

**National Drought Management Authority  
THARAKA NITHI COUNTY  
DROUGHT EARLY WARNING BULLETIN FOR MARCH 2018**



A Vision 2030 Flagship Project



**MARCH 2018 EW Phase**

**Early Warning Phase Classification**

**Drought Status: ALERT**



**Maandalizi ya mapema**

	EW PHASE	TRENDS
<b>Mixed Farming</b>	Alarm	Improving
<b>Marginal Mixed Farming</b>	Alert	Improving
<b>Rain Fed Livelihood Zone</b>	Alarm	Improving
<b>County</b>	Alert	Improving
<b>Biophysical Indicators</b>	<b>Value</b>	<b>Normal Ranges</b>
<b>Rainfall Amt</b>	<b>180mm</b>	<b>64mm</b>
VCI-3month	20.64	>35
Water Sources	Fair	Normal
<b>Production Indicators</b>	<b>Value</b>	<b>Normal Ranges</b>
Livestock Migration Pattern	Migration	No Migration
Livestock Body Conditions	Fair to poor	Good
Milk Production	1 Litre	>0.98Litre
Livestock deaths (from drought)	No death	No death
<b>Access Indicators</b>	<b>Value</b>	<b>Normal</b>
Terms of Trade	138	<80
Milk Consumption	1 Litres	>0.88Litre
Water for Households	Normal	Normal
<b>Utilization indicators</b>	<b>Value</b>	<b>Range/Value</b>
MUAC	3.2	<8.0
Coping Strategy Index (CSI)	6.67	<52
Food Consumption (Marginal Mixed Farming)	95.1 Percent Acceptable	>80 Percent Acceptable

**Drought Situation & EW Phase Classification**

**Biophysical Indicators**

- Onset of the long rains was on the 2<sup>nd</sup> week of March which was normal. March rainfall was higher than the long term average. The spatial and temporal distribution of the rains was fair in most areas across all the four livelihood Zones.
- Vegetation cover across the County was below normal with an improving trend. The water recharge level in rivers was about 80% which was normal however; there was increased contamination of surface water hence risk of outbreak of water related diseases such as diarrhoea and cholera.

**Socio Economic Indicators (Impact Indicators)**

**Production Indicators**

- The condition of pasture was fair while that of browse ranged from fair to good with improving trends. Livestock body condition for cattle was fair while that of goats ranged from fair to good.
- Food Stock at households' level remained low although market supply of cereals increased from outside the county leading to fair prices.

**Access Indicators**

- Livestock prices remained within the normal range while grazing and household water distance decreased from that of the previous month due to onset of the long rains.
- Milk production and consumption per household remained low.

**Utilization Indicators**

- Percentages of children at risk of malnutrition was within the normal range but increased slightly from that of the previous month.
- Following all the above prevailing conditions, the overall drought phase in March remained at alert but the trend was improving.

**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>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

# 1.0 CLIMATIC CONDITIONS

## 1.1 RAINFALL PERFORMANCE

- Onset of the long rains was on the 2<sup>nd</sup> week of March which was normal. An average of 150mm of rainfall was received in the county for the month of March.
- With reference to the long-term average, rainfall performance for March was above the long term average of 64mm which was normal.

### 1.1.1 Rainfall Station data

- The figure below shows the actual rainfall received in mm during the month of March.

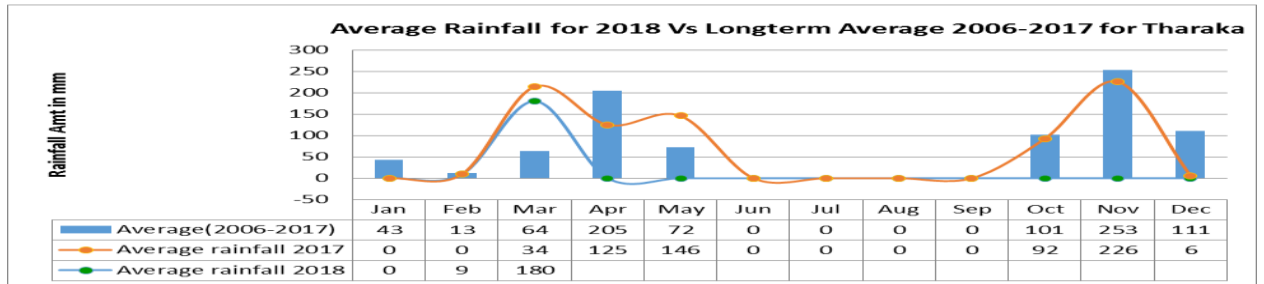


Figure 1: Average Rainfall for March 2018

### 1.1.2 Spatial and Temporal Distribution

- Rainfall was evenly distributed across the county. Chakariga received 247.7mm for 10days, Tunyai received 223mm for 9 days, Kamanyaki in the Marginal Mixed received 220.2mm for 9 days and Kathanga Chini 141.5 for 6 days as shown by figure 2 below.

