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

A Vision 2030 Flagship Project

NOVEMBER 2017 EW Phase

Early Warning Phase Classification

Livelihood Zone	EW PHASE	TRENDS
Mixed Farming	Alert	Improving
Marginal Mixed Farming	Alert	Improving
Rainfed cropping	Alert	Improving
County	Alert	Improving
Biophysical Indicators	**Value**	**Normal Ranges**
VCI-3month (Tharaka)	28.97	>35
Water Sources	Fair	Normal
Production Indicators	**Value**	**Normal Ranges**
Livestock Migration Pattern	Migration	No Migration
Livestock Body Conditions	Fair to Good	Good
Milk Production	1.10Litres	>1.24 Litre
Livestock deaths (from drought)	No death	No death
Access Indicators	**Value**	**Normal**
Terms of Trade	81	<86
Milk Consumption	1 Litres	>1.02Litre
Water for Households	Good	Good
Utilization indicators	**Value**	**Range/Value**
MUAC	7.4	<8.2
Coping Strategy Index (CSI)	11.7	<52
Food Consumption (Marginal Mixed Farming)	86.7Percent Acceptable	>80 Percent Acceptable

Drought Situation & EW Phase Classification

Biophysical Indicators

- An average of 232mm of rain was received in the County for the month of November. The rains received were slightly below normal as compared to the long term average of 256mm for November.
- The Vegetation Condition Index (VCI3M) increased from 27.76 to 28.97 indicating a moderate deficit in vegetation for November.
- The water recharge level was fair with most of the rivers impounding water to up to 80% of their normal level. However, rain water run-off into rivers increased water contamination hence the risk of water related diseases.

Socio Economic Indicators (Impact Indicators)

Production Indicators

- The condition of pasture and browse were fair and improving compared to that of the previous Month. Livestock body condition for both cattle and goats were also fair and improving due to improved pasture and browse compared to the previous months.
- Farming activities reported in the month of November were mostly weeding and pest control by spraying with agro-chemicals.

Access Indicators

- There was an increase in cattle price and a slight drop in goat price. Maize prices increased although it still remained within the normal range while the millet price remained constant.
- Milk production and consumption per household level increased from that of the previous months.

Utilization Indicators

- Percentage of children at risk of malnutrition decreased from 8.2 % in October to 7.4% in November.

Seasonal Calendar

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
▪ Short rains harvests ▪ Short dry spell ▪ Reduced milk yields ▪ Increased HH Food Stocks ▪ Land preparation			▪ Planting/Weeding ▪ Long rains ▪ High Calving Rate ▪ Milk Yields Increase			▪ Long rains harvests ▪ A long dry spell ▪ Land preparation ▪ Kidding (Sept) ▪ Increased HH Food Stocks				▪ Short rains ▪ Planting /weeding	

BIO-PHYSICAL INDICATORS

1.0 MEASURING DROUGHT HAZARD

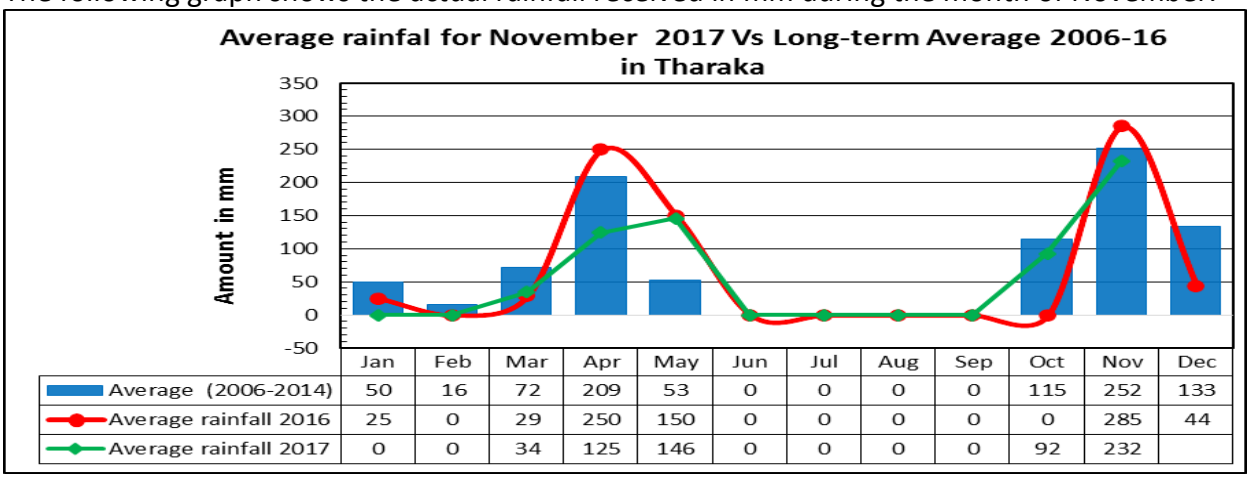
1.1 METEOROLOGICAL DROUGHT

1.1.1 Actual Rainfall

- Rainfall was continuous since its onset on the second week of October to November. An average of 232 mm of Rain was received in the county for the month of November.
- With reference to the long-term average, rainfall performance for November of 232mm was lower than the long term average of 252 mm for November although, it was still within the normal range.

1.1.2 Rainfall Station data

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



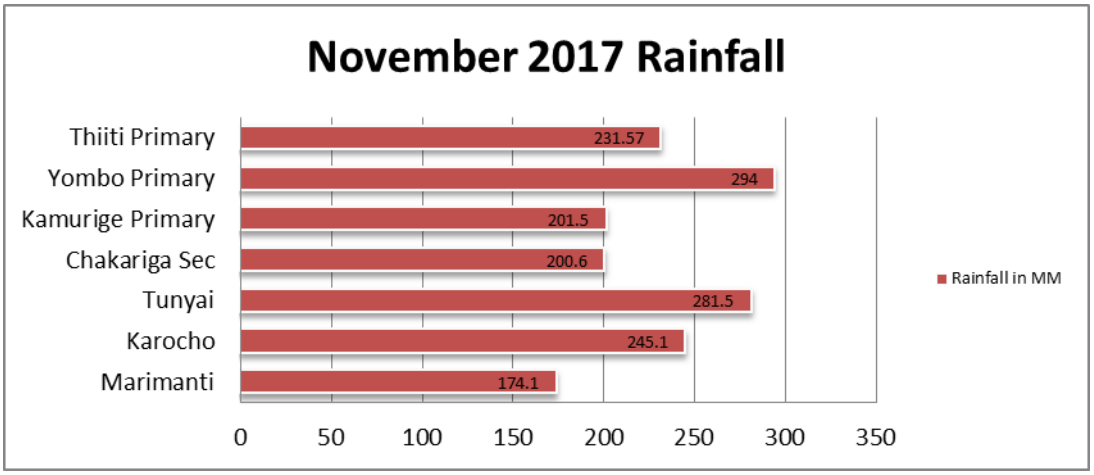
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average (2006-2014)	50	16	72	209	53	0	0	0	0	115	252	133
Average rainfall 2016	25	0	29	250	150	0	0	0	0	0	285	44
Average rainfall 2017	0	0	34	125	146	0	0	0	0	92	232	

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 174.1mm for 15 days, Karocho 245.1 mm for 11 days, Tunyai 281.5 mm for 18 days, Chakariga 200.6mm for 11days, Kamuringe in Kamarandi received 201.5 mm for 11days, Kathanga Chini 294 mm for 10 days while Mukothima received 231.57mm of rainfall for 5 days.
- Rainfall was received for an average of 11 days in 7 stations in the month of November.

