

**National Drought Management Authority
THARAKA NITHI COUNTY (THARAKA)
DROUGHT EARLY WARNING BULLETIN FOR DECEMBER 2018**



A Vision 2030 Flagship Project



DECEMBER 2018 EW Phase

Drought Status: ALERT



Maandalizi ya mapema

Drought Situation & EW Phase Classification

Biophysical Indicators

- The month of December was cold and wet during the first two weeks while the third and the fourth week were dry. An average of 163mm of rainfall was received which was above the normal range although the distribution in time and space was uneven.
- The 3 months cumulative vegetation cover across the County was below normal and it reduced from that of the previous month.

Socio Economic Indicators (Impact Indicators)

Production Indicators

- The condition of pasture and browse was normal but it reduced slightly from that of the previous month. Livestock body condition reduced slightly from that of the previous month which led to a drop in livestock prices.
- Food Stock at households' level was low with a reducing trend but it remained normal compared to that of the long-term average.

Access Indicators

- Average livestock prices dropped due to deterioration of livestock body condition in some parts of the county. Grazing distance decreased due to supplementation of poor pasture by crop residues and fodder while household water distance decreased due to recharge of rivers from upstream. Milk production increased marginally while milk consumption increased significantly due to sourcing of milk from outside the county.

Utilization Indicators

- Percentages of children at risk of malnutrition decreased from that of the previous month. Following all the above prevailing conditions, the overall drought phase in December was still at alert with a declining trend.

Early Warning Phase Classification

	EW PHASE	TRENDS
Mixed Farming	Alert	Deteriorating
Marginal Mixed Farming	Alert	Deteriorating
Rain Fed Livelihood Zone	Alert	Deteriorating
County	Alert	Deteriorating
Biophysical Indicators	Value	Normal Ranges
Rainfall % of Average	146.85%	80-120
VCI-3month	11.2	>35
Water Sources	Normal	Normal
Production Indicators	Value	Normal Ranges
Livestock Migration Pattern	No Migration	No Migration
Livestock Body Conditions	Good	Fair
Milk Production	1.5 Litre	>1.27Litre
Livestock deaths (from drought)	No death	No death
Access Indicators	Value	Normal
Terms of Trade	127.2	<77
Milk Consumption	2.5 Litres	>0.99Litre
Water for Households	Normal	Normal
Utilization indicators	Value	Range/Value
MUAC	1.6	<8.2
Coping Strategy Index (CSI)	7.73	<52
Food Consumption (Marginal Mixed Farming)	83.3 Percent Acceptable	>80 Percent Acceptable

Seasonal Calendar

<ul style="list-style-type: none"> ▪ Short rains harvests ▪ Short dry spell ▪ Reduced milk yields ▪ Increased HH Food Stocks ▪ Land preparation 	<ul style="list-style-type: none"> ▪ Planting/Weeding ▪ Long rains ▪ High Calving Rate ▪ Milk Yields Increase 	<ul style="list-style-type: none"> ▪ Long rains harvests ▪ A long dry spell ▪ Land preparation ▪ Kidding (Sept) ▪ Increased HH Food Stocks 	Short rains Planting/weeding								
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec

1.0 CLIMATIC CONDITIONS

1.1 RAINFALL PERFORMANCE

- An average of 163 mm of rainfall was recorded in the month of December in most of the rain gauge stations. Kamurige received 222.3mm for 9 days, Tunyai received 216.9 mm for 11days, Marimanti received 165.2mm for 9 days, Karocho received 140.8mm for 7days, Yombo area of Kathangachini received 140.3mm for 5 days, Thiiti area in the Rain fed Zone near Mukothima received 137.3mm for 5 days while Chakariga received 116.5 mm for 10 days.
- Selective areas of Rain fed Zone in Mukothima received considerable rainfall although outside the rain gauge station and crops are performing well in such areas. The overall weather condition for the month of December was selectively wet and dry with rainfall performance for the month of December was above the long term average.

1.1.1 Rainfall Station data

- The figure below shows the rainfall trend for 2018 compared to the long term Average.

