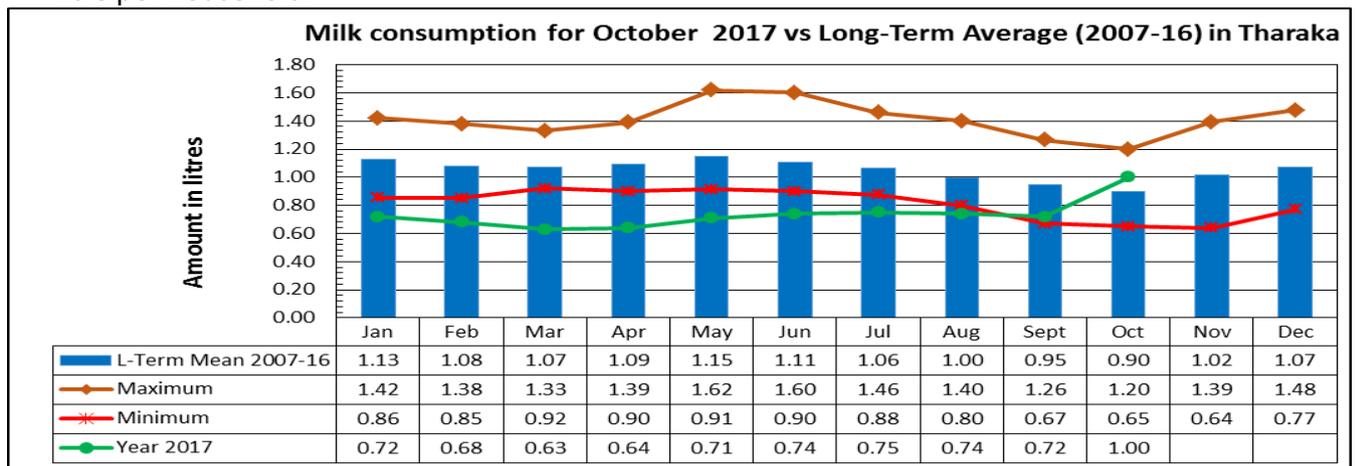
### 3.3 Millet Price at Market Level

- The average market price of millet increased from Ksh.70 in the month of September to Kshs. 83 in the month of October. The increase in Millet price was mainly attributed to the just diminishing stocks from the concluded long rain harvest leading to increased price.
- The highest market prices were recorded in Rain Fed Livelihood Zone at Kshs 80/Kg, Followed by Marginal Mixed Farming Zone at Kshs 78.5/Kg while Mixed Farming livelihood Zone recorded the price of Kshs 70/Kg.
- The cereal's price was 80.43 percent above the short-term average of Kshs.46 per Kg.

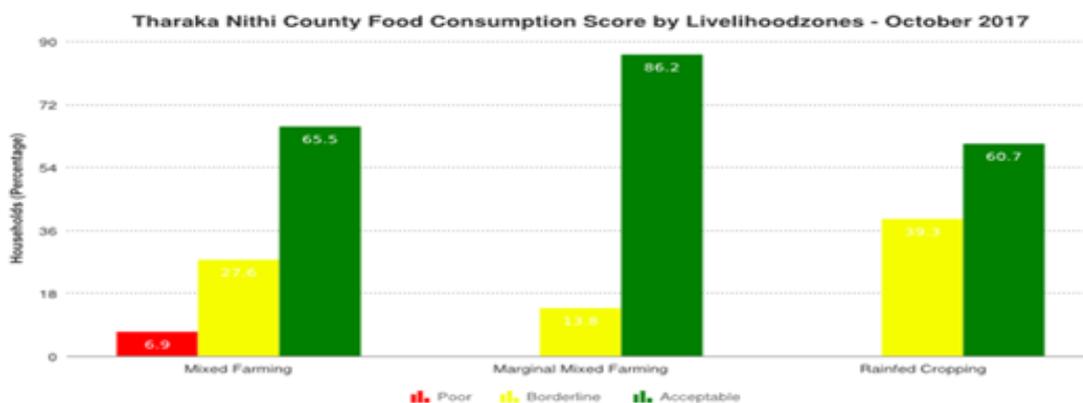


### 3.4 Milk Consumption

- The average milk consumption per household increased from 0.72 of a litre in the month of September to 1 a litre per household in the month of October, 2017. The increase was attributed to the slight increase in milk production recorded in all livelihood zones mainly from goats due to plenty of leaf droplets leading increased production of milk.
- The highest milk consumption was recorded in the Marginal Mixed Farming at 1.2 litre while households in Rain fed and Mixed Farming livelihood zones consumed 1 litre and 0.80 of a litre respectively.
- The average milk consumed was 11.1 percent above the 10-year long-term average of 0.9 of a litre per household.