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 November was below normal compared to the long term average for the month of November.
- The November VCI for Tharaka was 28.97 compared to the Normal threshold index of 35 for November. This portrayed a moderate vegetation deficit compared to the long term average for November.

The matrix below shows the vegetation condition for the month of November 2017 classified based on VCI thresholds.

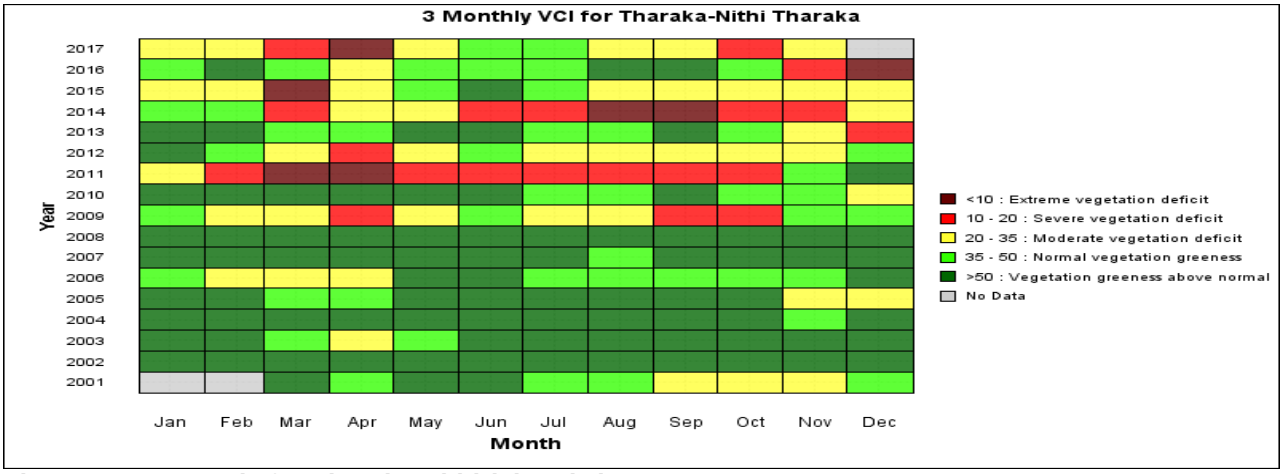


Figure 1 : VCI Matrix for Tharaka Nithi (Tharaka)

The chart below illustrates the VCI trend for Tharaka Nithi from January to November2017.

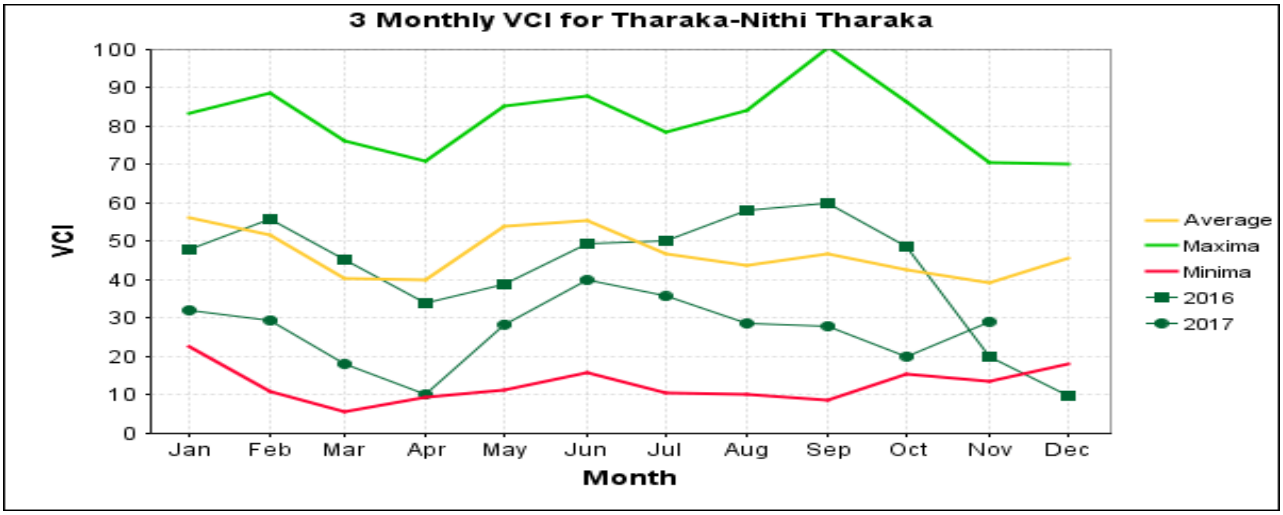


Figure 2: VCI Chart for Tharaka Nithi (Tharaka)

1.2.2 NATURAL VEGETATION AND PASTURE CONDITION

Field Observations (Pasture and Browse Conditions)

Pasture Condition

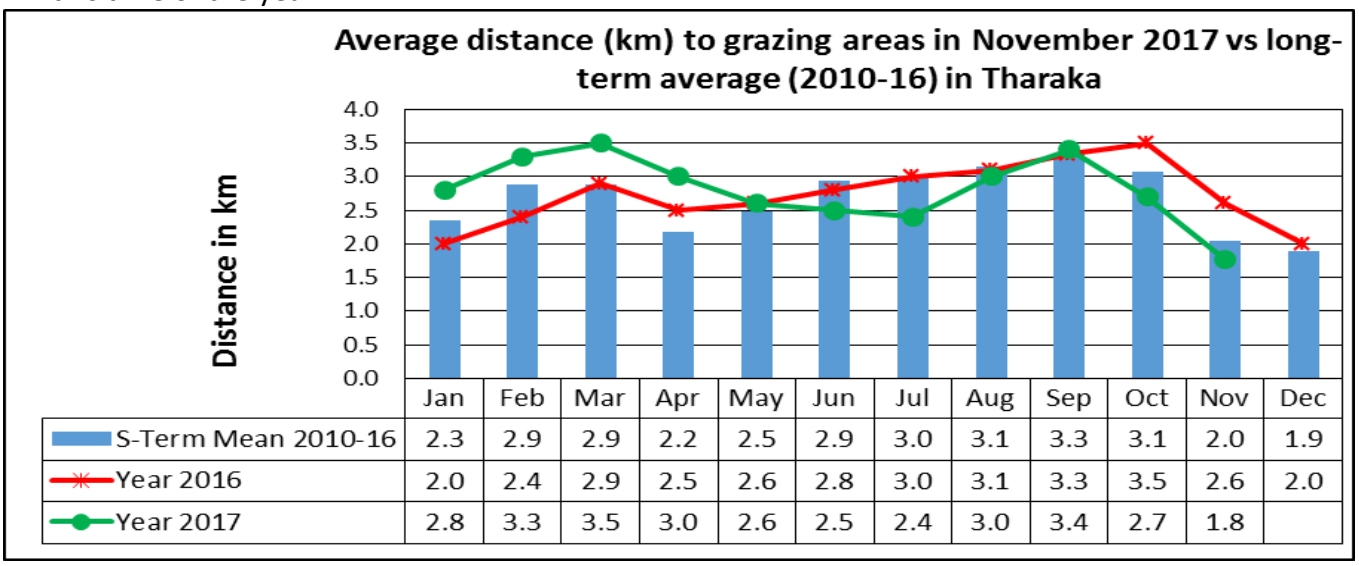
- Pasture condition in terms of quantity and quality was fair in November and it has continued to improve. The pasture condition was below normal compared to the long term average for the month of November but it improved compared to that of the previous month.
- Pasture condition was fair in most grazing fields across all the livelihood zones in the County.
- No migration was noted in the month of November since most grazing fields were having pasture due to regeneration which resulted from the ongoing short rains.