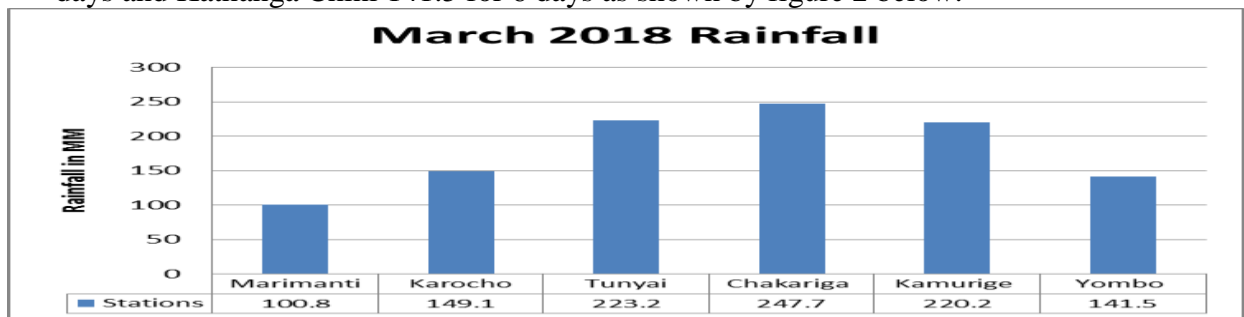


Figure 2: Spatial and Temporal Distribution

### 1.1.3 Dekadal Distribution of Rainfall

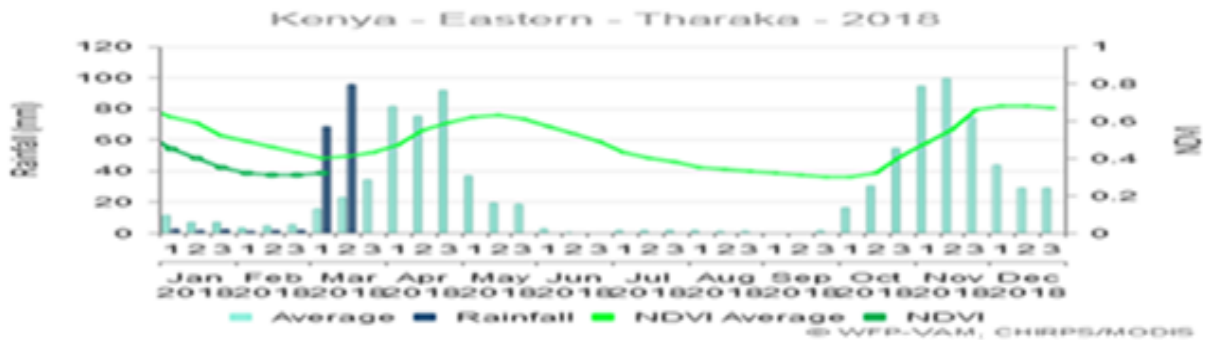


Figure 3: March 2018 Rainfall Distribution by Dekad

## 2.0 IMPACTS ON VEGETATION AND WATER

### 2.1 Vegetation Condition Index (VCI)

- The vegetation cover for Tharaka Nithi County in the month of March was below normal compared to the long term average.
- The Vegetation Condition Index for Tharaka Nithi County was 20.64 indicating below normal vegetation condition.

**Table 1: March 2018 VCI (3M)**

ADMINISTRATIVE UNITS		VCI as at 26 <sup>th</sup> February 2018	VCI as at 26 <sup>th</sup> March 2018
County	County/Sub County		
Tharaka Nithi	County	21.06	20.64
	Tharaka	8.56	11.69
	Chuka Igambang'ombe	33.42	28.46
	Maara	45.56	39.41

- The matrix below shows the vegetation condition for the month of March 2018 classified based on VCI thresholds.
- Figure 3a indicates the whole county was at a moderate drought while Figure 3b indicates that Tharaka which comprises of Tharaka North and South was at severe vegetation deficit.

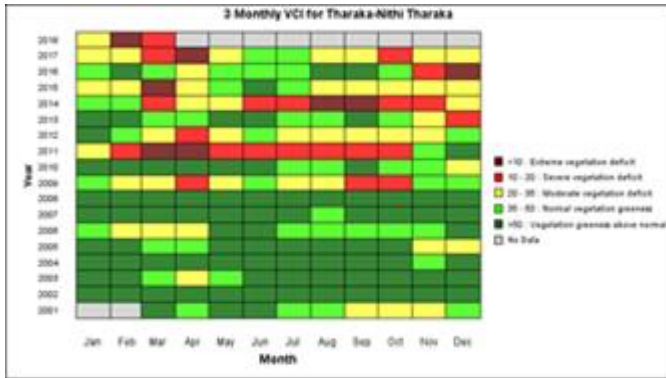
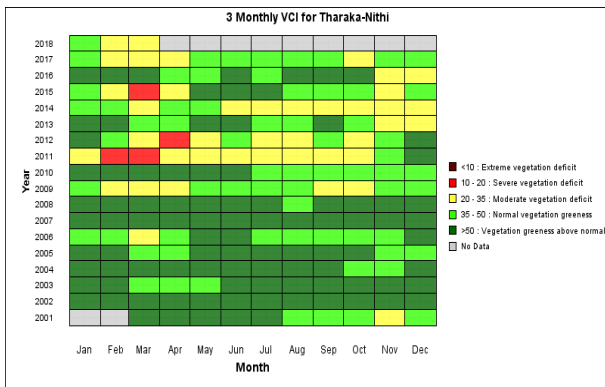


Figure 4: VCI Matrix for Tharaka Nithi

Figure 5: VCI Matrix for Tharaka

The chart below illustrates the VCI for Tharaka Nithi (Tharaka) for the month of March 2018.

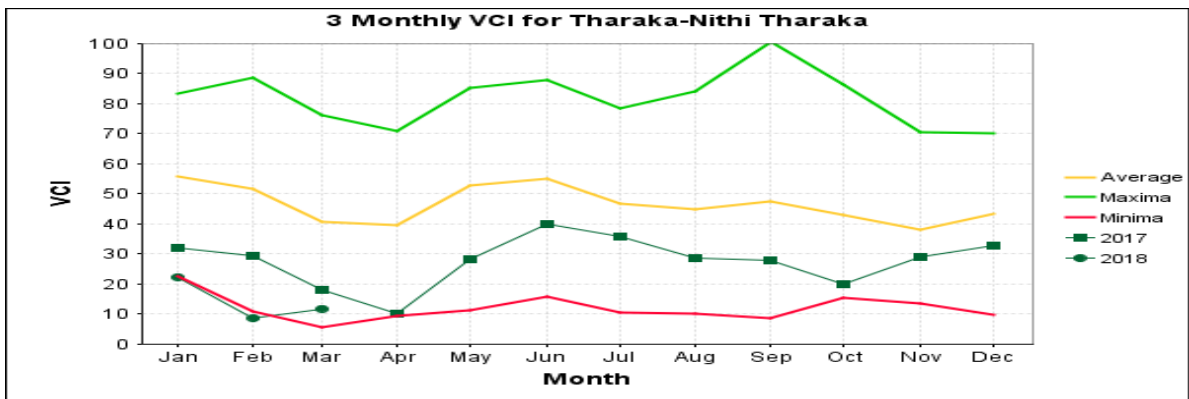


Figure 6: VCI Chart for Tharaka Nithi (Tharaka)

## 2.2 Natural Vegetation and Pasture Condition

### Pasture Condition

- Pasture condition in terms of quantity and quality was fair in March and it continued to improve. The pasture condition was below normal compared to the long term average for the month of March and it increased compared to that of the previous month.
- Livestock in migration reduced in March compared to the month of February from the neighboring counties of Garissa along the areas of Kiamiramba hence reducing cases of conflicts between farmers and herders.