#### 3.4.1 Food Consumption Score



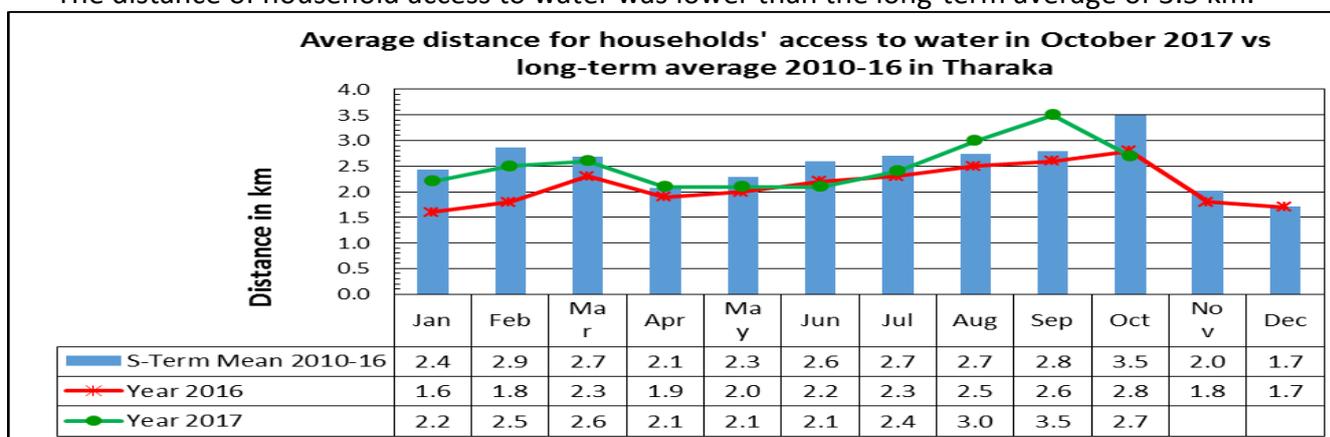
- An average of about 29.1 percent of the households were food insecure with poor and borderline food consumption scores, attributed to low stock and low purchasing power at household levels resulting to a decline in food access during the month of October. The majority of them were in the Mixed Farming and Rain Fed Livelihood Zones.

Period	Acceptable (%)	Borderline (%)	Poor (%)
February, 2017	31	53	16
March, 2017	30	52	18
April, 2017	27	53	20
May, 2017	26	52	23
June, 2017	28	52.5	19
July, 2017	30	65	15
August	26	56	18
September	26	52.33	21.666
October	70.8	26.8	2.3

- 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

- Average Household water distance decreased from 3.5 km in September to 2.7 Km in the month of October. The decrease in water distance was due to the onset of the short rains in mid-October which led to the recharge of water sources especially Rivers leading to decreased distance to water sources.
- The Marginal Mixed Farming livelihood recorded an average distance of 3.67 km , Rain Fed Cropping zone 2 Km while Mixed Farming livelihood zone 1.33 Km.
- The distance of household access to water was lower than the long-term average of 3.5 km.