Browse Condition

- Browse condition in terms of quantity and quality was fair and the condition continued to improve due to the ongoing short rains.
- The browse condition was however below normal compared to the long term average.

1.2.3 Distance to Grazing Areas

- The average distance to grazing areas decreased from 2.67Km recorded in October to 1.8 Km in November. This was attributed to regeneration of pasture and browse due to the ongoing rainfall.
- The longest return distance to grazing areas was recorded in the Marginal Mixed Farming at 2.3 Km, Mixed Farming livelihood zones at 2 Km while in Rain fed Cropping it was 1 Km.
- The distance to grazing areas was 10 percent lower than the long term average of 2.0 km for this time of the year.



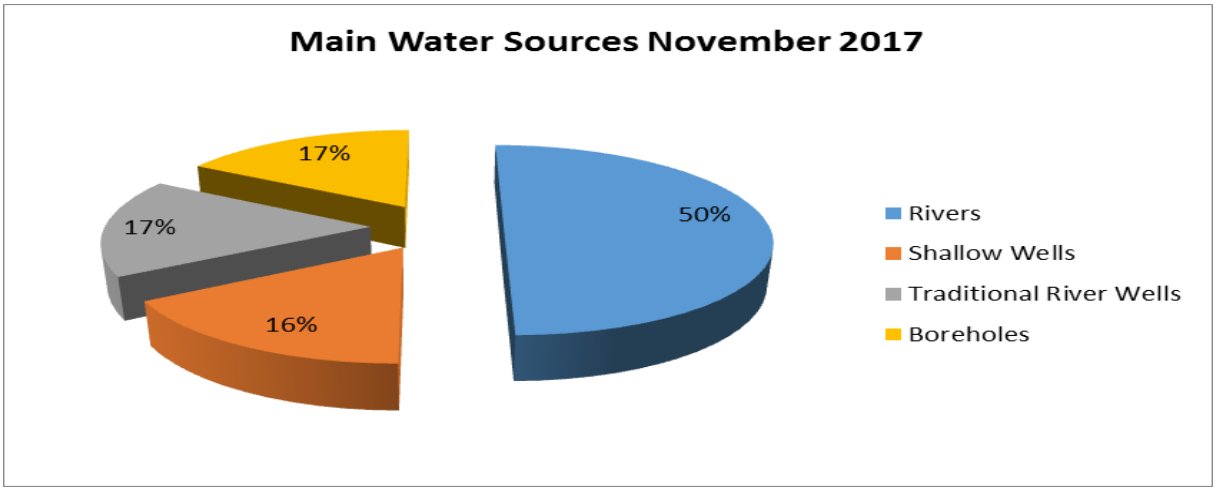
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
S-Term Mean 2010-16	2.3	2.9	2.9	2.2	2.5	2.9	3.0	3.1	3.3	3.1	2.0	1.9
Year 2016	2.0	2.4	2.9	2.5	2.6	2.8	3.0	3.1	3.3	3.5	2.6	2.0
Year 2017	2.8	3.3	3.5	3.0	2.6	2.5	2.4	3.0	3.4	2.7	1.8	

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, Shallow wells, Boreholes and Traditional river wells. Rivers accounted for 50%, Boreholes and Traditional River Wells accounted for 17% each while shallow wells were the least used source at 16%.
- The state of water sources was ranked at index 5 in reference to the scale below implying the water availability was adequate for the month of November. 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 both cattle and shoats was fair across all the livelihood zones. This was attributed to improved state of pasture and browse condition due to the ongoing rains.

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. 12th & 13th 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	

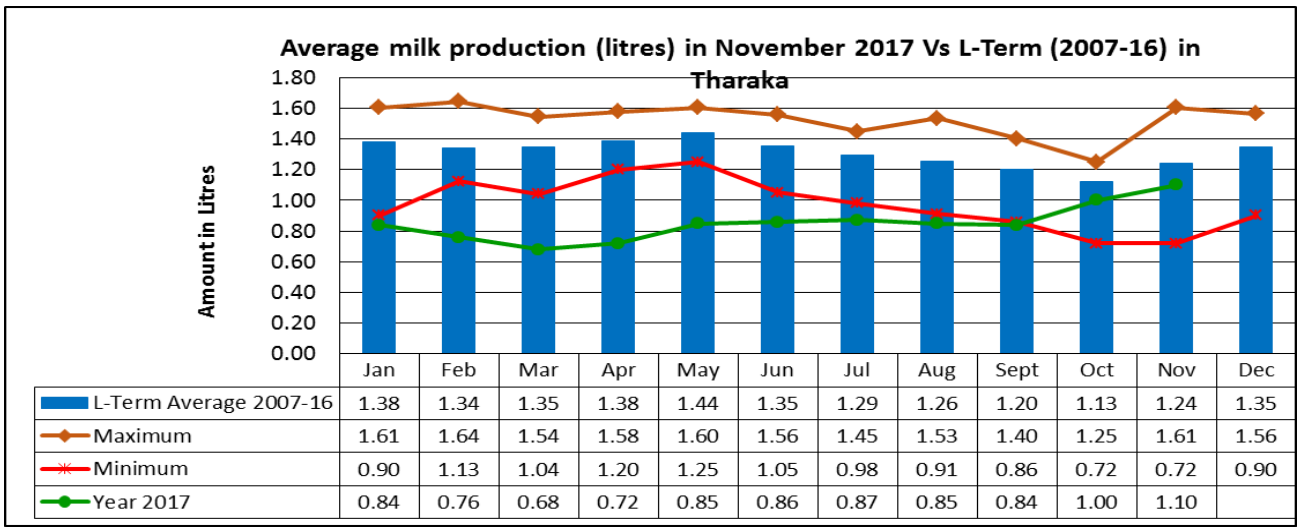
- For most livestock, current body condition can be rated at index 6 as per the threshold scale above