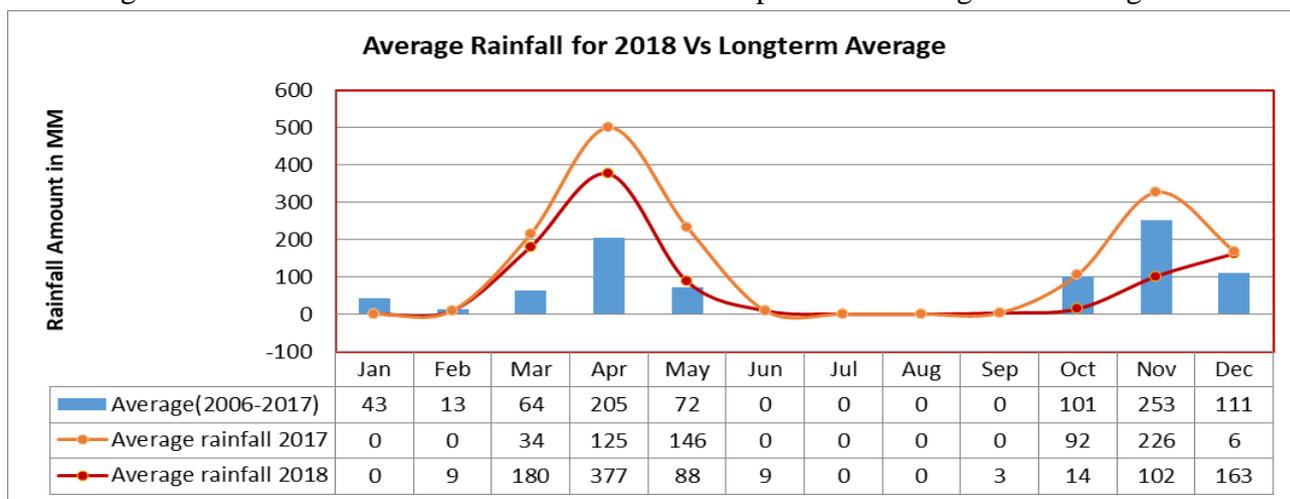


Figure 1: Average Rainfall for December 2018

Spatial Distribution of Rainfall

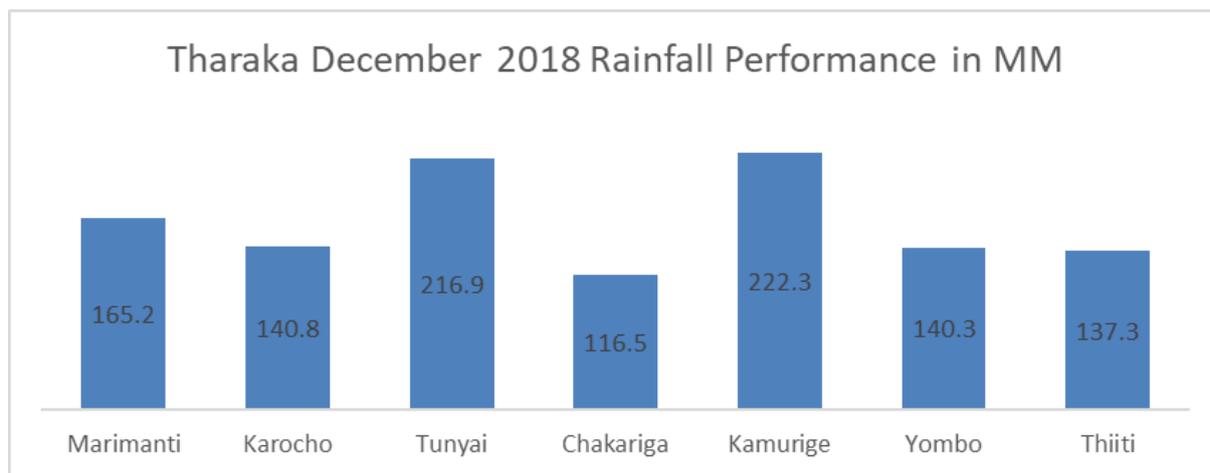


Figure 2: Spatial Distribution of Rainfall

1.1.3 Dekadal Distribution of Rainfall

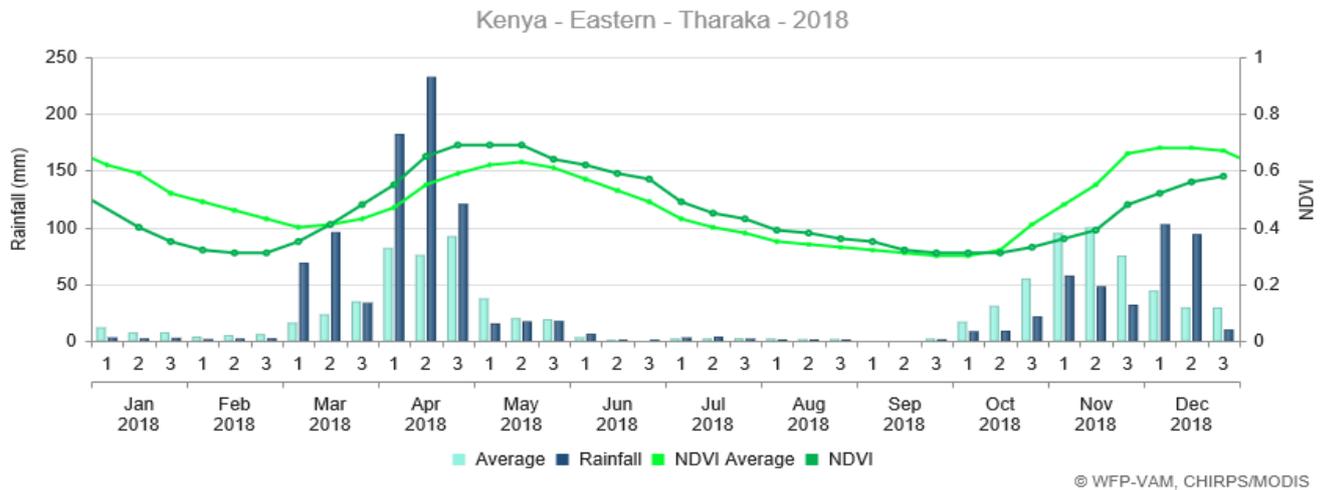


Figure 3: December 2018 Rainfall Distribution by Dekad

2.0 IMPACTS ON VEGETATION AND WATER

2.1 Vegetation Condition Index (VCI)

- The cumulative 3 month vegetation cover for Tharaka Nithi County (Tharaka) for the month of December was below normal compared to that of the long term average.

