National Drought Management Authority
THARAKA NITHI COUNTY
DROUGHT EARLY WARNING BULLETIN FOR JANUARY 2016

January 2016 EW Phase

Drought Situation & EW Phase Classification

Biophysical Indicators

- The month of January was characterized by intermittent off season rainfall limited to falls of 20 - 40 mm in the first dekad followed by a dry spell in the second and third dekad.
- The Vegetation Condition Index (VCI) was 48 illustrating Very positive trend with Tharaka north and Tharaka south sub-counties within normal ranges for the period.
- The state of water sources was good in the period under review as attributed to adequate recharge of water sources.

Socio Economic Indicators (Impact Indicators)

- The received rainfall promoted pasture regeneration that resulted into improving livestock body condition to good which is Normal at this time
- Milk Production and consumption per livelihood zone improved significantly to averages of 35 litres and 30 litres respectively in the period under review compared 28 litres and an average consumption of 23 litres recorded in December.
- Terms of Trade (ToT) ratio were at 109 in comparison to an average of 115 in the month of December implying ToT was favourable to the livestock keepers.
- Percentage of children at risk of malnourishment whose MUAC was below 135mm was 6.7 for the period under review which was below the average of 7.2.

Early Warning Phase Classification

Livelihood Zone	EW PHASE	TRENDS
Mixed Farming	Normal	Improving
Marginal Mixed Farming	Normal	Stable
Rainfed cropping	Normal	Stable
County	Normal	Stable
Biophysical Indicators	**Value**	**Normal Range/Value**
VCI-3month (Tharaka)	48	>35
Water Sources	Good	Good
Production indicators	**Value**	**Normal**
Livestock Migration Pattern	No migration	No migration
Livestock Body Conditions	Good	Good
Milk Production	35	>43
Livestock deaths (for drought)	No death	No death
Access Indicators	**Value**	**Normal**
Terms of Trade	109	>78
Milk Consumption	30	>33
Water for Households	Good	Good
Utilization indicators	**Value**	**Range/Value**
MUAC	6.7	<7.2
Coping Strategy Index (CSI)	0.47	0.72
Food Consumption	71 Percent	Borderline

▪ 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 ▪ Increased HH Food Stocks ▪ Kidding (Sept)	▪ Short rains ▪ Planting/weeding

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

BIOPHYSICAL INDICATORS

1.0 MEASURING DROUGHT HAZARD

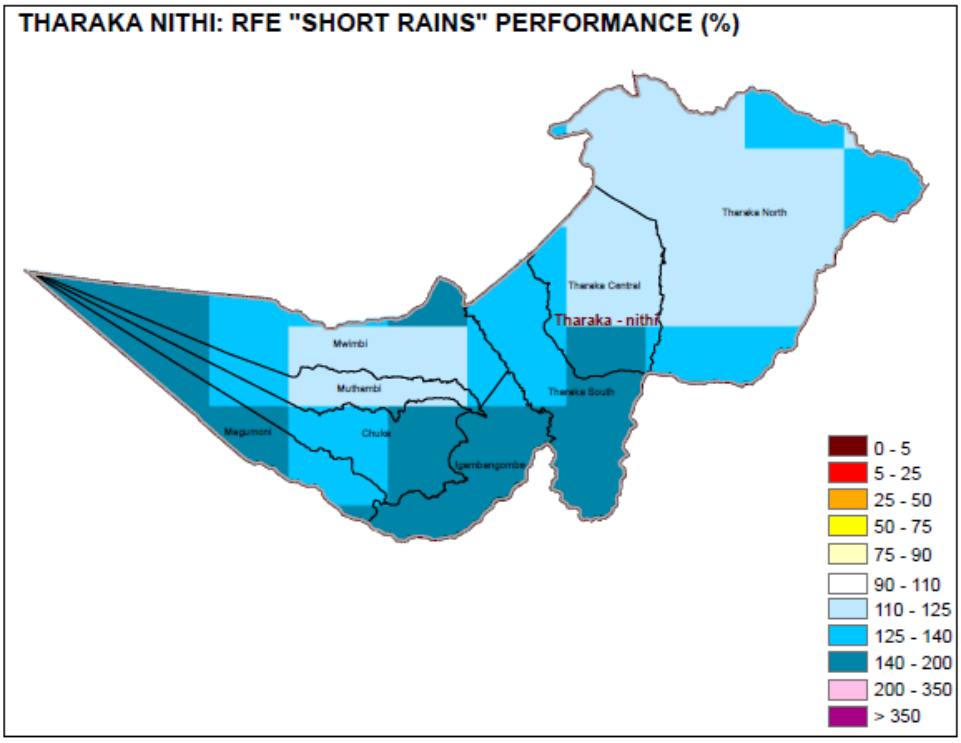
1.1 METEOROLOGICAL DROUGHT

1.1.1 Actual Rainfall

- The onset of rains was in the third week of October with the date's varying from 17th to 19th of October, 2015 which was timely.
- The month of January was characterized by intermittent off season rainfall limited to falls of 20 - 40 mm in the first dekad followed by a dry spell in the second and third dekad.
- The recorded amount of rainfall received was 25 mm for an average of 1 rainy day from 5 recording stations.
- The cessation of the October, November and December rains was recorded on varying dates from 19th to 28th of December, 2015

1.1.2 Spatial distribution

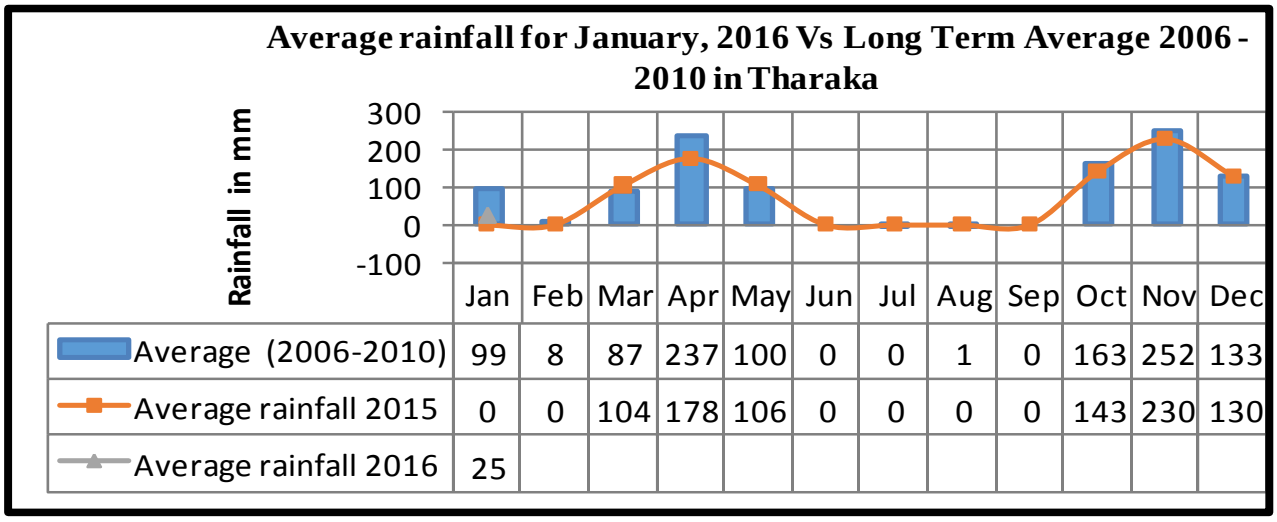
- The spatial distribution of rains across the county was uneven for the month of January.
- The spatial distribution for the October, November and December rains can be summarized as below pictorial presentation indicating most of the areas received 110 -140 percent of normal rains.