2.1.3 Livestock Diseases and Migration

- No cases of livestock migration were reported in the county. Livestock diseases associated with drought decreased significantly however; there is likelihood of increase in tsetse fly infestation due to increased density of bushland during this period of the year.
- 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 slightly from an average production of 1.0 litre per household in October to 1.10 litre per household in November.
- The highest milk production was recorded in the Marginal Mixed Farming livelihood zone at 1.3 litre while Mixed Farming livelihood and Rain fed livelihood zone had 1.0 litres and 1.0 litre per household each.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
L-Term Average 2007-16	1.38	1.34	1.35	1.38	1.44	1.35	1.29	1.26	1.20	1.13	1.24	1.35
Maximum	1.61	1.64	1.54	1.58	1.60	1.56	1.45	1.53	1.40	1.25	1.61	1.56
Minimum	0.90	1.13	1.04	1.20	1.25	1.05	0.98	0.91	0.86	0.72	0.72	0.90
Year 2017	0.84	0.76	0.68	0.72	0.85	0.86	0.87	0.85	0.84	1.00	1.10	

- Milk production per household was 11.29 percent lower than the 10-year average of 1.24 litre. This was attributed to reduced condition of pasture and browse compared to the long term average in November.

2.2 Crop Production

2.2.1. Timeliness and Status of Crops

- Farming activities for the month under review is mainly weeding and spraying of crops against fall worms. The crop condition is fair and most of the crops are at the knee stage of development while some are at the tasseling stage mainly in the Mixed farming livelihood Zone of : Karocho and Tunyai and in the Rain Fed Cropping Zones of Mukothima.
- Crops planted during the short Rain season were: green grams, sorghum, millet, maize, cowpeas and pigeon peas.

2.2.2. Pests and Diseases

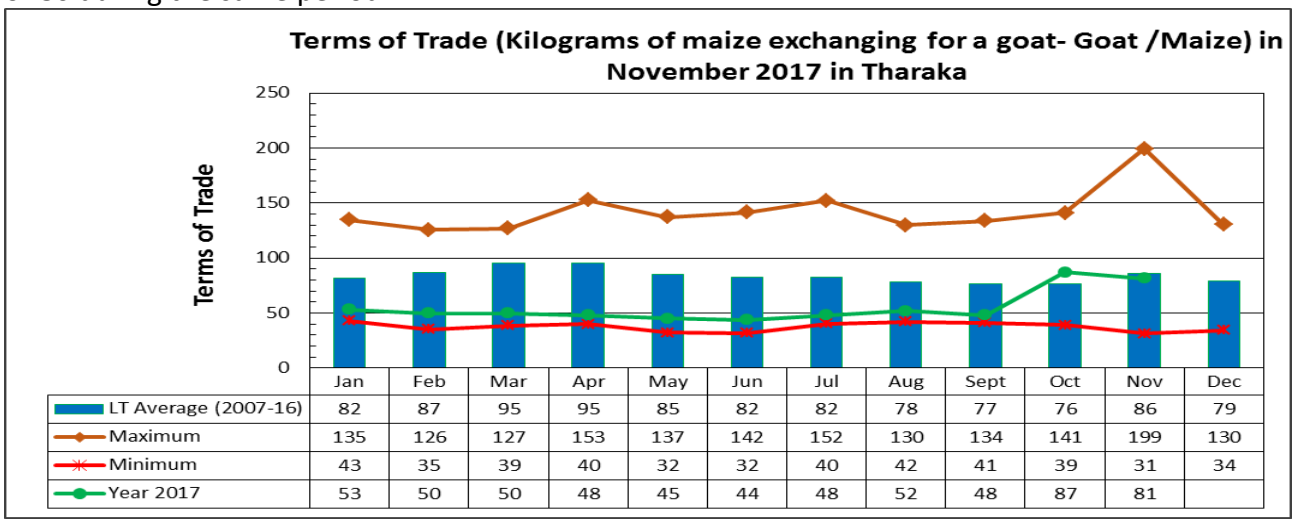
- There were reports of infestation of fall worms in Rain Fed areas of Nkondi and in most parts of the Mixed Farming Livelihood Zones. Most of the crops affected are green grams, Maize, millet and sorghum.
- Despite the good rains received, this pests are a major threat to food security hence need to support farmers with Agro- Chemicals in order to prevent pre- harvest losses.

3.0 ACCESS INDICATORS

3.1 Livestock Prices

3.1.1 Terms of Trade

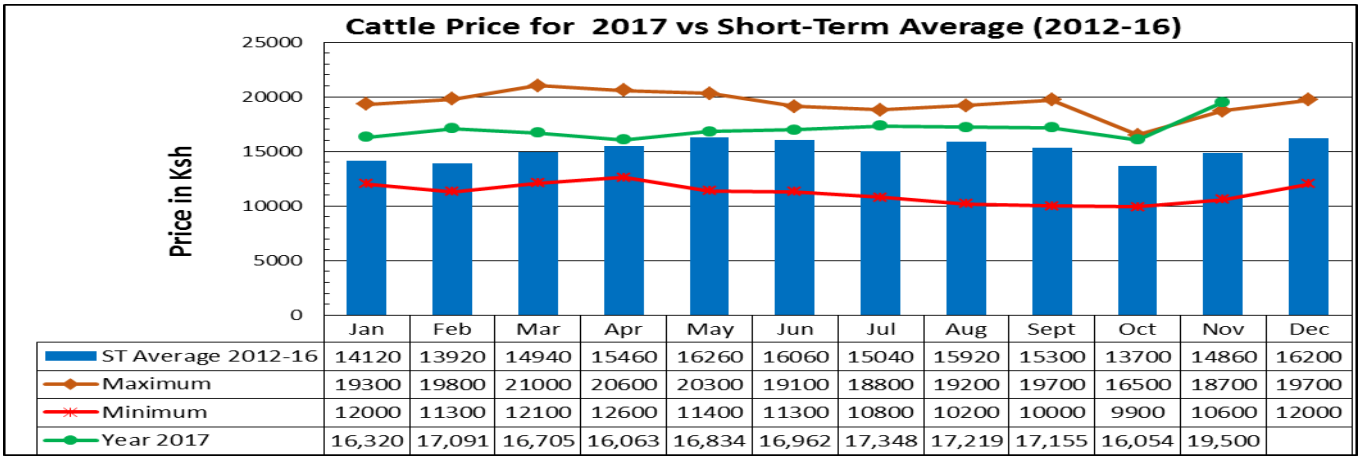
- The Terms of Trade decreased from 87 in the previous month to 81 in November due to a decrease in goat price in relation to an increase in maize price.
- The highest ratio was recorded in the Marginal Mixed Farming zone at 89. 15; Mixed Farming Livelihood at 85.46 while Rain fed cropping Zone had 75.
- The ToT for the period under review was 5.81 percent lower than the long-term average value of 86 during the same period.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
LT Average (2007-16)	82	87	95	95	85	82	82	78	77	76	86	79
Maximum	135	126	127	153	137	142	152	130	134	141	199	130
Minimum	43	35	39	40	32	32	40	42	41	39	31	34
Year 2017	53	50	50	48	45	44	48	52	48	87	81	