### Browse Condition

- Browse condition in terms of quantity and quality ranged from fair to good and the condition continued to improve. The browse condition was however, below normal compared to the long term average.

## 2.3 Distance to Grazing Areas

- The average distance to grazing areas decreased from 2.6Km in February to 2.0Km in March. This was attributed to improvement in pasture and browse leading to shorter distances. The longest return distance to grazing areas was recorded in the Marginal Mixed Farming Zone at 2.8Km, Mixed Farming livelihood zones at 2.1Km while in Rain fed Cropping it was 1 Km.
- The distance to grazing areas was 39.4 percent lower than the long term average of 3.3 km for this time of the year.

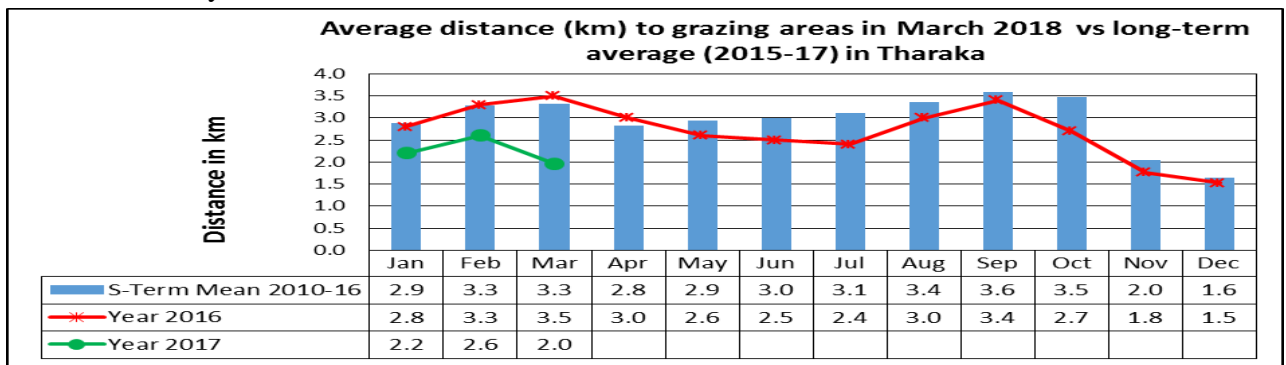


Figure 7: Grazing Distance for Livestock

## 2.2 Water Sources and Availability

### 2.2.1 Main Sources of Water

- The major sources of water for livestock and domestic use in Tharaka Nithi County were Traditional river wells, Rivers, Shallow Wells and Boreholes as shown by figure 6 below.

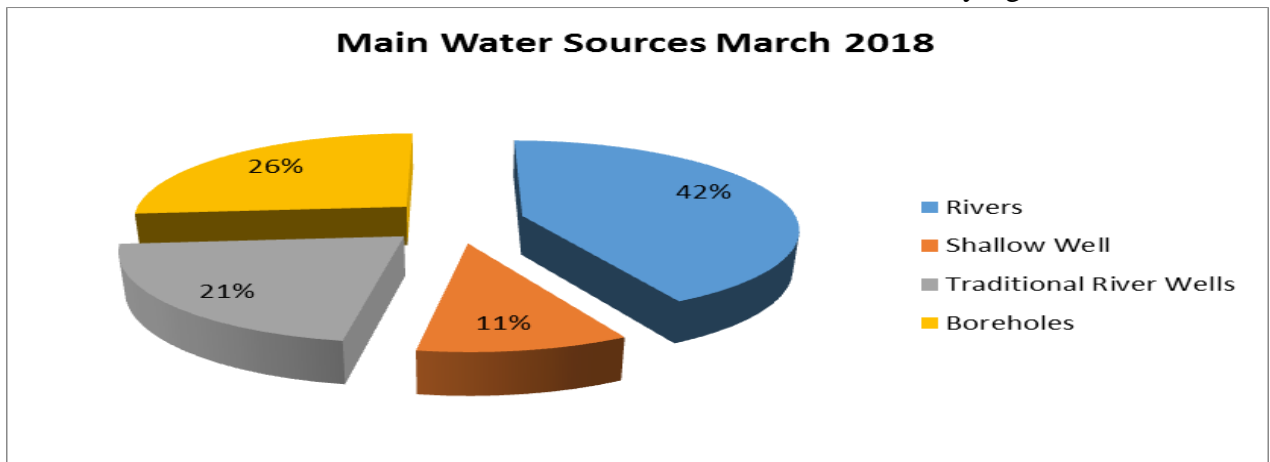


Figure 8: Main Water sources for March 2018

## State of Water Sources

- The state of water sources for the month of March was normal an improvement from that of the previous month. This is due to onset of the long rains.
- The status of water sources was ranked at index 5 in reference to the scale below:

**Table 2: State of Water Sources**

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

## 3.0 PRODUCTION INDICATORS

### 3.1 Livestock Production

#### 3.1.1 Livestock Body Condition

- Livestock body condition for both cattle and shoats was fair to good across all the livelihood zones. This was attributed to improvement in pasture and browse. For most livestock, current body condition can be rated at index 5 as per the threshold scale below.

**Table 2: Livestock Body Condition categories**

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

#### 3.1.2 Livestock Diseases and Migration

- Livestock in migration cases from the neighbouring counties of Garissa and Isiolo reduced greatly. Livestock diseases associated with drought were also minimal in the month of March.