1.1.3 Temporal distribution

- Temporal distribution was poor for the period under review.

1.1.4 Rainfall station data

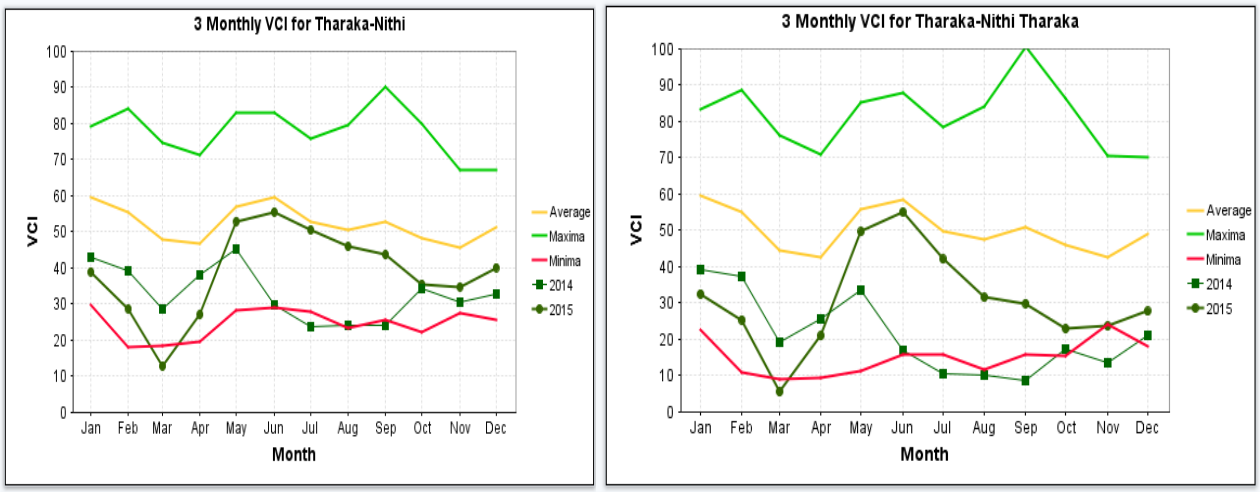


1.2 AGRICULTURAL DROUGHT

1.2.1 Vegetation Condition Index (VCI)

- The matrix below illustrates the period from November, 2015 to January 2016 as classified in terms of agricultural drought based on VCI thresholds. The matrix shows a retrospective analysis of the drought vegetation condition and related drought category.
- January 2016 indicates VCI at minimal conditions in Tharaka sub-county at thresholds of 48 and with an improving trend attributed to short rains of 2015.

The county's vegetation condition improved as signified by increase in the January 3-month VCI index of 48 from 28 in December 2015. The improved vegetation condition is attributed to October, November and December (OND) rains.



- Below are thresholds for VCI 3 – month and related drought categories

Color	VCI values	Drought Category
	3-monthly average	
	≥50	Vegetation greenness above normal
	35 to 50	Normal vegetation greenness
	21 to 34	Moderate vegetation deficit
	10 to 20	Severe vegetation deficit
	<10	Extreme vegetation deficit

1.2.2 NATURAL VEGETATION AND PASTURE CONDITION

Field Observations (Pasture and Browse Conditions)

Quality

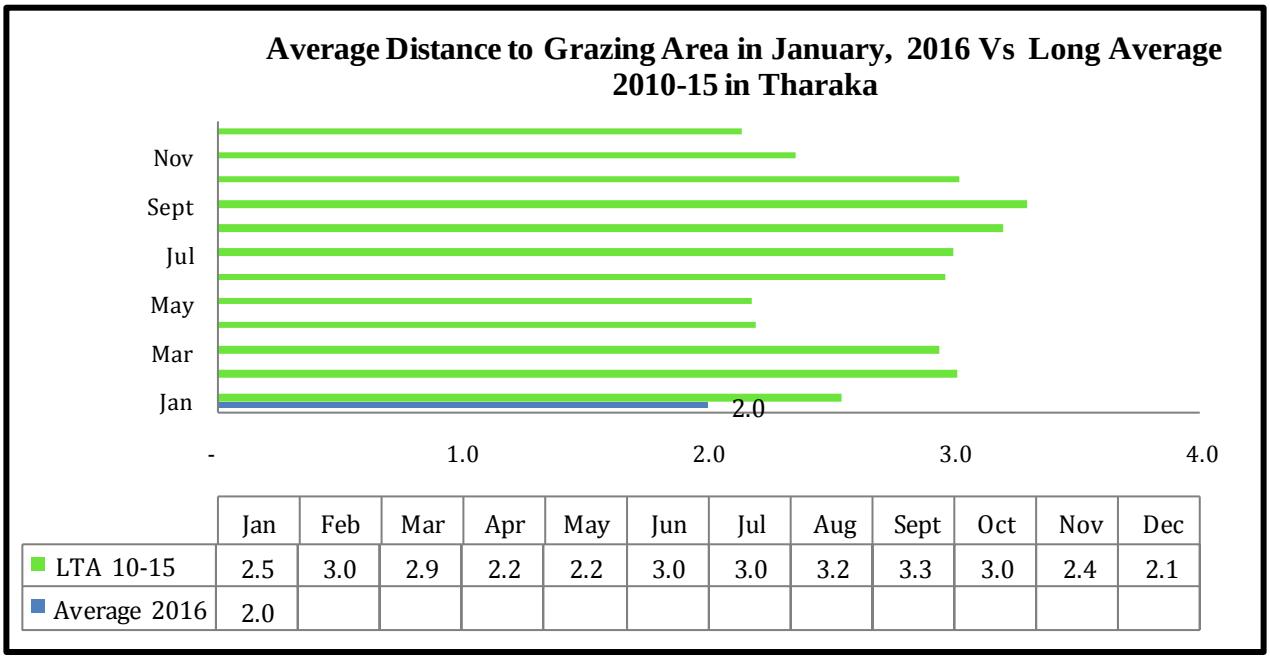
- Pasture and browse regeneration was good attributed to October, November and December (OND) Short rains. This is normal at this time of the year.