3.1.2 Cattle Prices

- The average household cattle price increased from Ksh. 16,054 recorded in the previous month to Ksh. 19,500 in the month of November. Cattle prices increased both at the farm gate and market levels, a factor that was attributed to the improved body condition following the regeneration of pasture across most of the grazing fields in all the livelihood zones.
- The Rain fed Cropping had the highest average price of Ksh 22,000, the Marginal Mixed Farming cattle price was Kshs 15,226.5 while that for the Mixed Farming livelihood zone the price was Ksh 18,658.
- The current price was 31.22 percent higher than the five-year short-term average of Kshs 14,860.



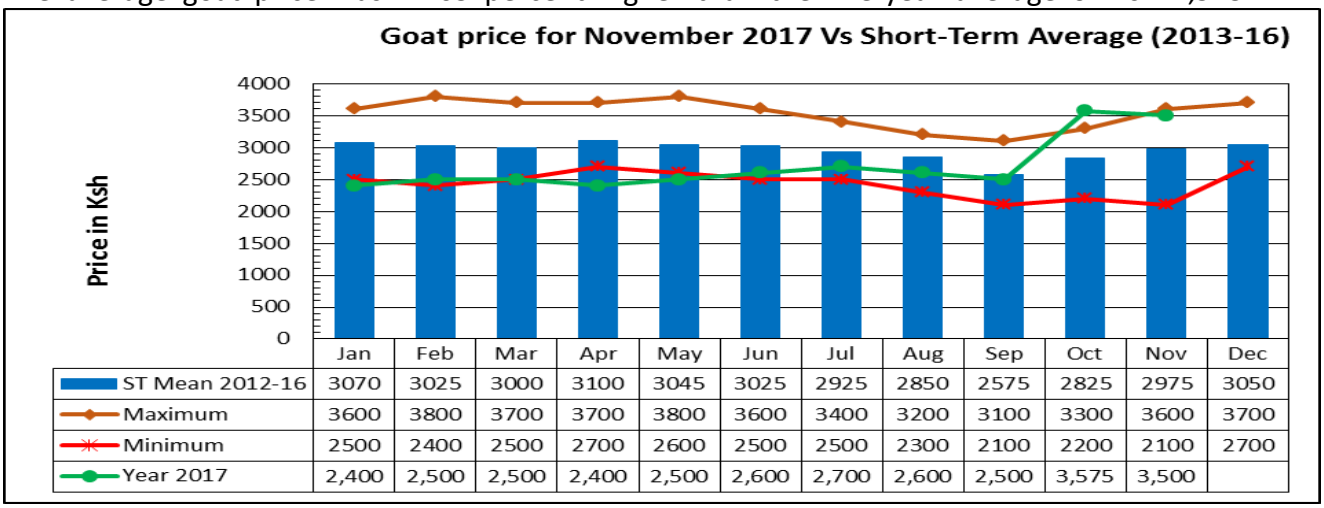
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
ST Average 2012-16	14120	13920	14940	15460	16260	16060	15040	15920	15300	13700	14860	16200
Maximum	19300	19800	21000	20600	20300	19100	18800	19200	19700	16500	18700	19700
Minimum	12000	11300	12100	12600	11400	11300	10800	10200	10000	9900	10600	12000
Year 2017	16,320	17,091	16,705	16,063	16,834	16,962	17,348	17,219	17,155	16,054	19,500	

Goat Prices

- The average goat price decreased slightly from Ksh. 3,575 in October to Ksh. 3,500 in the month of November. The November goat price was however within the normal range and higher than

the long-term average. The decrease in price was negligible and could be attributed normal market dynamics.

- The Marginal Mixed Farming recorded the highest average goat's price of Ksh. 3,833.5; Mixed Farming livelihood zone had the price of Ksh. 3,333 while the Rain fed Cropping livelihood zone goat price was Ksh 3,150.
- The average goat price was 17.65 percent higher than the five-year average of Ksh 2,975.

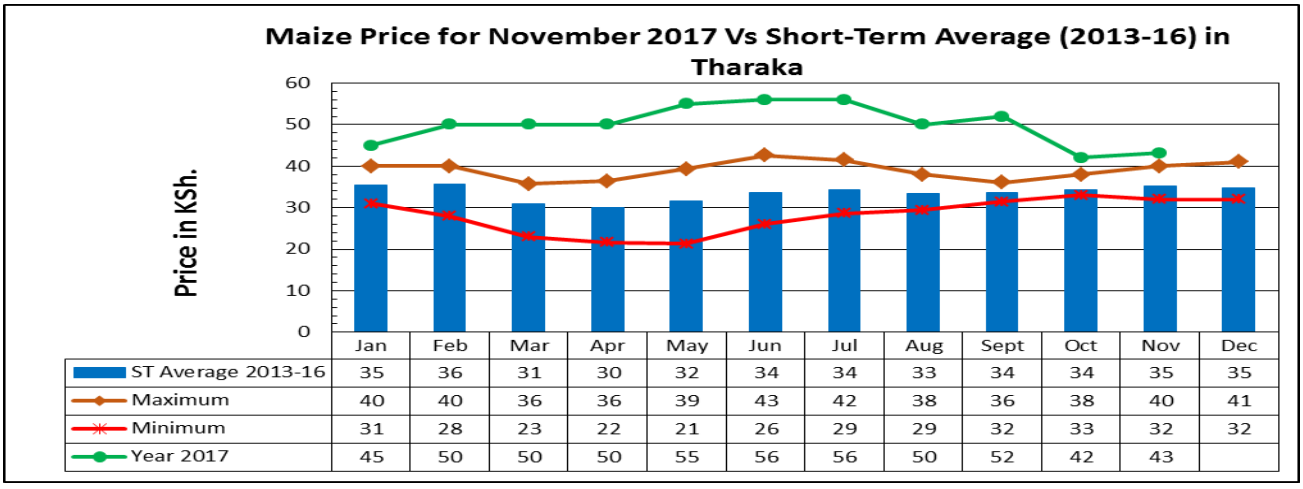


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ST Mean 2012-16	3070	3025	3000	3100	3045	3025	2925	2850	2575	2825	2975	3050
Maximum	3600	3800	3700	3700	3800	3600	3400	3200	3100	3300	3600	3700
Minimum	2500	2400	2500	2700	2600	2500	2500	2300	2100	2200	2100	2700
Year 2017	2,400	2,500	2,500	2,400	2,500	2,600	2,700	2,600	2,500	3,575	3,500	