Table 1: December Vs November 2018 VCI (3M)

ADMINISTRATIVE UNITS		VCI as at 30 th November 2018	VCI as at 30 th December 2018
County	County/Sub County		
Tharaka Nithi	County	64.64	31.21
	Tharaka	59.48	11.2
	Chuka Igambang'ombe	71.82	54.91
	Maara	72.28	66.28

- The matrix below shows the vegetation condition for the month of December 2018 classified based on VCI thresholds.

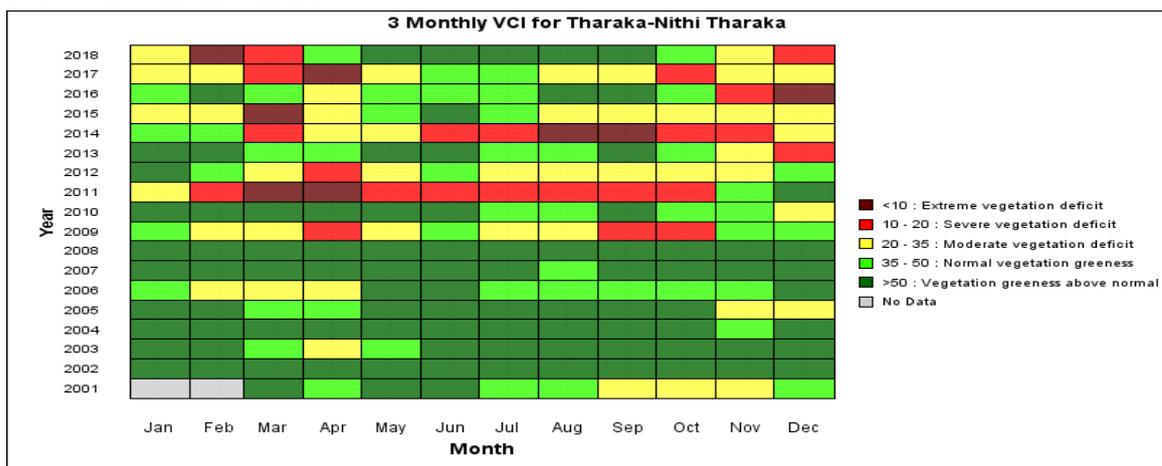


Figure 4: VCI Matrix for Tharaka Nithi (Tharaka)

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

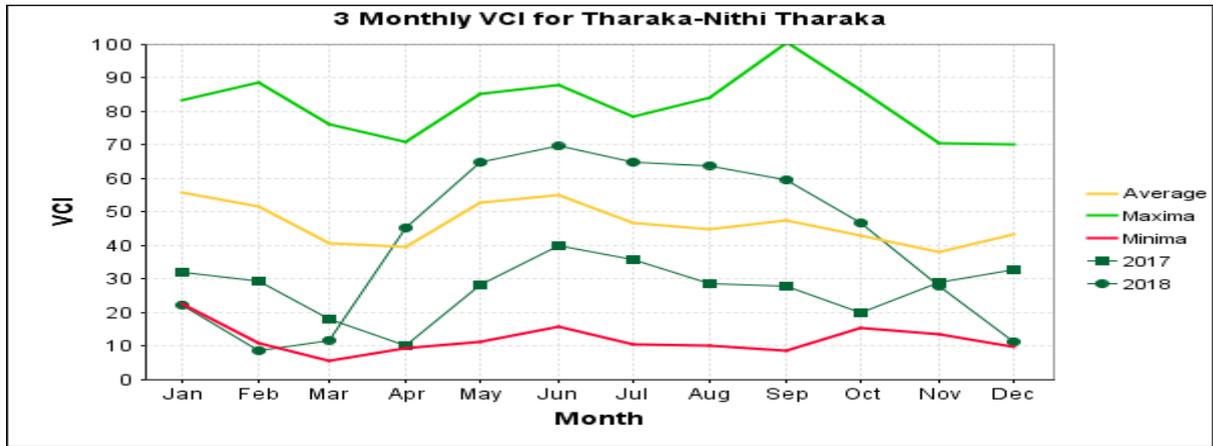


Figure 5: VCI Trend for Tharaka Nithi (Tharaka)

2.2 Natural Vegetation and Pasture Condition

Pasture Condition

- Pasture quantity and quality was poor to fair across all the Livelihood zone during the month of December.
- Pasture condition reduced from that of the previous month due to below rainfall amounts in the previous months compared to the long term average.