Quantity

- Most areas registered an increase in *Vegetation Density* based on the Normalized Difference Vegetation Index (NDVI) received in dekad 1, 2 and 3 of January 2016. The density was above normal.
- The amount of browse and pasture regeneration for the month of January 2016 was good with a significant change in quantity compared to the month of December 2015. In comparison to the normal year, the available browse and pasture amount was above normal.
- The availability of crop residue mainly in Mixed farming livelihood and marginal mixed livelihood areas supplemented livestock feed.

1.2.3 Distance to Grazing Areas

- The average distances to grazing areas increased slightly from 1.8km to 2.0km in the period under review, attributed to onset of the short dry spell period.
- The longest return distance to grazing areas was recorded in the Marginal Mixed Farming at 3.0 km compared to 1 km in the Mixed Farming livelihood zone and 1.9 km in the Rain fed cropping.
- The average grazing distance was slightly below the long-term five-year average of 2.5 km for this time of the year.



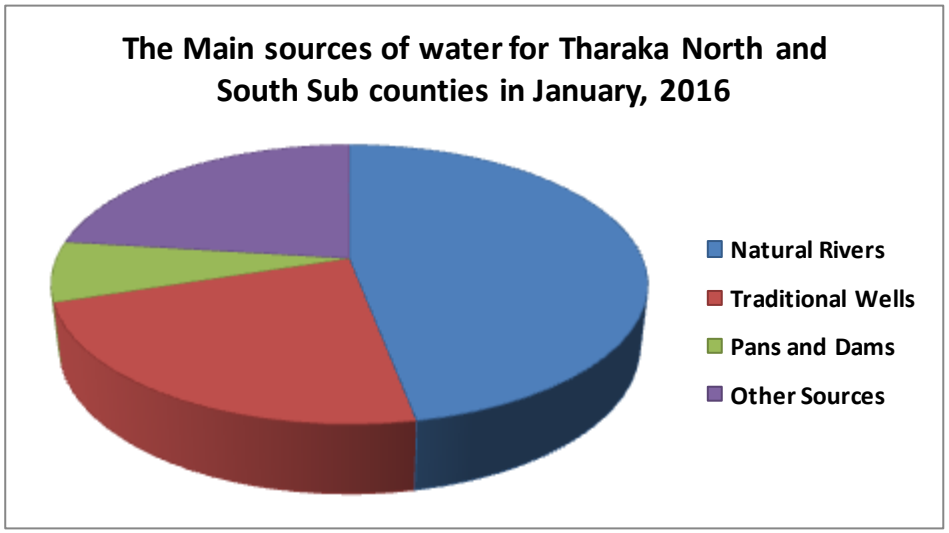
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
LTA 10-15	2.5	3.0	2.9	2.2	2.2	3.0	3.0	3.2	3.3	3.0	2.4	2.1
Average 2016	2.0											

HYDROLOGICAL DROUGHT

1.3 Water sources and availability

1.3.1 Main sources of water

- The major source of water for livestock and domestic use in Tharaka North and South Sub-counties were natural rivers, Pipelines, boreholes and traditional river wells, sources that are normal for this time of the year.



- According to ground data the state of water sources was ranked at 5 in coverage for approximately 90 percent of the county in reference to the scale below.
- The OND rains impacted positively on the availability of water.

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

2.1.1 Livestock Migration Patterns

- No migration was reported in the period under review.

2.1.2 Livestock Body Condition

- The body condition of most livestock was fair to good attributed to the regenerated pasture and browse following the OND rains coupled with availability and access of watering sources.
- The current livestock 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/Alar
Borderline fore-ribs not visible. 12th &13th ribs visib	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 and in fat	9	

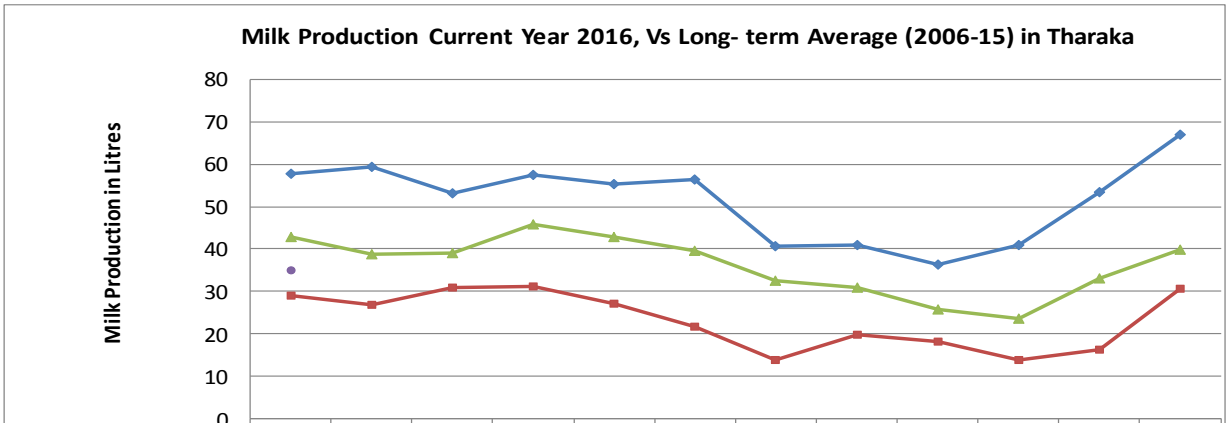
2.1.3 Livestock Diseases

- The main endemic diseases in Tharaka South and Tharaka North sub counties were Contagious Caprine Pleuropneumonia (CCPP), Trypanosomiasis and Heart Water disease which are commonly found in Marginal Mixed farming zones affecting mostly Cattle and Goats. Other common diseases include Helminthiasis, Pneumonia and Anaplasmosis. In Poultry, the common diseases were new castle disease (NCD), Fowl Typhoid and Infectious bronchitis this was similar to what was recorded in the month of December.
- Spot cases of Lumpy Skin Disease was reported in Tharaka South sub county

2.1.4 Milk Production

- Milk production per livelihood zone increased from 28 litres in December to 35 litres in the month of January indicating a 25 percent increment.
- The highest milk production was recorded in the Marginal Mixed Farming livelihood zone at 59 litres while Mixed Farming livelihood zone had 18 litres and Rainfed livelihood zone recorded 27 litres.

- Increase in milk production was attributed to availability of pasture and browse after the OND (October, November and December) rains coupled with availability of crop residue



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	oct	Nov	Dec
MAX	58	59	53	58	55	56	41	41	36	41	53	67
MIN	29	27	31	31	27	22	14	20	18	14	16	31
MEAN(2006-2015)	43	39	39	46	43	40	32	31	26	23	33	40
2016	35											

which supplemented livestock feeds and favourable distance to water sources, factors that impact positively on livestock productivity.Milk production was below the long-term five-year average of 43 litres but within the seasonal range.