Price of Cereals and Other Food Products

3.2 Maize Prices

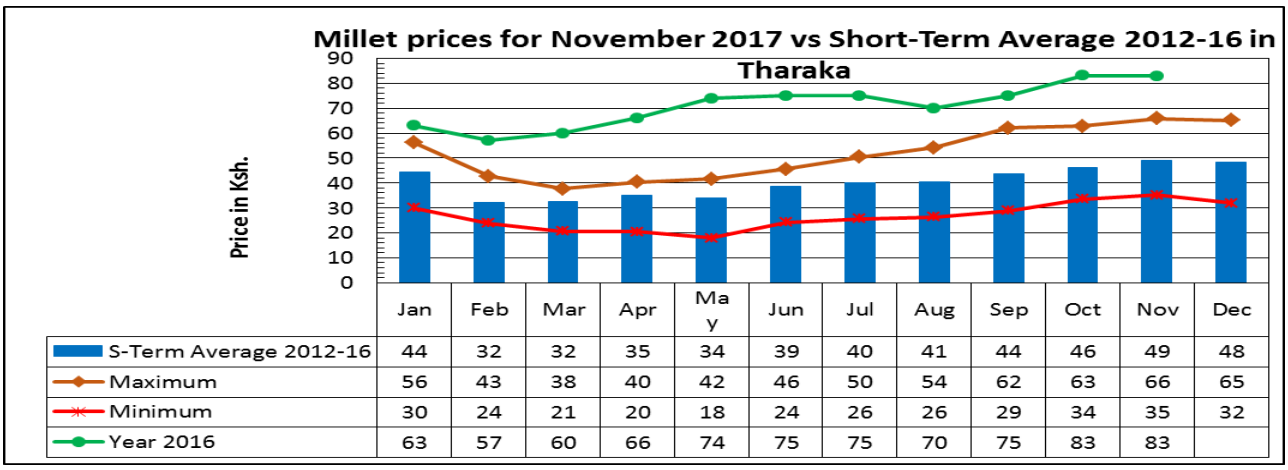
- The average market price of a kilogram of maize increased from Ksh.42 in September to Kshs. 43 per Kg in November**.** This was attributed to decreased supplies of maize from other Counties due to disrupted transport by the ongoing rains in some areas leading to increased market prices.
- The highest maize price was recorded in Marginal Mixed Farming Zone at Kshs 43 per Kilogram, followed by Rain Fed Cropping Zone at Kshs 42 per Kilogram while Mixed Farming Zone recorded the lowest price of Kshs 39 per Kilogram.
- The average maize price was 22.86 percent above the five-year average of Ksh 35.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
ST Average 2013-16	35	36	31	30	32	34	34	33	34	34	35	35
Maximum	40	40	36	36	39	43	42	38	36	38	40	41
Minimum	31	28	23	22	21	26	29	29	32	33	32	32
Year 2017	45	50	50	50	55	56	56	50	52	42	43	

3.3 Millet Price at Market Level

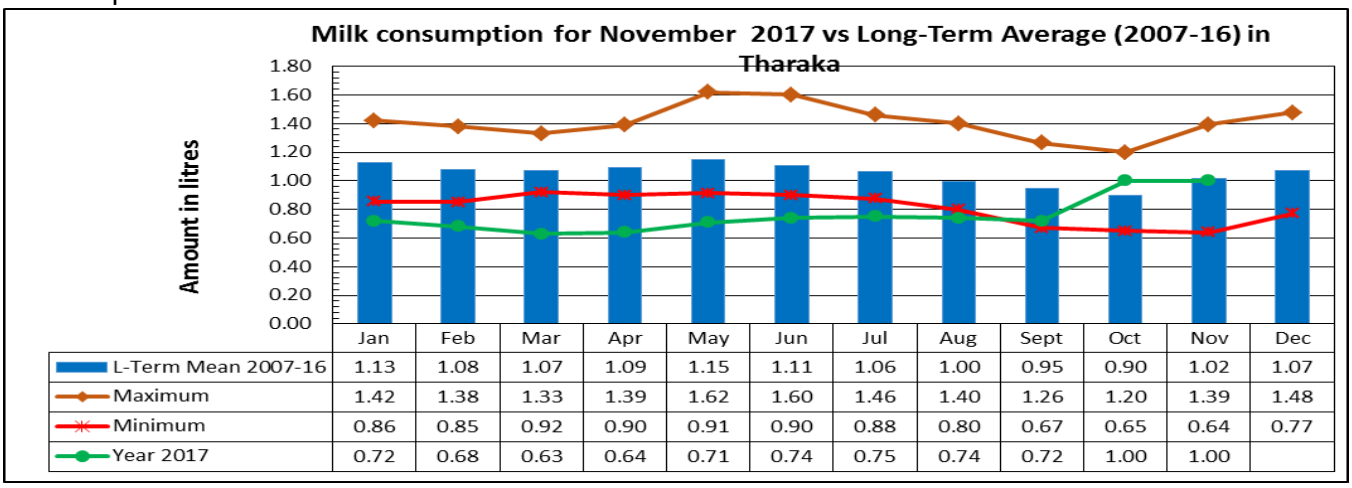
- The average market price of millet remained constant at Kshs. 83 per Kg in November as of the previous month of October.
- The highest market prices were recorded in Marginal Mixed Farming Livelihood Zone at Kshs 87.5/Kg, Followed by Mixed Farming livelihood Zone at Kshs 81/Kg while Rain Fed livelihood Zone recorded the price of Kshs 75/Kg.
- The millet price was 69.39 percent above the short-term average of Kshs.49 per Kg.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
S-Term Average 2012-16	44	32	32	35	34	39	40	41	44	46	49	48
Maximum	56	43	38	40	42	46	50	54	62	63	66	65
Minimum	30	24	21	20	18	24	26	26	29	34	35	32
Year 2016	63	57	60	66	74	75	75	70	75	83	83	