### 3.1.3 Milk Production

- Milk production in March remained low with no significant change from that of February.
- Marginal Mixed Farming livelihood zone had an average production of slightly above 1 litre while Mixed Farming and Rain Fed livelihood zone had an average milk production of less than a litre per household per day each. This was attributed to fair pasture and browse in March. Milk production per household was 2 percent higher than the 3-year average of 0.98 litre.

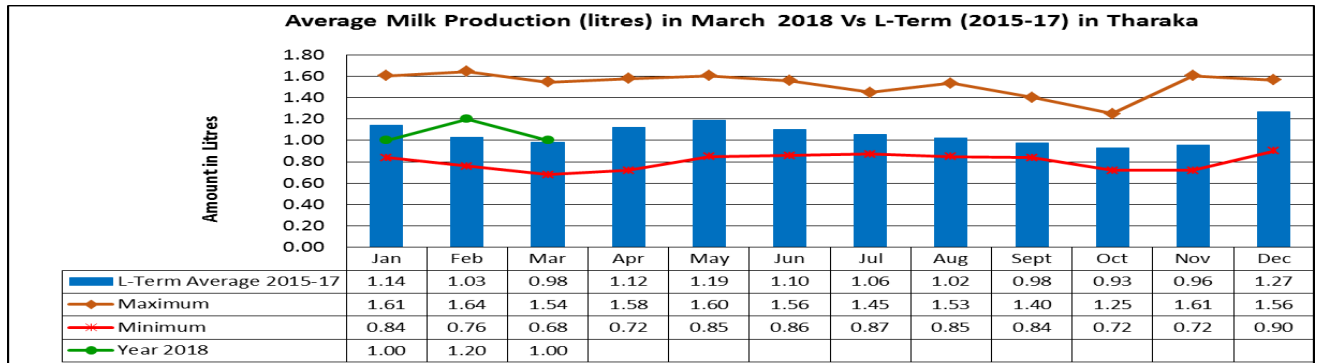


Figure 9: Milk production Trend

## 3.2 Crop Production

### 3.2.1. Timeliness and Status of Crops

- Farming activities for the month under review was land preparation and planting of millet, Sorghum, green grams and cow peas in most areas. There were also a few crops which were at the germination stage.

### 3.2.2. Pests and Diseases

- No pests and crop diseases were reported in the county during the month of March, however, there is need for mitigation measures to be put in place to avoid crop losses to pest and diseases in the oncoming long rain season. Threats of cut worms are a major threat to food security.

## 4.0 MARKET PERFORMANCE

### 4.1 Livestock Prices

#### 4.1.1 Cattle Prices

- The average cattle price decreased slightly from Kshs. 21,864 recorded in the previous month to Ksh. 21,714 in the month of March. Although there was improvement in pasture, decreased cattle price could be attributed to reduced body condition due to climatic changes leading to reduced cattle prices.
- The Mixed Farming livelihood had the highest average price of Ksh 30,333, Rain Fed Cropping Livelihood Zone had the price of Ksh 23,000 while that for the Marginal Mixed Farming Zone was Kshs 18,000.
- The current price was 24.86 percent higher than the three-year average of Kshs 17,391.

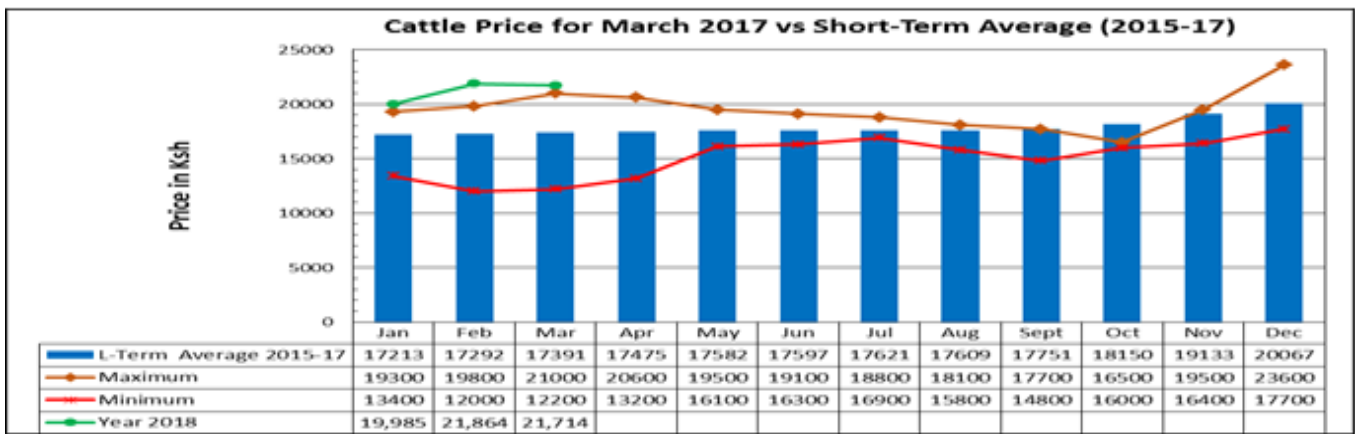


Figure 10: Cattle Price Trend

### 4.1.2 Goat Prices

- The average goat price increased from Ksh. 4,032 in February to Ksh. 4,429 in the month of March. Increased price could be attributed to fair body condition due to improvement in browse.
- The Marginal Mixed Farming Livelihood Zone had the highest price of Ksh. 5,063, Rain Fed Cropping Livelihood Zone price was Ksh 4,200 while Mixed Farming Zone recorded an average goat's price of Ksh. 2,967.
- The average goat price was 52.72 percent higher than the three-year average of Ksh 2,900.