Browse Condition

- Browse condition in terms of quantity and quality was fair to good across all the livelihood zones in the month of December and it also reduced compared to that of the previous month. The browse condition for December was also below normal compared to that of the long term average.

2.3 Distance to Grazing Areas

- The average distance to grazing areas decreased from 1.9Km in November to 1.8Km in December. The decrease in grazing distance was caused by supplementation of poor pasture and browse by crop residue and fodder crops which also led to a slight increase in milk production.
- The longest return distance to grazing areas was recorded in the Marginal Mixed Farming Zone at 2.7Km, Mixed Farming livelihood zones at 1.7Km while in Rain Fed Cropping Zone, it was 1 Km.
- The distance to grazing areas was however 12.5 percent higher than the long term average of 1.6 km for this time of the year.

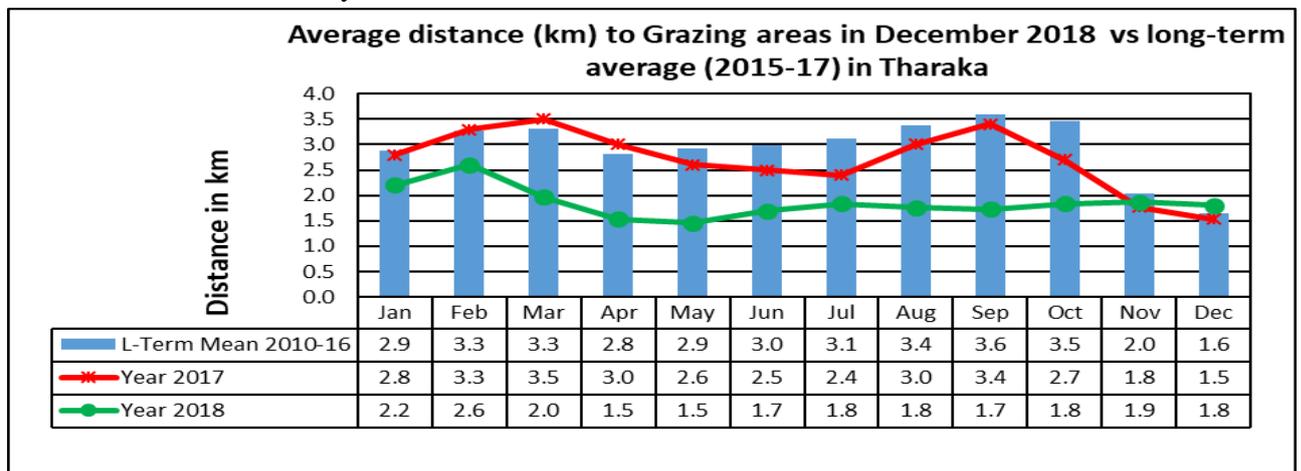


Figure 6: Grazing Distance for Livestock

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 for the month of December were Rivers, Boreholes, Traditional River wells, and shallow wells as shown by figure 7 below.

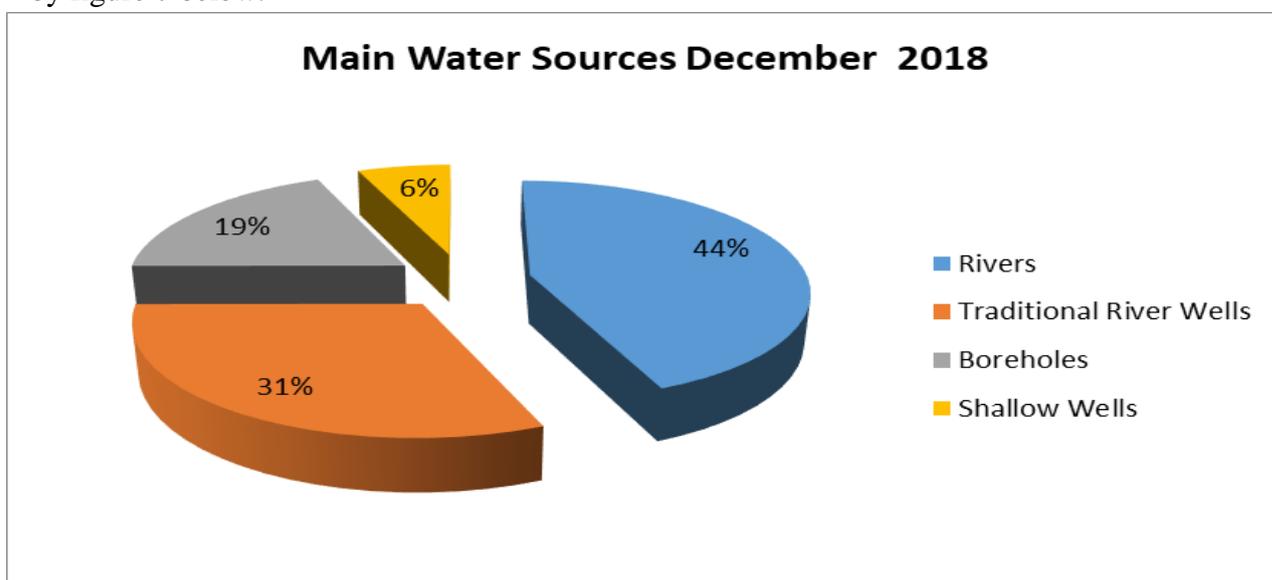


Figure 7: Main Water sources for December 2018

State of Water Sources

- The state of water sources for the month of December was normal and the trend was almost the same compared to that of the previous month.
- This was due to some rainfall which was received across the County. The status of water sources remained 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 poor to fair across all the livelihood zones. This was attributed to reduction of pasture and browse both for cattle and shoats.
- The Livestock body condition in December for both cattle and shoats was still rated at index 5 as per the livestock threshold scale below.