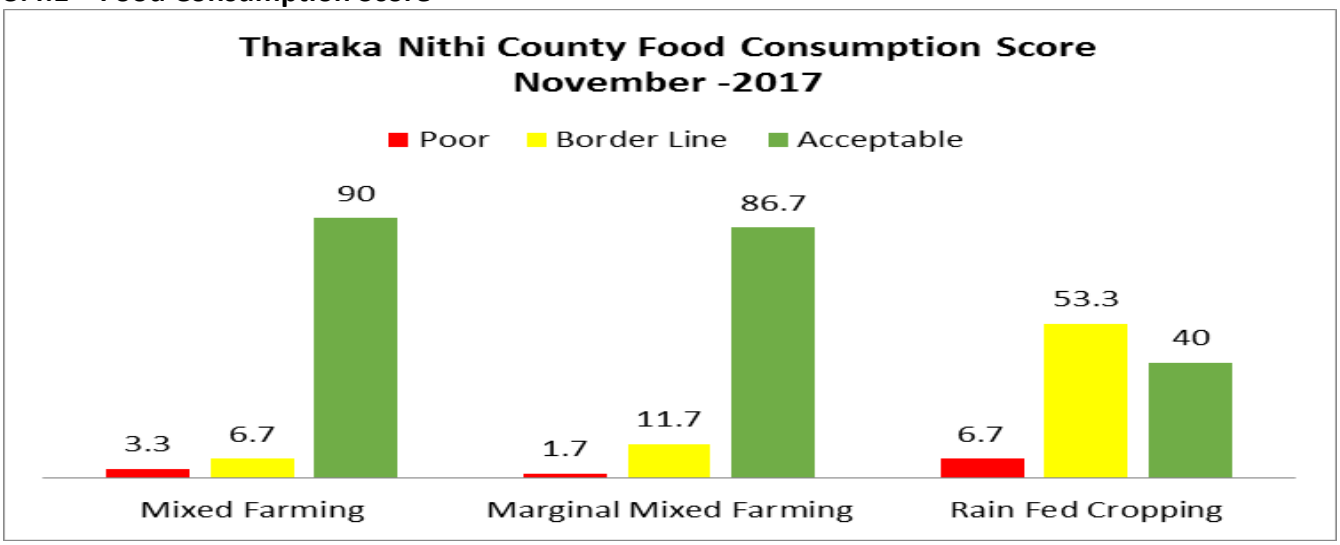
3.4 Milk Consumption

- The average milk consumption per household remained 1.0 litre per household in November as of the previous month of October. 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 1.96 percent lower than the 10-year long-term average of 1.02 litre per household.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
L-Term Mean 2007-16	1.13	1.08	1.07	1.09	1.15	1.11	1.06	1.00	0.95	0.90	1.02	1.07
Maximum	1.42	1.38	1.33	1.39	1.62	1.60	1.46	1.40	1.26	1.20	1.39	1.48
Minimum	0.86	0.85	0.92	0.90	0.91	0.90	0.88	0.80	0.67	0.65	0.64	0.77
Year 2017	0.72	0.68	0.63	0.64	0.71	0.74	0.75	0.74	0.72	1.00	1.00	

3.4.1 Food Consumption Score



- An average of about 27.8 percent of the households were food insecure with poor and borderline food consumption scores, attributed to low stock and low purchasing power at

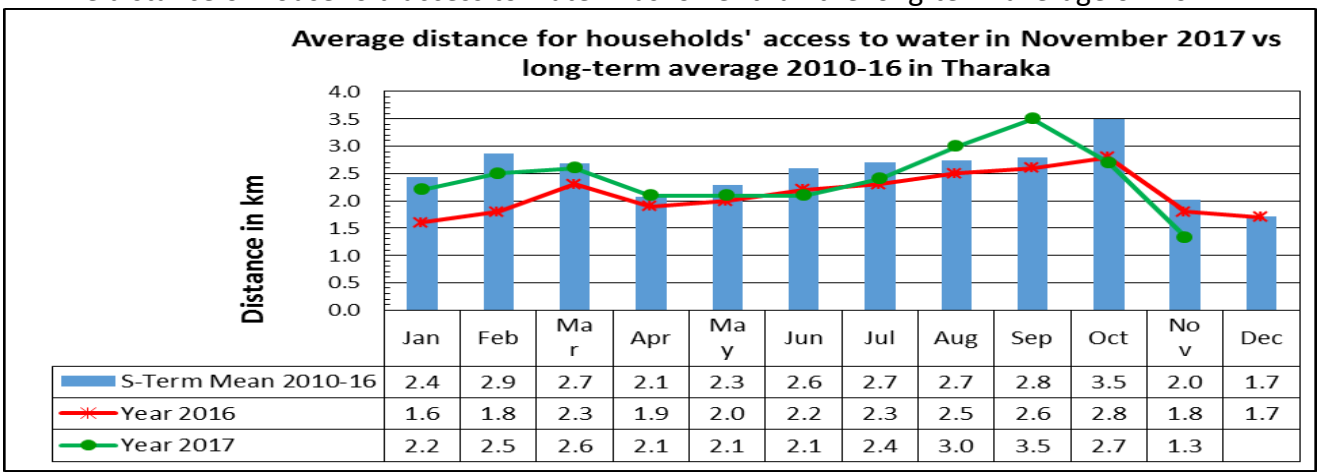
house hold levels resulting to a decline in food access during the month of November. The majority of Food Stressed Households were in the Rain Fed and Mixed Farming Livelihood Zones.

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
November	72.23	23.9	3.9

- 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

- Average Household water distance decreased from 2.7km in October to 1.3 Km in the month of November. The decrease in water distance was due to the ongoing rainfall 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 2 Km, Mixed Farming livelihood zone 1.6 Km while Rain Fed Cropping zone 0.4Km.
- The distance of household access to water was lower than the long-term average of 2.0 Km.



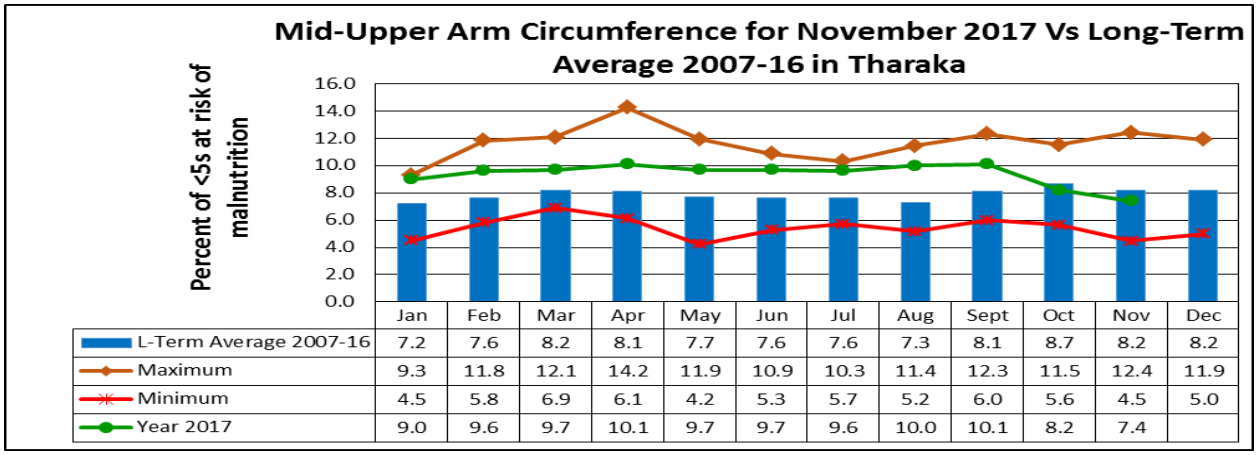
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
S-Term Mean 2010-16	2.4	2.9	2.7	2.1	2.3	2.6	2.7	2.7	2.8	3.5	2.0	1.7
Year 2016	1.6	1.8	2.3	1.9	2.0	2.2	2.3	2.5	2.6	2.8	1.8	1.7
Year 2017	2.2	2.5	2.6	2.1	2.1	2.1	2.4	3.0	3.5	2.7	1.3	

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 decreased from 8.2 percent in October to 7.4 percent in November. This decrease in MUAC percentage is attributed to improvement in Food security of house hold compared to the previous month of October.
- The highest proportion of children at risk of malnutrition was recorded in the Marginal Mixed Farming and Mixed Farming livelihood zones.
- The proportion of children at risk of malnutrition whose MUAC percentage measurement was below 135mm was below the long-term average of 8.2percent.