2.2 Crop productions

2.2.1. Timeliness and status of crops

- The performance of Legume crops was good to fair in localised areas of Nkondi, Turima, Nkarini, Tunyai and parts of Marimanti locations.
- About 90 percent of pulses such as green grams and cowpeas were harvested during the month under review.
- Cereals such as millet and sorghums were at grain drying stage and approximately 40 percent have been harvested.

2.2.2. Pests and diseases

- Current crop pests include caterpillars, chaffer grabs in Sorghum and millet, sucking bugs in pigeon peas, beetles in cowpeas and green grams. Necessitating increased household costs on purchase of control chemicals.

2.2.3. Crop harvest

- Legumes (green grams and cowpeas) and approximately 40 percent of cereals were harvested during the month under review.

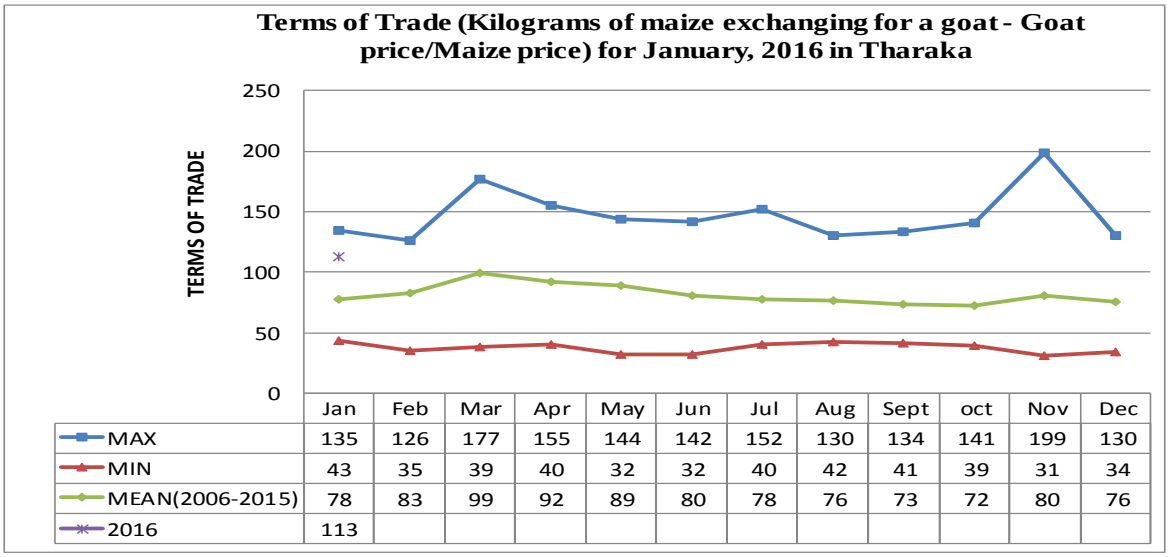
3.0 ACCESS INDICATORS

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 slightly from 115 to 112 during the month under review.

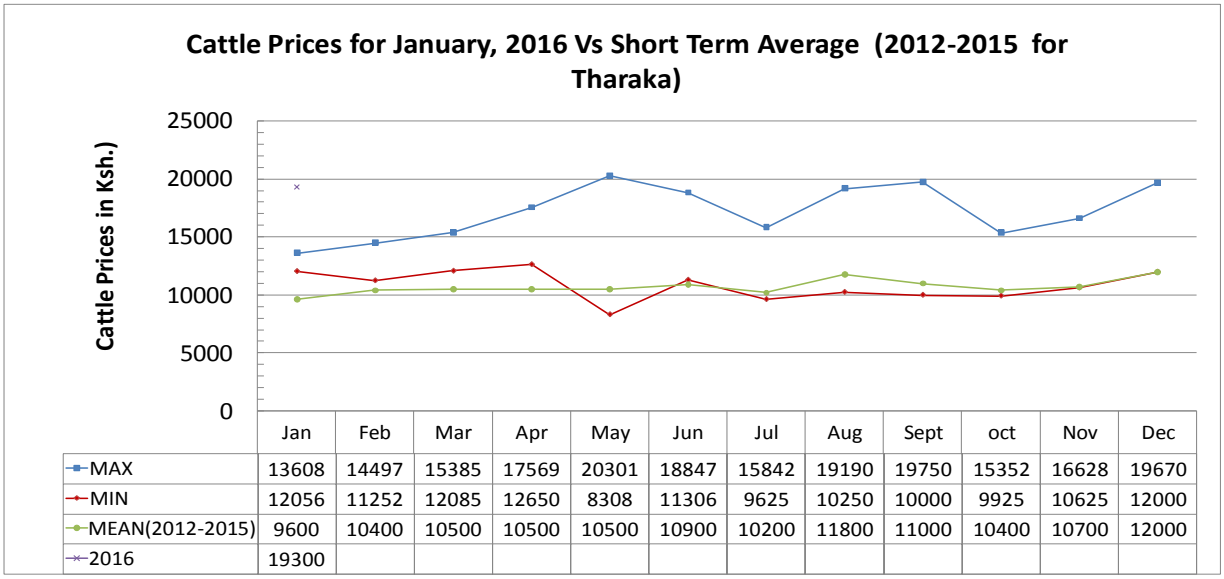
- The least ratio was recorded in the Rainfed cropping livelihood zone at 106 while the Mixed farming zone had a ToT rate of 110. Marginal Mixed farming livelihood recorded the highest ToT of 115.
- The Terms of Trade were above the long-term average of 78.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	oct	Nov	Dec
MAX	135	126	177	155	144	142	152	130	134	141	199	130
MIN	43	35	39	40	32	32	40	42	41	39	31	34
MEAN(2006-2015)	78	83	99	92	89	80	78	76	73	72	80	76
2016	113											