Table 2: Livestock Body Condition categories

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 th & 13 th 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	

3.1.2 Livestock Diseases and Migration

- There were no cases of Livestock in migration reported in the month of December.

3.1.3 Milk Production

- Milk production improved from an average of 1.3 litre per household per day in November to an average of 1.5 litre per household per day in December. This could be attributed to supplementation of poor pasture and browse by crop residue and fodder crops for core breeding and lactating livestock.
- 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. However in the Mixed farming Zone, there were supply of milk from the neighbouring county of Meru which ended up increasing consumption despite low production in those areas.
- Milk production per household was 18.1 percent higher than the 3-year average of 1.27 litre.

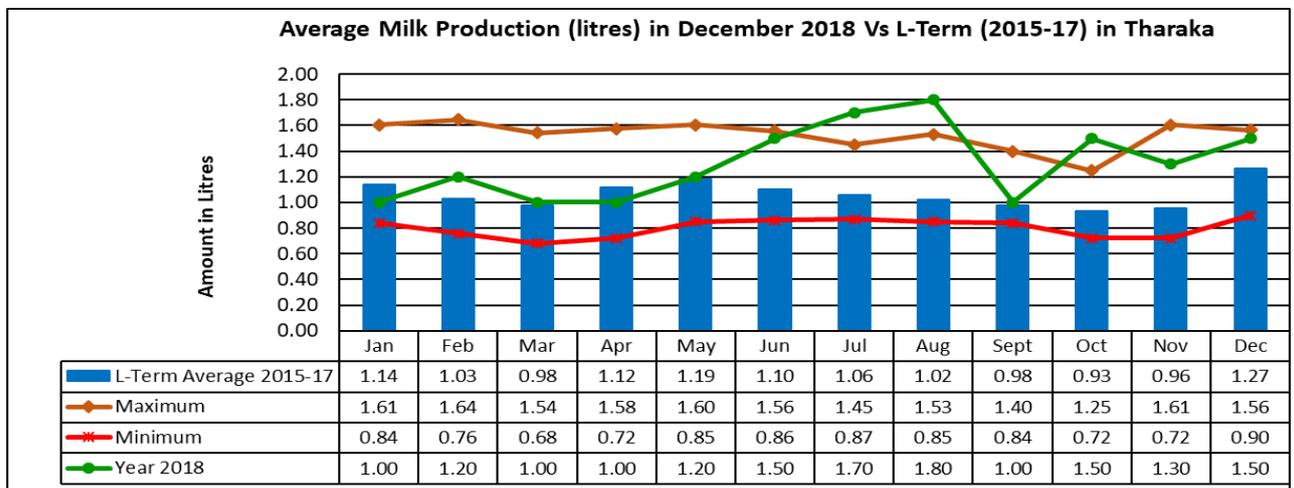


Figure 8: Milk Production Trend

3.2 Crop Production

3.2.1. Timeliness and Status of Crops

- Farming activities for the month under review was mainly weeding and pest control through spraying. Crops planted include: millet, sorghum, green grams, cow peas, maize and pigeon peas.
- Crops in some selected areas of Mixed Farming Zone of Tunyai, Karocho and parts of Rain fed areas of Mukothima and parts of Marginal Mixed Farming Zone are at the knee and flowering stage of development.

3.2.2. Pests and Diseases

- Minimal cases of crop pests and diseases were reported in the county during the month of December.

4.0 MARKET PERFORMANCE

4.1 Livestock Prices

4.1.1 Cattle Prices

- The average cattle price decreased from Kshs. 24,458 recorded in the previous month to Kshs. 21,792 in the month of December. The decrease in price could be attributed to reduced cattle body condition leading to a decrease in average cattle prices especially in the Marginal Mixed Farming Zone where the prices were lowest.
- The Mixed Farming livelihood Zone had the highest average price of Ksh 29,375; Rain Fed Cropping Zone had a price of Kshs 23,000 while the Marginal Mixed Farming Livelihood Zone had the lowest price of Ksh 18,834. The current price was 8.6 percent higher than the three-year average of Kshs 20,067.