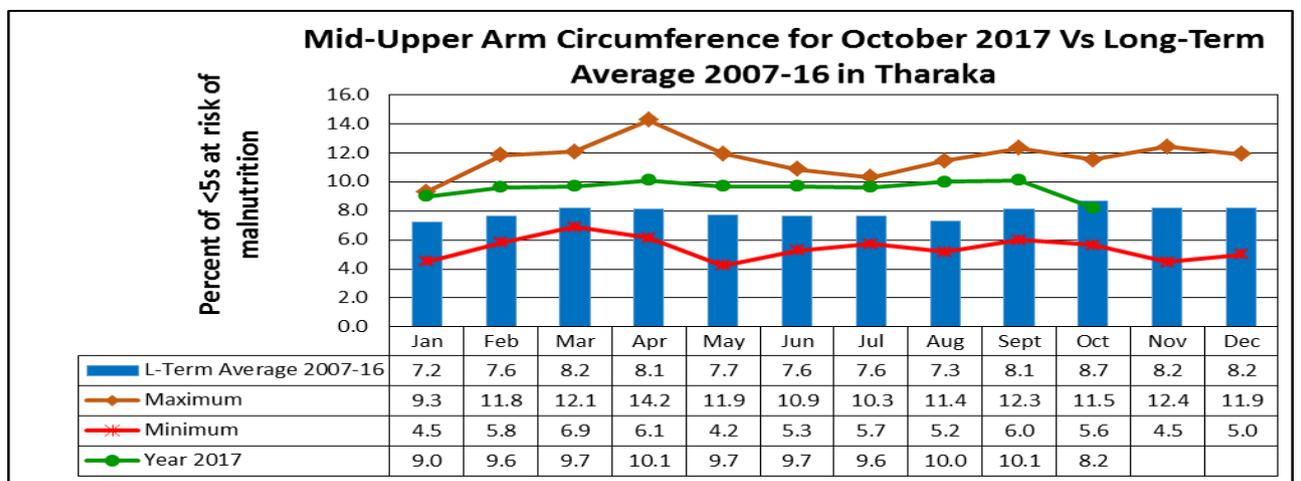


## 4.0 UTILISATION INDICATORS

### 4.1 Health and Nutrition Status

#### 4.1.1 MUAC

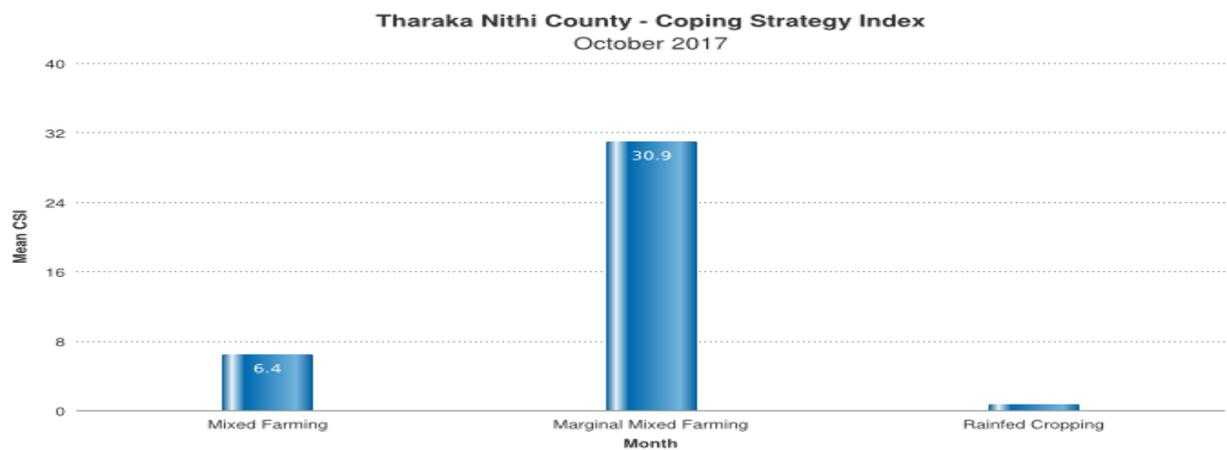
- The proportion of children between 6 to 59 months at risk of malnutrition whose MUAC measurement was below 135 mm for the month of October decreased from 10.1 percent in September to 8.2 percent in October. This decrease in MUAC percentage is attributed to a slight increase in milk production and consumption.
- The highest proportion of children at risk of malnutrition was recorded in the Rain Fed Livelihood zone at 11.0 percent compared to 7.2 percent and 6.4 percent in the Mixed Farming and Rain Fed livelihood zones respectively.
- The proportion of children at risk of malnutrition whose MUAC percentage measurement was below 135mm was above the long-term average of 8.7 percent.



#### 4.1.2 Health

- The prevalence of most common diseases for the general population in Tharaka Nithi County include 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) decreased from 15 in September to 12.63 in October which indicated a slight reduction in household stress due to lack of food or money to buy food during the month of October.
- The highest CSI was recorded in the Marginal Mixed Farming zone at 30.9, followed by Mixed Farming Livelihood Zone at 6.4 while Rain Fed Cropping had the lowest CSI of 0.6.
- The most commonly employed coping strategy mechanisms during the month of October 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

- There was onset of the short rains during the second week of October (13<sup>th</sup> October 2017) as predicted by the Kenya Meteorological Department which was normal onset for Tharaka Nithi County. The temporal and spatial distribution of the rains was good during the 1<sup>st</sup> two weeks of the onset with most of the livelihood Zones receiving rainfall for an average of 5 days. Planting has been completed in most of the Livelihood Zones and most of the farmers are preparing for weeding.