3.1.2 Cattle Prices

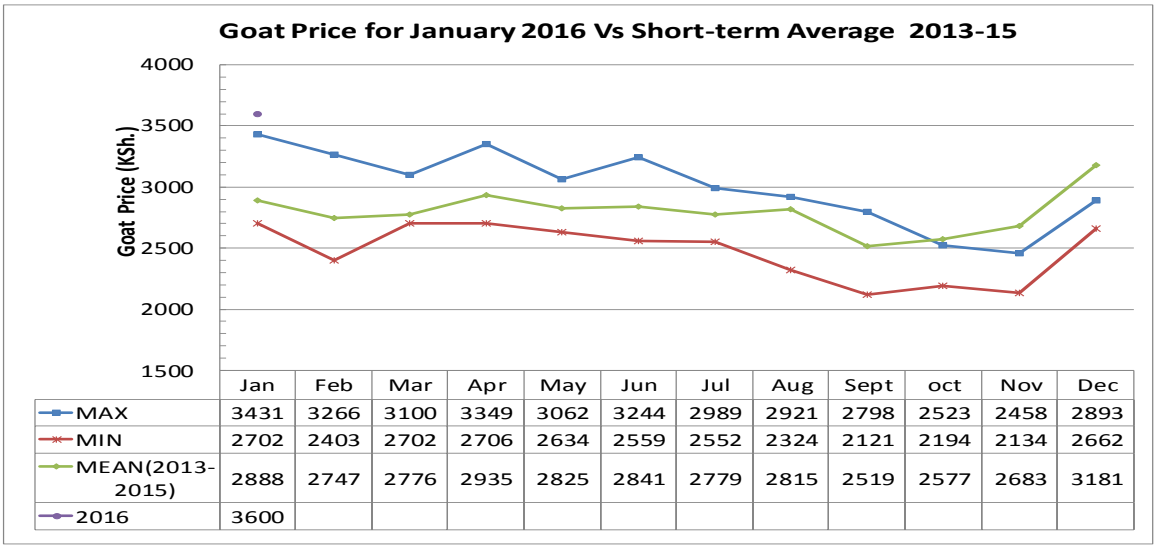
- The average household prices for cattle slightly increased from Ksh 18,900.00 in the month of December to Ksh 19,300.00 in January.
- The Marginal Mixed Farming livelihood zone had the highest average price of Ksh.19, 600.00 while the rain fed cropping and the Mixed farming livelihood zones recorded average price of Ksh. 19,000 and Ksh.15, 000.00 respectively.
- The period under review average price was higher than the long-term average of Ksh9, 600.00.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	oct	Nov	Dec
MAX	13608	14497	15385	17569	20301	18847	15842	19190	19750	15352	16628	19670
MIN	12056	11252	12085	12650	8308	11306	9625	10250	10000	9925	10625	12000
MEAN(2012-2015)	9600	10400	10500	10500	10500	10900	10200	11800	11000	10400	10700	12000
2016	19300											

3.1.3 Goat Prices

- Household goat prices dropped slightly to stand at Ksh 3,600.00 for the month of January from Ksh 3,700.00 recorded in the previous month, signifying a stable trend.
- The Marginal Mixed farming livelihood zone reported the highest price at Ksh 3,800.00. Rain fed and Mixed farming livelihood zones recorded an average price of Ksh.3, 600.00 and Ksh 3,300.00 respectively**.**

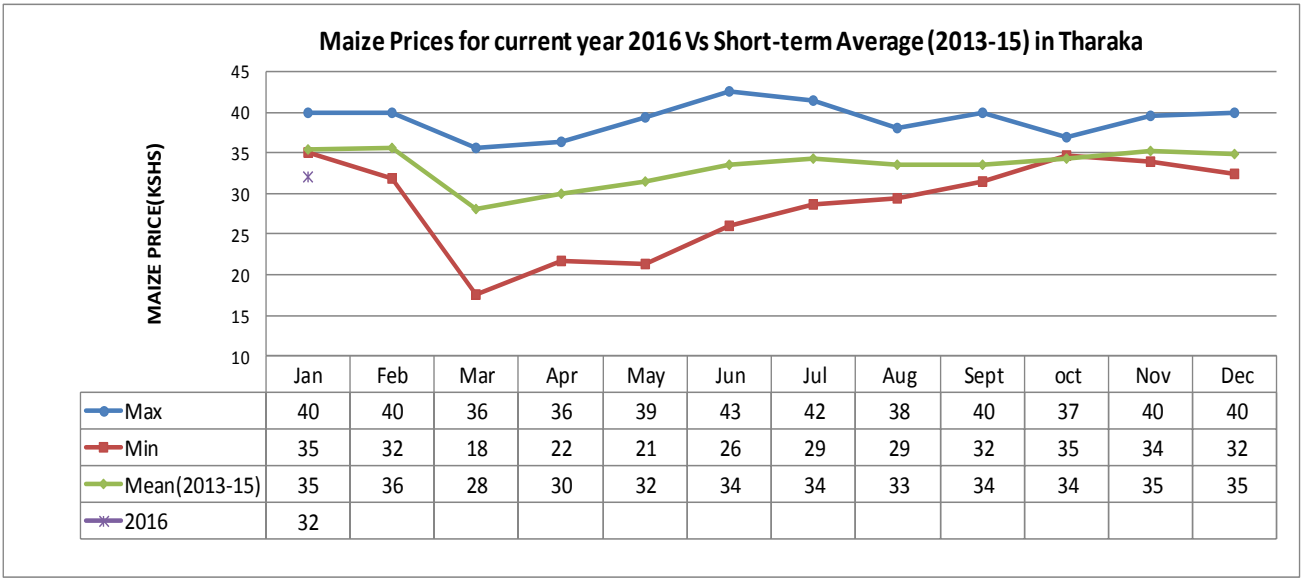


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	oct	Nov	Dec
MAX	3431	3266	3100	3349	3062	3244	2989	2921	2798	2523	2458	2893
MIN	2702	2403	2702	2706	2634	2559	2552	2324	2121	2194	2134	2662
MEAN(2013-2015)	2888	2747	2776	2935	2825	2841	2779	2815	2519	2577	2683	3181
2016	3600											

- The average goat price was considerably above the long-term five-year average Ksh 2,900.00.

3.2 Price of cereals and other food products

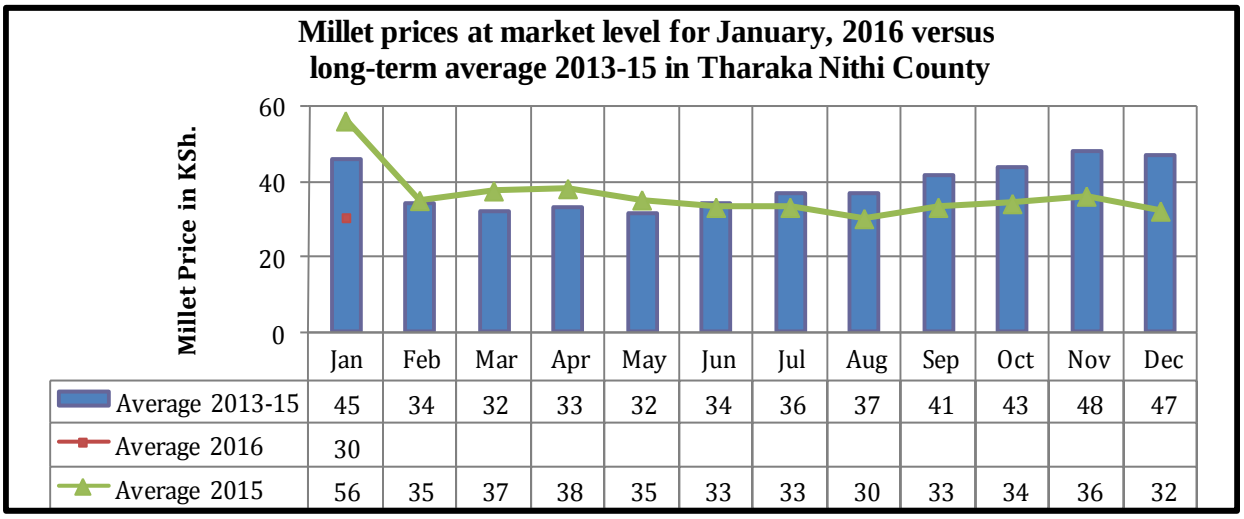
- The market average price of a kilogram of maize maintained a similar average price of Ksh 32.00 in the period under review in comparison to the previous month.
- The commodity's price stability over the period could be attributed to the stable supply and demand forces in the local markets.
- The Marginal mixed farming livelihood zone recorded an average of Ksh 33.00 as compared to mixed farming livelihood zone which recorded an average of Ksh 30.00. Rain fed cropping zones recorded an average price of Ksh 34.00.
- The price per kilogram of maize was slightly below the Long Term Average of Kshs.35.00.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	oct	Nov	Dec
Max	40	40	36	36	39	43	42	38	40	37	40	40
Min	35	32	18	22	21	26	29	29	32	35	34	32
Mean(2013-15)	35	36	28	30	32	34	34	33	34	34	35	35
2016	32											