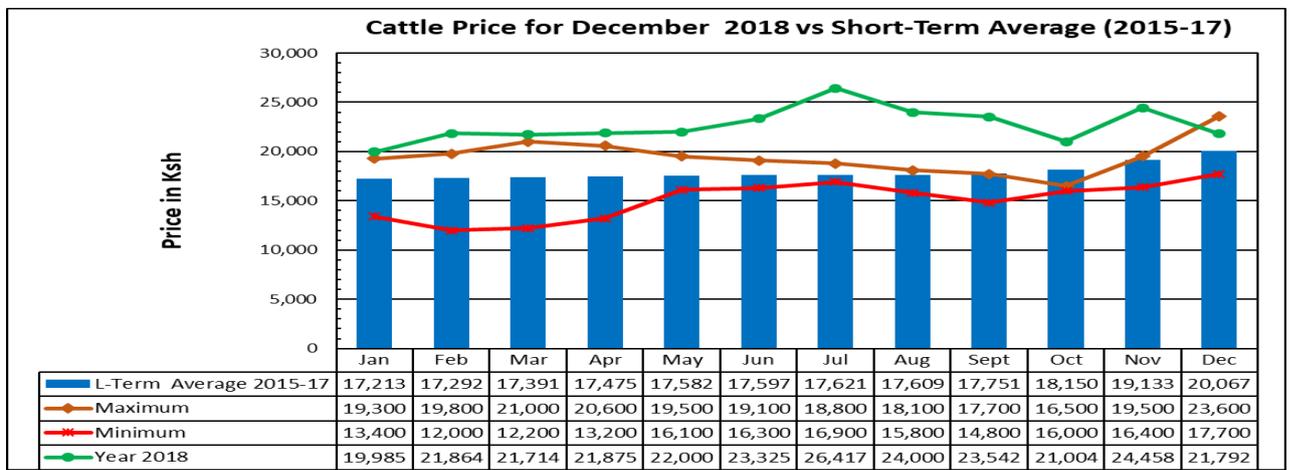


Figure 9: Cattle Price Trend

4.1.2 Goat Prices

- The average goat price decreased from Kshs 4,067 in November to Kshs 3,817 in December. This decrease in price could be attributed to a decrease in goat's body condition in the Mixed Farming Zone due to less browse leading to a drop in goat prices.
- The Rain Fed Cropping Livelihood Zone had the highest price of Ksh. 4,000; Marginal Mixed Farming Livelihood Zone recorded the price of Kshs 2,975 while the Mixed Farming Zone recorded the lowest price of Ksh. 2,975.
- The average goat price was 10 percent higher than the three-year average of Ksh 3,470.

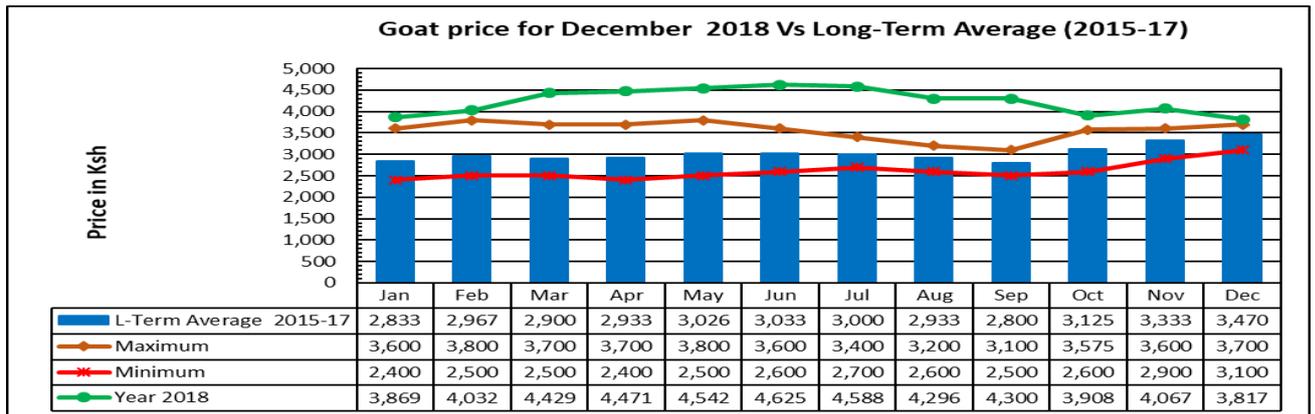


Figure 10: Goat Price Trend

4.2 Price of Cereals and Other Food Products

4.2.1 Maize Prices

- The average market price of a kilogram of maize increased from Kshs 29 in November to Kshs 30 in December. This increase in maize price could be attributed to the diminishing stocks of maize from the long rain harvests and also the transport challenges and strict enforcement of the transport laws which led to increased transport cost for maize outside the county.
- Maize price was Kshs 30 per Kg across all the livelihood zones. The average maize price was 21.05 percent lower than the three-year average of Ksh 38.