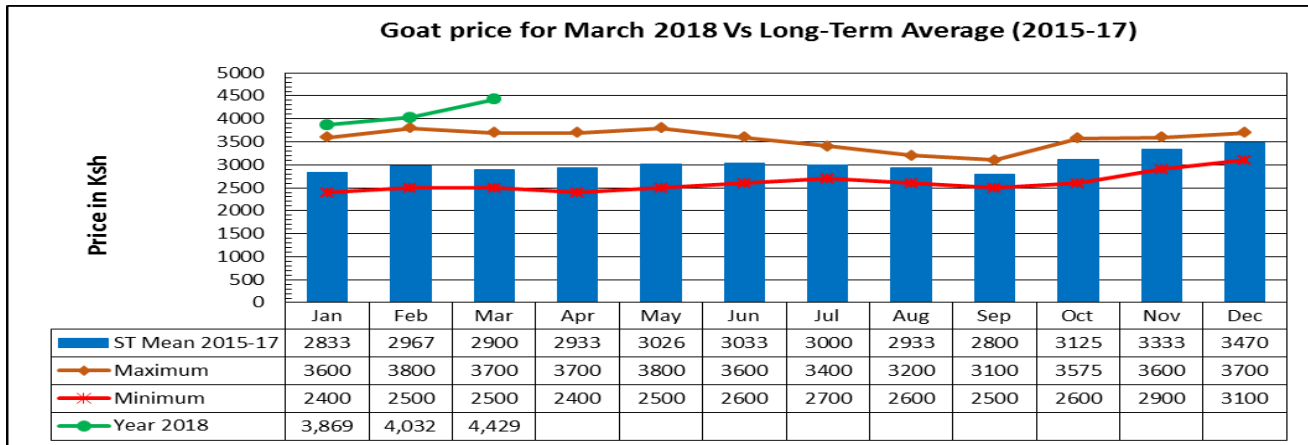


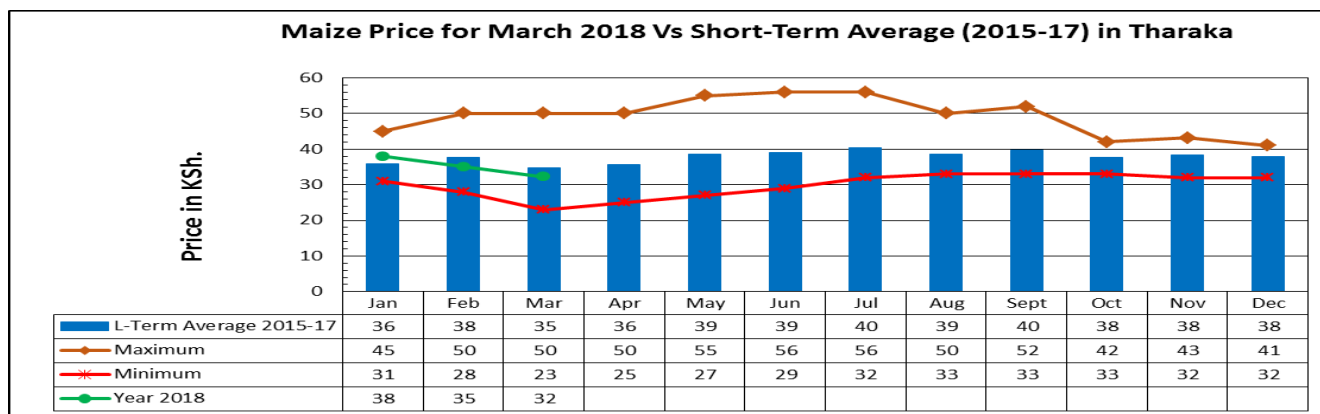
Figure 11: Goat Price Trend

## 4.2 Price of Cereals and Other Food Products

### 4.2.1 Maize Prices

- The average market price of a kilogram of maize decreased from Kshs. 35 per Kg in February to Kshs. 32 per Kg in March. This was attributed to increased supplies of maize from outside the counties especially in the Rift Valley and Western Region areas such as Eldoret, Nakuru and Busia.
- The highest maize price was recorded in the Mixed Farming Zone at Kshs 34, followed by Marginal Mixed Farming Zone at Kshs 33 per Kilogram, while Rain Fed Cropping Zone recorded the lowest price of Kshs 30 per Kilogram.
- The average maize price was 8.57 percent lower than the three-year average of Ksh 35.

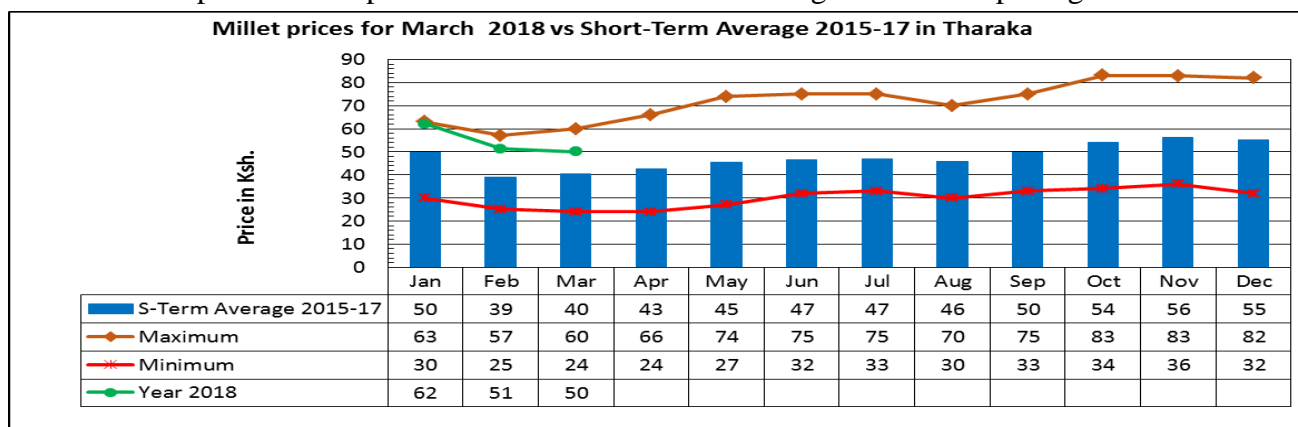




**Figure 12: Maize Price Trend**

### 4.2.2 Millet Price at Market Level

- The average market price of millet decreased from Kshs. 51 per Kg in February to Kshs 50 per Kg in March due to few numbers of traders caused by impassable roads due to ongoing rainfall hence decreasing millet price.
- The highest market prices were recorded in Rain Fed Livelihood Zone at Kshs 60/Kg, Followed by Marginal Mixed Farming livelihood Zone at Kshs 50/Kg while Mixed Farming livelihood Zone recorded the lowest price of Kshs 40/Kg.
- The millet price was 25 percent above the short-term average of Kshs.40 per Kg.