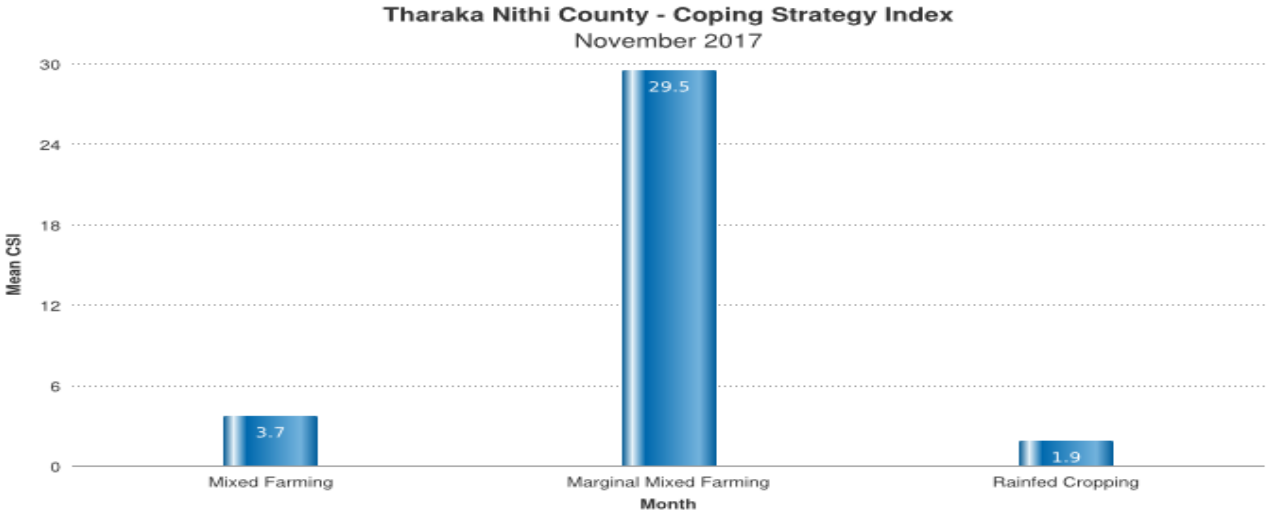


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
L-Term Average 2007-16	7.2	7.6	8.2	8.1	7.7	7.6	7.6	7.3	8.1	8.7	8.2	8.2
Maximum	9.3	11.8	12.1	14.2	11.9	10.9	10.3	11.4	12.3	11.5	12.4	11.9
Minimum	4.5	5.8	6.9	6.1	4.2	5.3	5.7	5.2	6.0	5.6	4.5	5.0
Year 2017	9.0	9.6	9.7	10.1	9.7	9.7	9.6	10.0	10.1	8.2	7.4	

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 12.63 in October to 11.7 in November which indicated a slight reduction in household stress due to lack of food or money to buy food during the month of November.
- The highest CSI was recorded in the Marginal Mixed Farming zone at 29.5, followed by Mixed Farming Livelihood Zone at 3.7 while Rain Fed Cropping had the lowest CSI of 1.9.
- The most commonly employed coping strategy mechanisms during the month of November included: - Reliance on less preferred and or less expensive food, reduction of the number of meals and reduction in portion or size of meals.
- Some households were employed 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

- Onset of rainfall was on the second week of October, since then, rainfall has been consistent to the Last week of November. The temporal and spatial distribution of the rains in November was good across most of the livelihood Zones.
- Most cereal crops were at the knee stage of development while pulses were at the flowering stage of development and their condition was good.

- Some cereal crops which were planted early in Mixed and Rain Fed Cropping Livelihood Zones of Karocho, Tunyai, parts of Mukothima were at the tussling stage, however, these were just a few numbers of farms.
- Recharge of ground water especially permanent rivers was up to 80% of normal level which was fair while that of the underground water was at 70%, water recharge is expected to improve if the short rains persist leading to reduced distance of both household and Livestock watering distance.
- Browse and pasture had regenerated and was expected to improve further resulting to shorter grazing distance, improved milk production; improved livestock body condition and better Livestock prices.
- Internal livestock Migration reduced along the park due to pasture and browse regeneration resulting to reduced competition for pasture. However livestock theft was reported in Kathanga chini which resulted to tension in the area but the situation was expected to improve if the recommended peace-based interventions which promote peaceful coexistence are implemented.
- Levels of Global Acute Malnutrition are expected to reduce across most of the livelihood Zones due to improvement in household food security.
- The short rains is expected to perform well resulting to higher yield and good harvest which will in turn lead to 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 in January and February 2018 if the short rains perform well.
- Terms of Trade was still favourable to Livestock farmers compared to crop farmers due to higher livestock prices compared to the long term average although goats prices reduced slightly in November from that of October 2017.
- 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

- Resource based conflicts have reduced significantly during the month of November. This was due to the consistent rainfall which has led to regeneration of pasture and browse reducing pressure and competition on the grazing fields.

- There have been reported cases of Livestock theft in Kiamiramba in Kathangachini location by bandits where by 5 cattle, 45 goats and 6 donkeys were stolen. The bandits are believed to be from Mbalambala in Garrissa and Kina from Isiolo.

- Theft and small crimes have also decreased due to increase in casual labour related to Agriculture as spraying and weeding of farms.

7.0 CURRENT INTERVENTIONS AND RECOMMENDATIONS

7.1 Non-Food Interventions

- Establishment of 5 farm ponds by NDMA to promote small scale irrigation subsistence Farming through the Food For Asset Project in Kanjoro,Thwathanju, Kamariro and Ntuge.
- Distribution of 300Kg of livestock grass seeds by NDMA through the Food For Asset Project to 20 farm groups.
- Capacity Building of farmers on rain water harvesting structures and construction of terraces and soil bans by NDMA through the Food for Asset Project.
- 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 both 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.

- Eighty bags of livestock range cubes (pellets) were provided by the ministry of livestock in October and are at Marimanti livestock department buildings still awaiting distribution.

7.2 Recommendations

- Facilitate distribution of Livestock Range Cube (pellets) by provision of fuel and facilitation of livestock Officers by NDMA during this drought alert period.
- 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.
- Promote water harvesting by provision of Water storage tanks to vulnerable communities and local institutions and schools.
- 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.
- Provision of water treatment chemicals at household level and at piped water reservoirs to minimise the risk of water related diseases.
- Peace Meeting and sensitisation on conflict resolution methods and common resource use in order to minimise resource based conflicts and livestock theft.