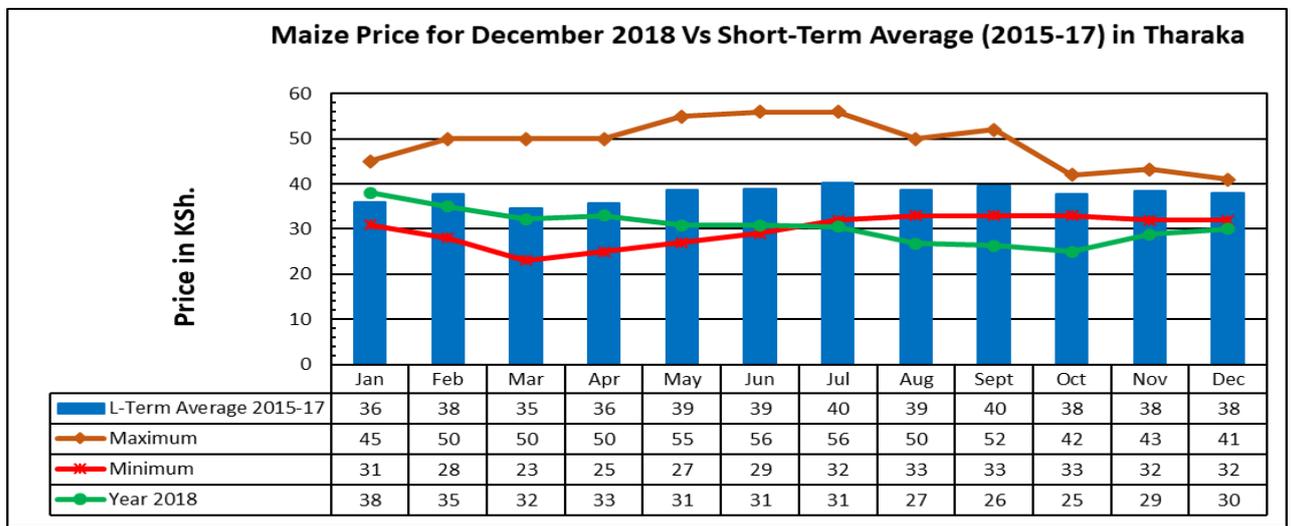


Figure 11: Maize Price Trend

4.2.2 Millet Price at Market Level

- The average market price of millet increased from Kshs 35 per Kg in November to Kshs 39 per Kg in December due to diminishing stock at household level from the concluded long rain harvest.
- The Marginal Mixed Farming Livelihood and the Rain Fed livelihood Zone recorded the highest market price of Kshs 40/Kg while the Mixed Farming Livelihood Zone recorded the price of Kshs 35/Kg.
- The millet price was 29.09 percent lower than the long-term average price of Kshs.55 per Kg for the month of December.

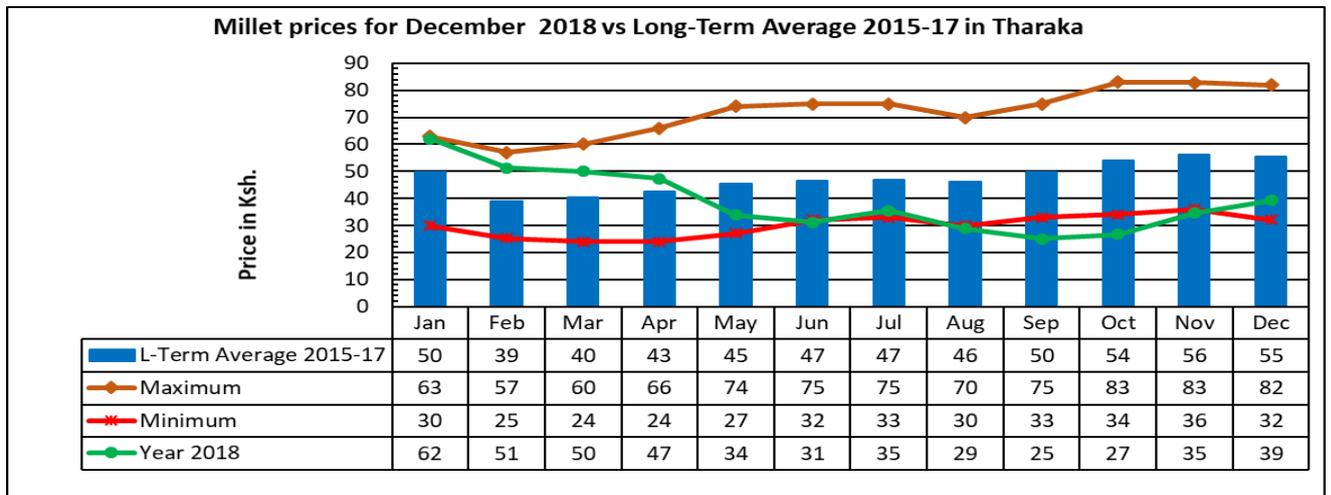


Figure 12 : Millet Price Trend

4.2.3 Terms of Trade (ToT)

- The Terms of Trade decreased from 135.3 in November to 127.2 in December due to a higher increase in maize price and a drop in average goat price recorded during the month of December.
- The highest ratio was recorded in the Rain Fed Cropping Zone at 133.33; followed by Marginal Mixed Farming Livelihood Zone at 130 while Mixed Farming Livelihood Zone had a ToT of 99.17.
- The ToT for the period under review was 65.19 percent higher than the three year average value of 77 during the same period.