**Figure 13 : Millet Price Trend**

### 4.2.3 Terms of Trade (ToT)

- The Terms of Trade increased from 115 in the previous month to 138 in March due to increase in goat price and a decrease in maize price.
- The highest ratio was recorded in the Marginal Mixed Farming Zone at 153; followed by Rain Fed Cropping Livelihood Zone at 140 while Mixed Farming Livelihood Zone had a ToT of 87.
- The ToT for the period under review was 72.5 percent higher than the three year average value of 80 during the same period.

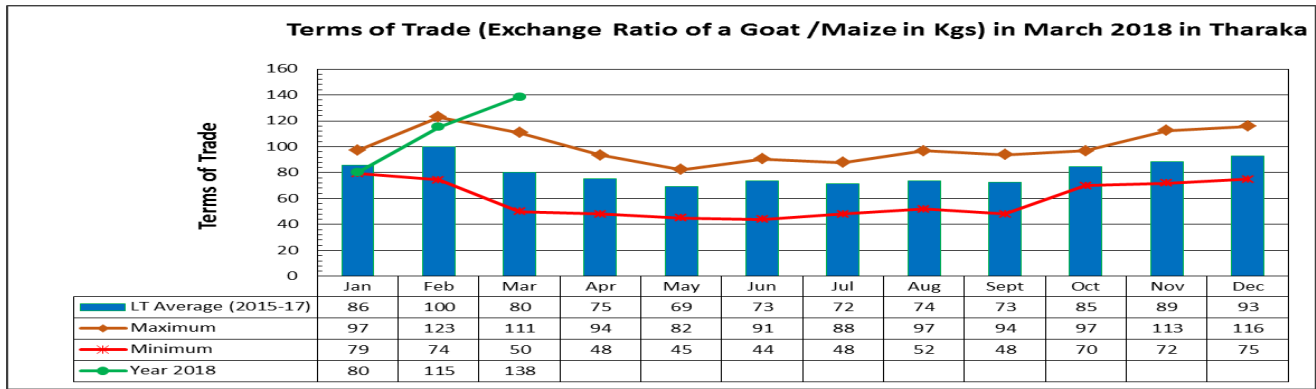


Figure 14: Term of Trade

## 5.0 FOOD CONSUMPTION AND NUTRITION STATUS

### 5.1.1 Milk Consumption

- The average milk consumption in March increased from that of the previous month to 1 litre per household but it was still low due to low milk production at household level. Milk consumption was generally low across all the livelihood zones.
- The average milk consumed was 13.6 percent higher than the 3-year average of 0.88 litre per household per day.

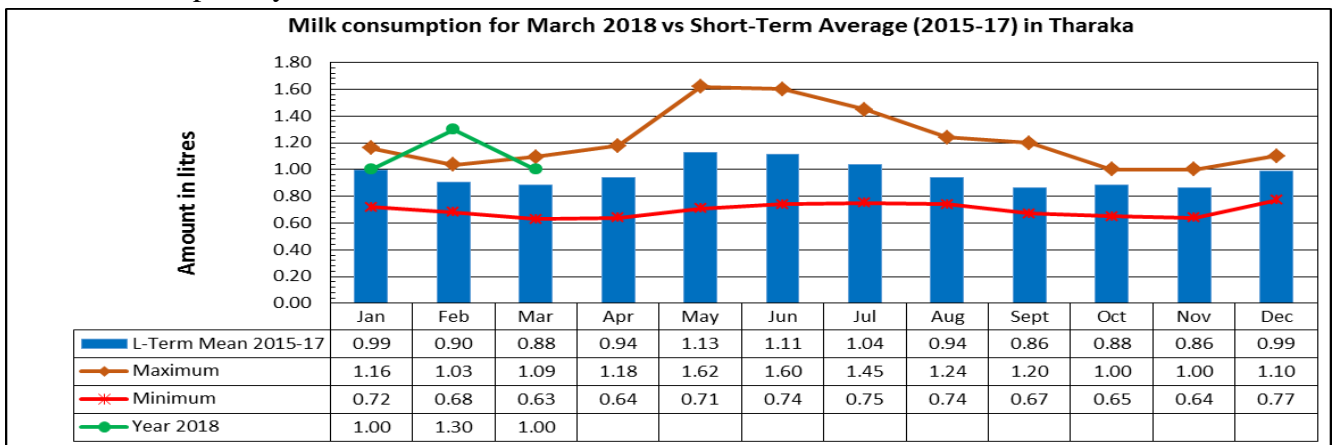
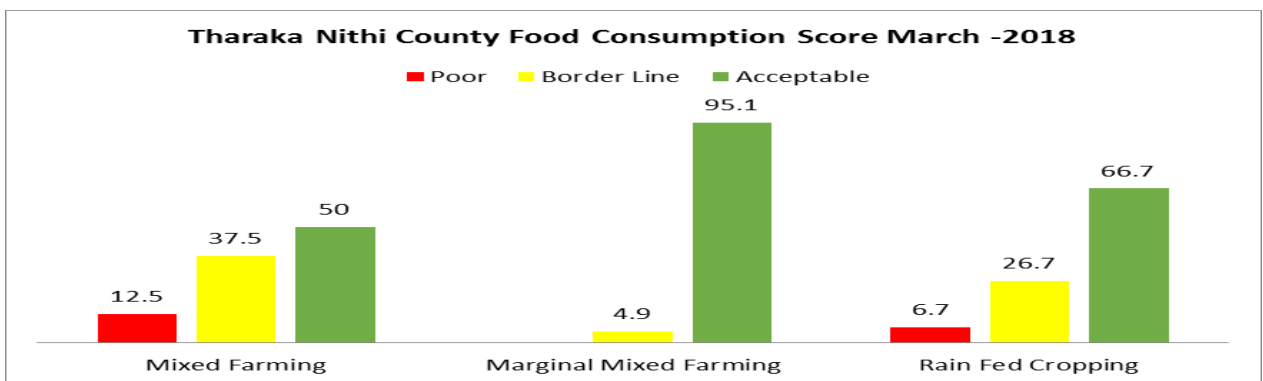