- Recharge of ground water especially permanent rivers was up to 30% of normal level which was fair while that of the underground water was still poor at about 10% however, water recharge is expected to improve if the short rains persist. Water sources are expected to improve leading to reduced distance of both household and Livestock watering distance.
- Within a few weeks, browse and pasture is expected to regenerate hence shorter grazing distance, improved milk production, improved livestock body condition and prices. Internal livestock Migration is expected to reduce along the park due to pasture and browse regeneration. Resource based conflicts emanating from competition for pasture and water is likely to decrease in the Marginal and Mixed Farming livelihood Zones due to reduced migration of Livestock into the County from the neighbouring counties of Isiolo and Garissa.
- Levels of Global Acute Malnutrition are also expected to reduce across most of the livelihood Zones due to increased milk production.
- The short rains is expected to perform well resulting to higher yield and good harvest which will in turn lead higher food stocks at household level, low commodity prices hence improved household food security. This will however be realised at the end of the three months should the rains perform well.
- Terms of Trade was favourable to Livestock farmers compared to crop farmers due to improved performance of livestock markets for goats during the month of October. 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.
- Households in the County are likely to remain in the stressed phase (IPC Phase 2) across all livelihood zones until the short rains harvest.

## 6.0 EMERGING ISSUES

### 6.1 Insecurity

- Increased theft of livestock from the neighbouring pastoralist's community of Somalia and Borana from Garissa and Mbalambala along the Meru National park has made the area a potential conflict zone.
- Theft and small crimes have also increased as a way of obtaining food due to lose of livelihoods due to the ongoing drought resulting to increased insecurity in the county.

## 7.0 CURRENT INTERVENTIONS AND RECOMMENDATIONS

### 7.1 Food Interventions

#### 7.1.1 September, Gok Relief Food Intervention Due To Drought

Location	Maize (50kgs)	Beans (90kgs)	Rice (50kgs)	Cooking Oil (24x0.5litres)
Gikingo	160	12	100	30
Thiiti	160	12	100	30
Ntoroni	160	12	100	30
Gatunga	300	90	150	30
Maragwa	250	70	120	30
Khangachini	300	70	140	30
Kanjoro	250	70	120	30
Schools	20	70	70	20
DCC's office	100	60	100	20
<b>Total</b>	<b>1700</b>	<b>466</b>	<b>1000</b>	<b>250</b>

### 7.1.2 Relief Food Allocated to 60 Schools in 4 Sub Counties by the County Commissioner's Office

Food commodity	Quantity Available for distribution	No of Schools	No. of bags per school	Beneficiary Sub County
Beans	197Bags of 90kg each	60	3Bags	Tharaka North- 11 schools
Rice	498Bags of 50kg each	60	8Bags	Maara- 10 Schools
Maize	790Bags of 50kg each	60	13Bags	Chuka Igambang'ombe-29
Cooking Oil	100 Carton	60	7 Carton	(Meru South) Tharaka South- 10 Schools

### 7.2 Non-Food Interventions by County Department of Agriculture

- Distribution of relief food to 1,115 household by Caritas through the voucher based approach in Kathangachini, Kanjoro, Kajuki and Kamaindi. Each household was getting 5 vouchers worth 500 each (Total 2,500/=).
- Supply of 3,000 improved kienyeji poultry breeds by Caritas in locations where 300 families had earlier on received 10 poultry breeds each.
- Tonnes of green grams were distributed to farmers in Tharaka North by the County department of Agriculture.
- Supply of seeds i.e. Sorghum (Gadam 1200kgs) and green grams (1200kgs) in the same locations by Caritas.
- Tonnes of Sorghum seeds were distributed to farmers in Tharaka North by the department of Agriculture.
- 1 Tonne of Cowpeas seeds were distributed to farmers in Tharaka North by the department of Agriculture
- 5,000 cartons of cassava were distributed to farmers by the department of Agriculture.
- 2,500 sweet potato vanes were distributed to farmers by the department of Agriculture.
- Support of Vaccinations of goats against CCPP and sheep and goats against goat pox by Caritas. A total of 8000 doses of CCPP for goats and 8700 doses for sheep and goats were procured and used for the vaccination exercise.- 9,000 goats were vaccinated, 3,000 sheep and donkeys against rabies.
- 80 bags of range cubes for livestock awaiting distribution in at least 4 locations at Marimanti livestock department buildings.

### 7.3 Recommendations

- Activation of the Drought Contingency plan and to support the rapid response team to carry out drought interventions during this drought alarm period by NDMA.
- Support of Range Cube distribution by provision of 150 litres of fuel and facilitation of livestock Officers by NDMA during this drought alarm period.
- Provision of livestock survival marsh and additional range cubes for livestock in the two sub counties during this drought alarm period by NDMA.
- Provision of 10 Water storage tanks for vulnerable local institutional and schools to promote water harvesting.

- Upscale Intra and inter county livestock vaccination, deworming, vector control and treatment of the sick animals; 79,000 goats and 8,000 sheep are in need of protection and treatment during this drought alarm period.
- Provision of water treatment chemicals at household level and at piped water reservoirs to minimise the risk of outbreak of water borne diseases.
- Peace Meeting and sensitisation on conflict resolution methods and common resource use in order to minimise resource based conflicts.