3.3 Millet Price at Market level

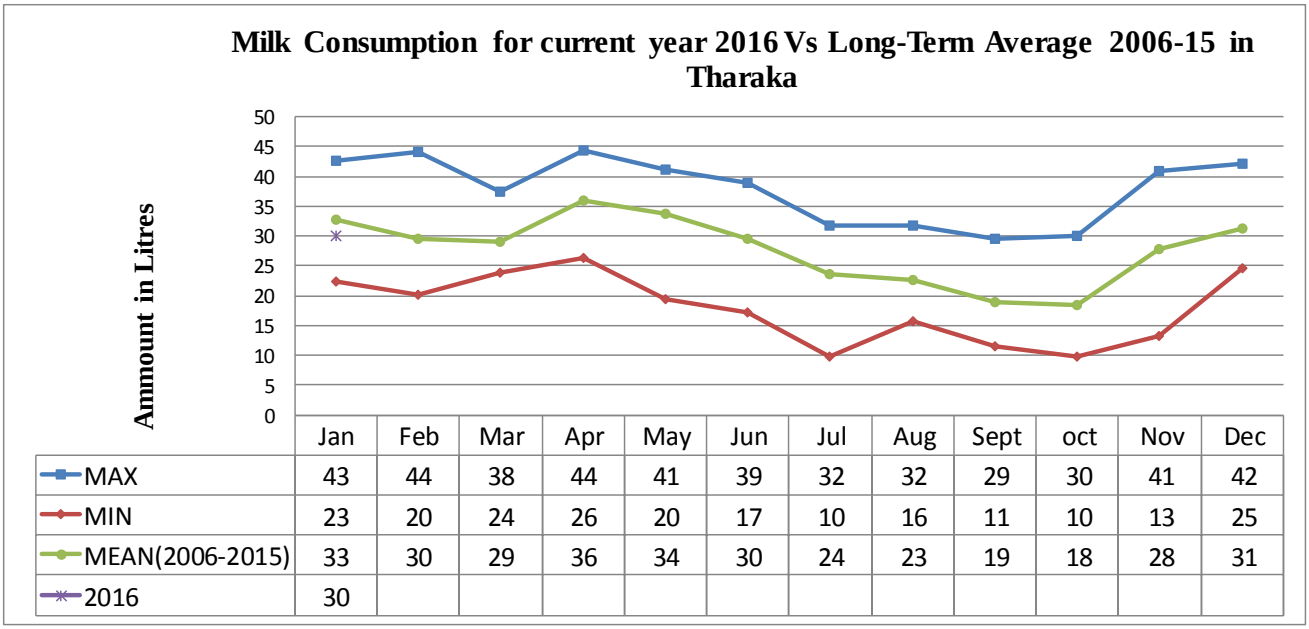
- The market average price of millet per kilogram slightly decreased from Ksh 34.00in December to Ksh 30.00 for the month of January. The price decrease could be attributed to ongoing millet harvesting.
- The highest market average price was recorded in Rainfed Cropping and mixed farming livelihood zones at Kshs 30.00 compared to Marginal Mixed farming at Ksh 29.00.
- The price was below the short-term average of Ksh.45.00 and the 2015 average price of Ksh 56.00 for this time of the year.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average 2013-15	45	34	32	33	32	34	36	37	41	43	48	47
Average 2016	30											
Average 2015	56	35	37	38	35	33	33	30	33	34	36	32

3.3 Milk Consumption

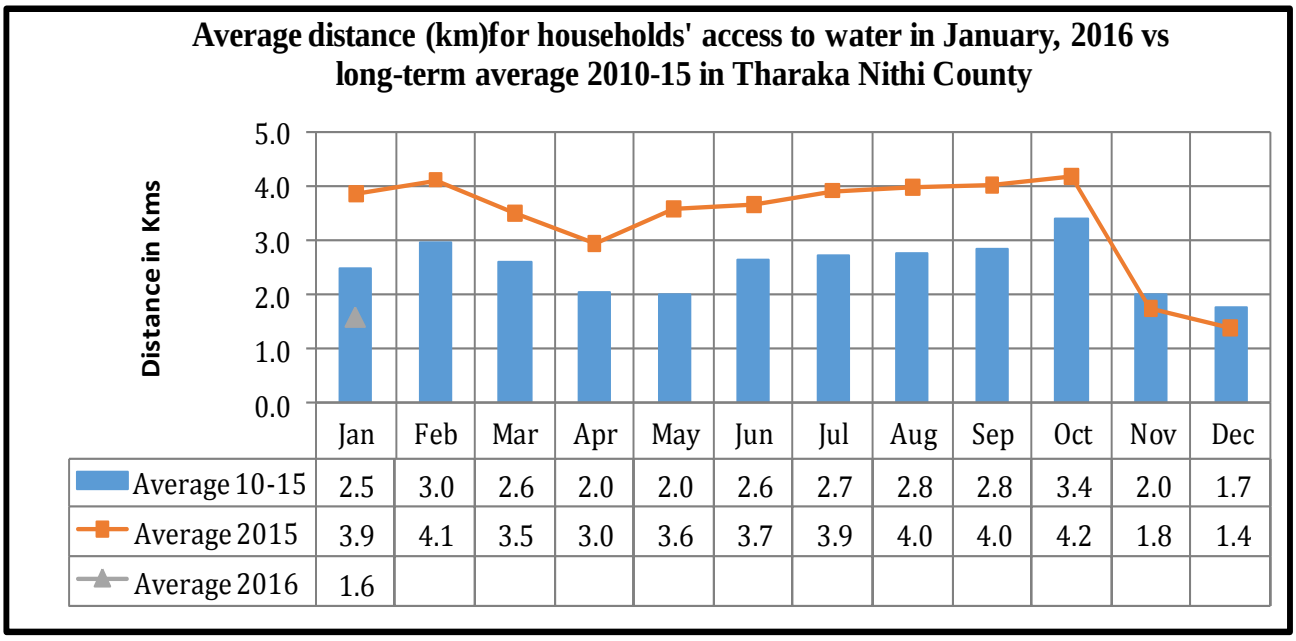
- The average milk consumption per livelihood zone in the period under review increased from 23 litres in December to 30 litres for the period under review indicative of a 30 percent increase.
- The highest milk consumption was recorded in the Marginal Mixed Farming livelihood zone at 50 litres compared to 21 litres in Rain fed livelihood zones and 14 litres in Mixed Farming livelihood zone.
- The average milk consumption per livelihood zone was slightly lower than the long-term average of 33 litres at this time of the year.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	oct	Nov	Dec
MAX	43	44	38	44	41	39	32	32	29	30	41	42
MIN	23	20	24	26	20	17	10	16	11	10	13	25
MEAN(2006-2015)	33	30	29	36	34	30	24	23	19	18	28	31
2016	30											