Figure 15: Milk Consumption Graph

### 5.1.2 Food Consumption Score



**Figure 16: Food Consumption Score Chart**

- Proportion of food insecure households with poor and borderline Food Consumption Score (FCS) decreased from 38.97% in February to 29.43% in March. This could be attributed to decrease in food prices hence increasing household access to food. The majority of Food Stressed Households were in the Mixed Farming Livelihood Zone and were 50%, followed by Rain Fed Livelihood Zone at 33.4% while Marginal Mixed Farming Livelihood Zone had the least proportion of food stressed households at 4.9%.

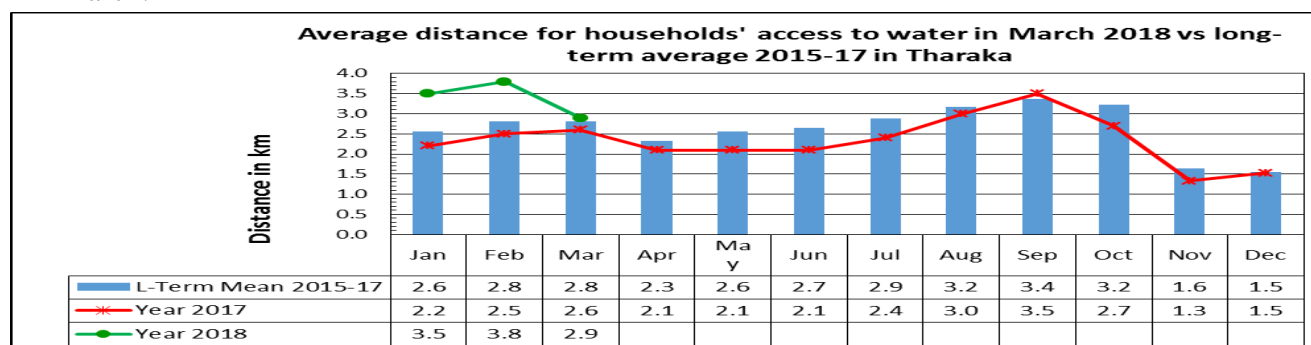
**Table 3: Average Food Consumption Score**

Period	Acceptable (%)	Borderline (%)	Poor (%)	Food Insecure HH (%)
December,2017	72.47	26.47	1.067	27.537
January, 2018	66.1	27.23	6.53	33.76
February,2018	60.97	36.8	2.17	38.97
March	70.6	23.03	6.4	29.43

- 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.

### 5.1.3 Availability of Water for Household

- Average Household water distance decreased from 3.8 km in February to 2.9 Km in the month of March. The decrease in water distance was due to recharge of surface and underground water level increased rainfall. The Marginal Mixed Farming livelihood recorded an average distance of 3.5 Km, Mixed Farming livelihood zone 2.9 Km while Rain Fed Cropping zone recorded a distance of 2.2 Km.
- The distance of household access to water was higher than the long-term average of 2.8 Km for March.



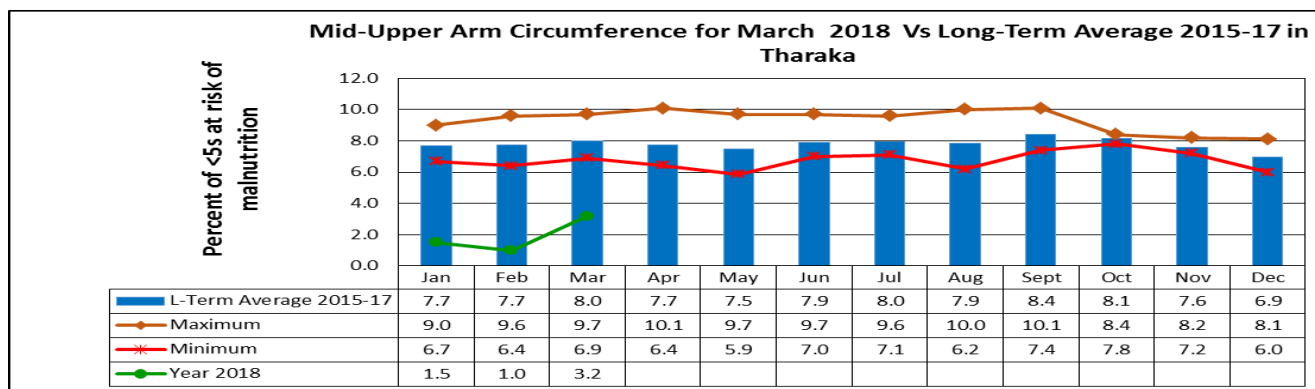
**Figure 17 : Household Water Distance Graph**

## 5.2 UTILISATION INDICATORS

### 5.2.1 Health and Nutrition Status

#### 5.2.2 MUAC

- The proportion of children between 6 to 59 months at risk of malnutrition whose MUAC measurement was below 135 mm increased from 1.0 percent in February to 3.2 percent in March. The decrease in MUAC percentage was attributed to low milk production.
- The proportion of children at risk of malnutrition whose MUAC measurement was below 135mm was below the long-term average of 8.0 percent.