3.4 Availability of water for household consumption

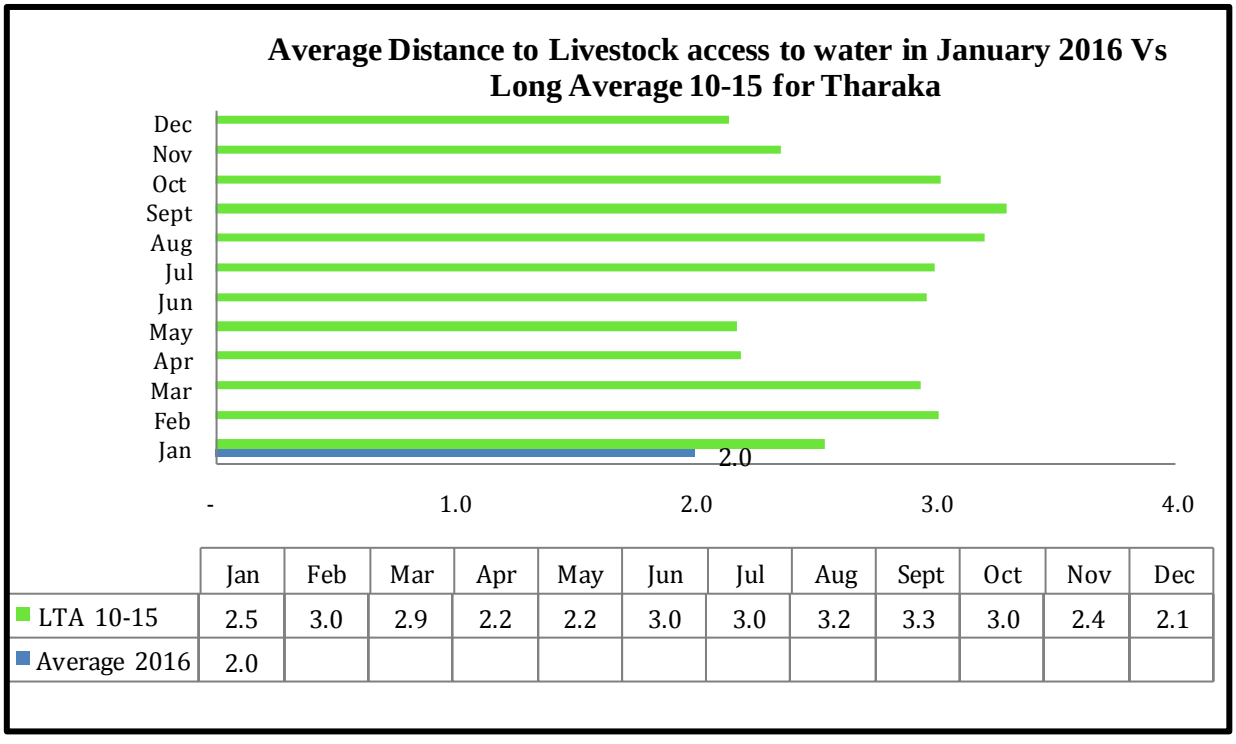
- Household access distance to water was 1.6km in January, 2016 which was relatively similar to 1.4 km during the previous month.
- The Marginal Mixed Farming livelihood recorded an average return distance of 2.1 km compared to 1.4km in Rain fed Cropping zone and 1.2km in mixed farming livelihood zones.
- The distance of household access to water was slightly below the five-year long-term average of 2.5 km and the 2015 period of 3.9km.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average 10-15	2.5	3.0	2.6	2.0	2.0	2.6	2.7	2.8	2.8	3.4	2.0	1.7
Average 2015	3.9	4.1	3.5	3.0	3.6	3.7	3.9	4.0	4.0	4.2	1.8	1.4
Average 2016	1.6											

3.3.4 Livestock access to water

- The livestock average distance to water sources slightly increased from 1.8 km in December, 2015 to 2.0km for the period under review attributed to the onset of the short dry spell period.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
LTA 10-15	2.5	3.0	2.9	2.2	2.2	3.0	3.0	3.2	3.3	3.0	2.4	2.1
Average 2016	2.0											

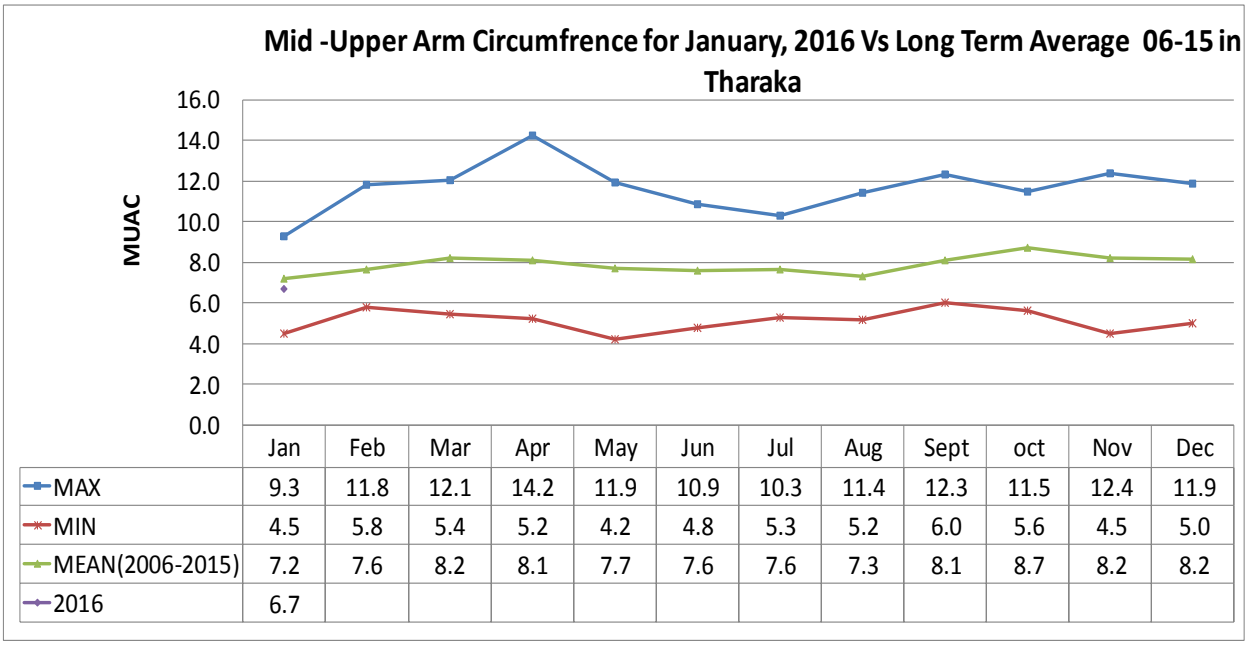
- The longest return distance to watering sources was recorded in the Marginal Mixed Farming at 3.0km. Rain fed cropping and mixed farming livelihood zones had 1.9 km and 1km respectively.
- The average distance to water sources was slightly below the long-term five-year average of 2.5 km for this time of the year.

4.0 UTILISATION INDICATORS

4.1 Health and Nutrition Status

4.1.1 MUAC

- The proportion of children at risk of malnutrition whose MUAC measurement was below 135 mm for the period under review decreased from 8.2 to 6.7 percent. This could be attributed to increase in milk consumption and access to increased dietary diversity at household level.
- The highest proportion of children at risk was recorded in the Marginal Mixed Farming zone at 10.3 percent compared to 4.4 percent and 5.5 percent in the Mixed Farming and Rain fed livelihood zones respectively.
- This was below the long-term average of 7.2 percent.



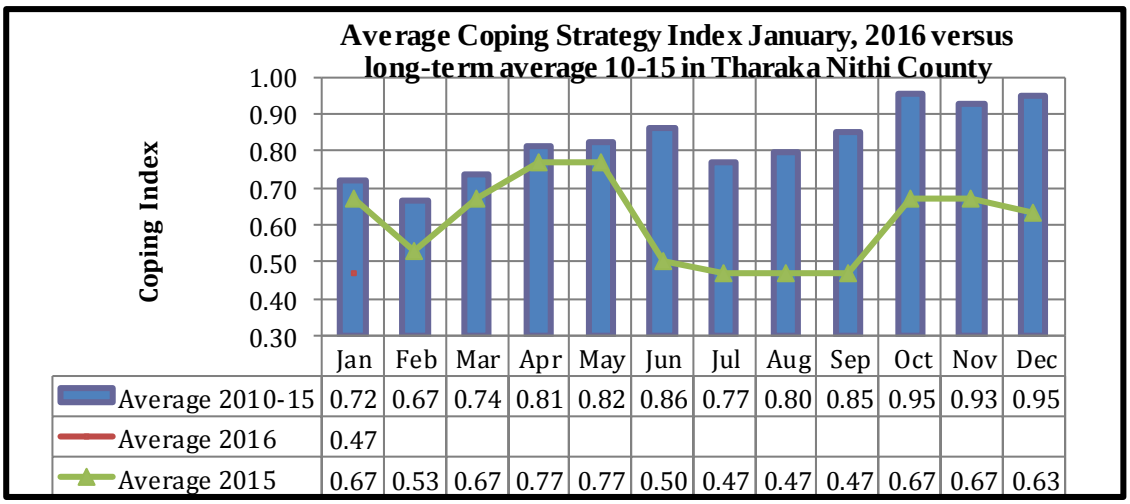
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	oct	Nov	Dec
MAX	9.3	11.8	12.1	14.2	11.9	10.9	10.3	11.4	12.3	11.5	12.4	11.9
MIN	4.5	5.8	5.4	5.2	4.2	4.8	5.3	5.2	6.0	5.6	4.5	5.0
MEAN(2006-2015)	7.2	7.6	8.2	8.1	7.7	7.6	7.6	7.3	8.1	8.7	8.2	8.2
2016	6.7											

4.1.2 Health

- The most common diseases affecting the general population were Upper Respiratory Tract Infections (URTI), Malaria, rheumatism, and pneumonia while for the under five were URTI, malaria, pneumonia, diarrhoea and skin diseases.

4.2 Coping Strategy Index

- The coping strategy index for the period under review stabilized at 0.47 in January implying that households were employing consumption related coping mechanisms more frequently during this season.
- The common coping mechanisms included reduced proportions on the meal ratios and increased reduction in number of meals portions.
- The coping strategy index was highest in the Marginal Mixed farming livelihood zone at 0.5. Mixed farming and rain fed cropping livelihood zones recorded coping strategy index of 0.4 and 0.5 respectively.
- This was below in comparison to both 2015 average of 0.67 and the six-year average of 0.72.



5.0 EMERGING ISSUES

5.2 Insecurity/Conflict/Human Displacement

- Cases of Cholera were reported in localised areas of Gatithini, Gatunga, Marimanti, Kathangachini and Nkondi

5.2 Migration

- No human or livestock Migration was reported in the period under review.

5.3 Food Security Prognosis

- The County food security is expected to remain relatively stable within normal range however the last dekad of February to the onset of Long Rains (March) the situation is likely to be wanting.
- Environmental, Livestock and pastoral welfare indicators are expected to show no unusual fluctuations and remain in the expected seasonal range for one to two months.
- The sources of water are expected to last for a period ranging between 3-5 months with a possible spill over to the next rainy season

6.0 CURRENT INTERVENTIONS AND RECOMMENDATIONS.

6.1 Ongoing Non-food interventions

- Promotion of Conservation Agriculture Technologies in Tharaka North and Tharaka South by FAO (Food and Agriculture Organization and the Department of Agriculture targeting 18 demo-sites in Tharaka North and 19 demo sites in Tharaka south.
- RVF Vaccines totalling to 20,000 were received from National Drought Management Authority (NDMA) this was further supported by Kshs. 285,000 for the logistics during the exercise for the vaccination.
- Two session of approximately 80 farmers were trained on Afflatoxin control funded by FAO

6.2 Food Aid

- No Food aid was received during the reporting period

6.3 Recommendations.

- Surveillance by Ministry of Livestock for livestock diseases.
- Emphasis on monitoring of food stock and on farm crop performance at household level.

- Increased surveillance on malnutrition and disease and conduct nutritional survey in Chiakariga and Kanjoro sentinel sites
- Close monitoring for malnutrition and underweight cases at household and health facilities.
- Training of farmers on diseases and disease control.
- Promotion of pastures management and conservation trainings at the community level.