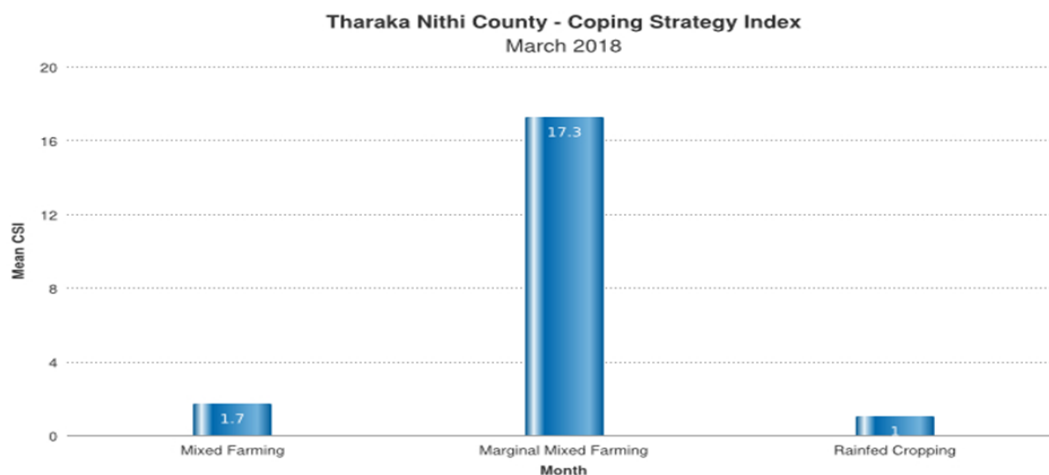


**Figure 18: MUAC Graphs**

### 5.2.3 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.

### 5.2.4 Coping Strategy Index



**Figure 19: CSI Chart**

- The Coping Strategy Index (CSI) increased from 3.63 in February to 6.67 in March which indicated a slight increase in household stress due to lack of food or money to buy food during the month. However, the CSI was within the normal range.
- The highest CSI was recorded in the Marginal Mixed Farming zone at 17.3, followed by 1.7 for Mixed Farming Livelihood Zone while Rain Fed had the lowest CSI of 1.
- The most commonly employed coping strategy mechanisms during the month of March was: - Obtaining of goods on credit, Reliance on less preferred and less expensive food, reduction of the number of meals and reduction in portion or size of meals.
- Some households employed livelihood based coping strategies such as sale of some household assets, spending of savings as well as borrowing of short term loans.

## 6.0 CURRENT INTERVENTIONS AND RECOMMENDATIONS

### 6.1 Non-Food Interventions

Table 4: Non-food interventions

Sub	Intervention	Location	No. of beneficiaries	Implementers	Cost	Time Frame
<b>Agriculture</b>						
Tharaka North and South	Promotion of conservation agriculture	all	3400 Famers	MOA/FAO	20M	December 2019
	Cereals Enhancement program	all	9000	MOA/KCEP	40M	December 2019
	ISPP	all	4000	FAO	20M	December 2019
<b>Livestock</b>						
Tharaka South and North	(Rural livelihood) Dairy farming – goats and cow	Marimanti, Nkondi Chiakariga, Gatunga and Mukothima	210	Upper-Tana ,Caritas of Meru and Livestock Production Office	Kshs. 2.5M	From August 2017 (continuous)
	[Rural livelihood]Improving local indigenous chicken	Mukothima and Gatunga	250	Upper-Tana ,Caritas of Meru and Livestock Production Office	2.5 m	From August 2017 continuous
<b>Water</b>						
Tharaka North	Keiranthi Earth Dam Project	Kathanga Chini	1,660 HH 6,000 Goats 2,000 cattle 200 donkeys	NDMA	9.6m	From Nov 2017 to March 2018
Tharaka South and North	Upgrading of 15 water facilities, construction of elevated tower for storage tanks and solar panels and a distribution line	Gatunga-3no. Marimanti-2 no., Chiakariga-3 no, Igambang'ombe - 3, Mukothima-2no. Nkondi - 2no	Gatunga-700, Mari- 450 Chiaka- 650 Igamba- 800 Mukothima-450 Nkondi -400	County Government	5 Million	3 months
Tharaka South	Irrigation scheme	6 sites in Nkondi Ward, I site in Chiakariga and 2 sites Marimanti	7200 Beneficiaries	National Government and County Government and UTANRMP	450 Million	24 Months
<b>Health and Nutrition</b>						
Tharaka South and North	High impact nutrition programme	All health facilities	All children under 5 years, pregnant and lactation mothers.	MOH	11m	Continuous
	Management of Acute Malnutrition (IMAM)	Health facilities		MOH and NHP	2.3m	Continuous

## **7.0 EMERGING ISSUES**

### **7.1 Insecurity**

- Resource based conflicts decreased in the month of March compared to that of February. This was due to reduced cases of in-migration of livestock from Garissa hence reducing pressure and competition for pasture which is a major cause of conflict.

### **7.2 Food Security Prognosis**

- Food Stocks at households' level remained low still ranging between 50-60% of their normal level due to poor harvest during the short rain season. The stocks are likely to remain low until the next harvest after the long rains which will be around July.
- Due to poor short rain harvest, most of the county residents depend on markets for most of their food stocks which are sourced from outside the county and this is likely to continue for the next three months and therefore, any disruption of the market is likely to be detrimental to food security.
- With the onset of the long rains, status of water sources is normal with household and Livestock watering distance being within normal ranges and the situation is likely to continue for the next two months.
- Browse and pasture condition is fair to good and the situation is improving due to onset of the long rains which will likely result to shorter grazing distance, increased milk production; improved livestock body condition and fair livestock prices in the next few weeks
- Terms of Trade was still favourable to Livestock farmers compared to crop farmers due to higher livestock prices compared to the long term average but this is likely to change.
- Households in the County are likely to improve from stressed phase (IPC Phase 2) in the next 3 months.

## **8.0 Recommendations**

- Promote Rain Water Harvesting during this long rain season at home and in Institutions.
- Upscale establishment of Farm ponds to promote rain water harvesting for small scale subsistence irrigation farming by NDMA through the Food for Asset (FFA) Project.
- Review of the Contingency plan and development of the preparedness proposal.
- Provision of water treatment chemicals at household level and at piped water reservoirs to minimise the risk of water related diseases.
- Promote the establishment and management of livestock fodder.
- Upscale Intra and inter county livestock vaccination, deworming, vector control and treatment of the sick animals during this drought alert period.
- Fencing and inlet preparation of four household water pans which were completed in December at Nthwa in Kamwathu by International Aid Services.
- Sensitisation and promotion of water treatment methods to avoid infection and spread of water related diseases.