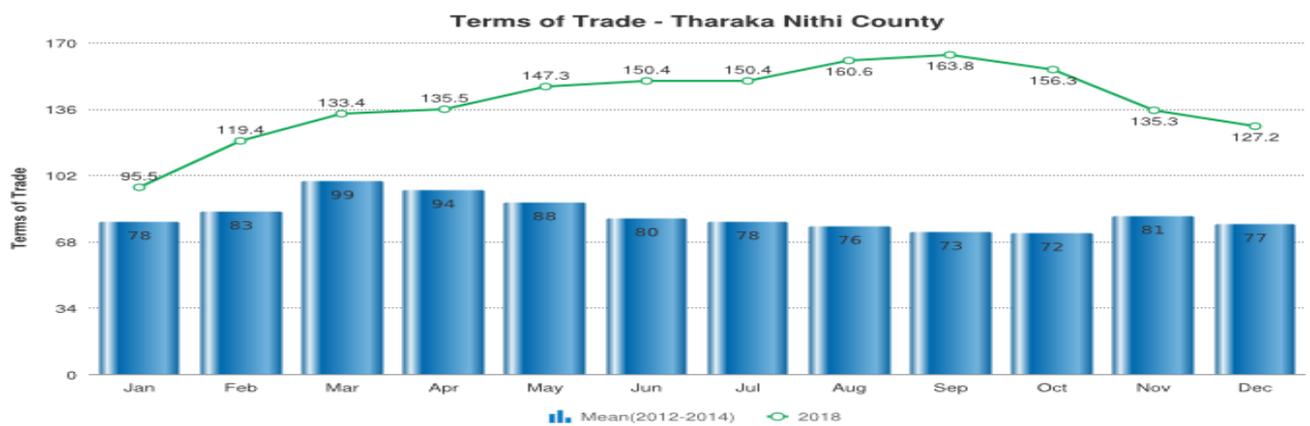


Figure 13: Term of Trade

5.0 FOOD CONSUMPTION AND NUTRITION STATUS

5.1.1 Milk Consumption

- The average milk consumption per household per day increased from 1.5 litre in November to 2.5litre in the month of December. The increase in household milk consumption was mainly in the Mixed Farming Livelihood Zone whereby most of it was from the neighbouring county of Meru. However, milk consumption was lower in the Marginal Mixed Farming and the Rain Fed livelihood zones compared to their long term average.
- The average milk consumed was 152.53 percent higher than the 3-year average of 0.99 litre per household per day.

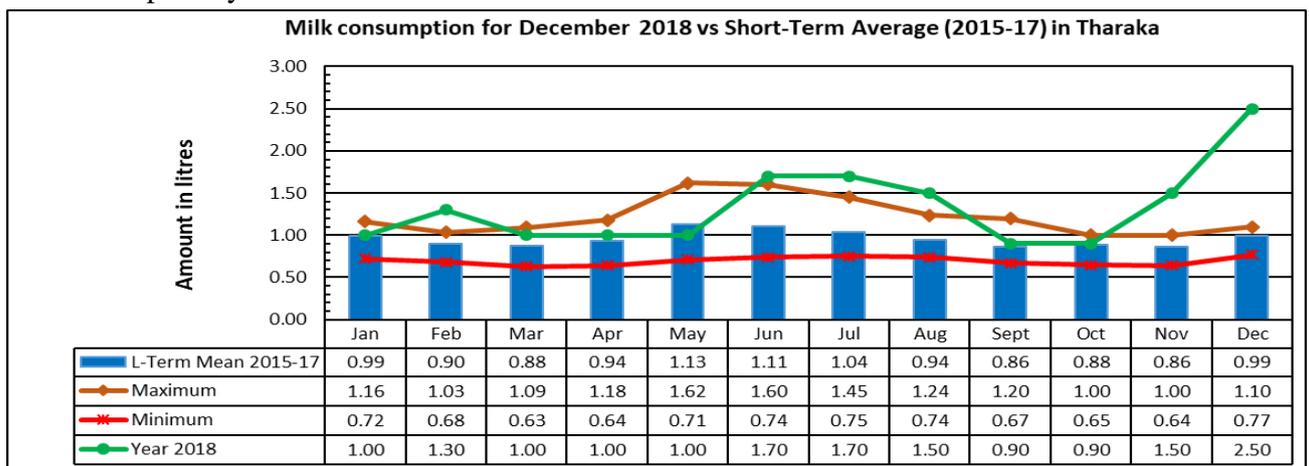


Figure 14 : Milk Consumption Trend

5.1.2 Food Consumption Score

- Proportion of food insecure households with poor and borderline Food Consumption Score (FCS) increased from 23.3% in November to 34.43% December. The increase was due to increase in commodity prices but was still within the normal range.
- A higher number of Food Stressed Households were in the Rain Fed Cropping Livelihood Zone at 83.3%, followed by Marginal Mixed Farming Livelihood Zone at 16.7% while Mixed Farming Livelihood Zone had the least food insecure household at 3.3%.

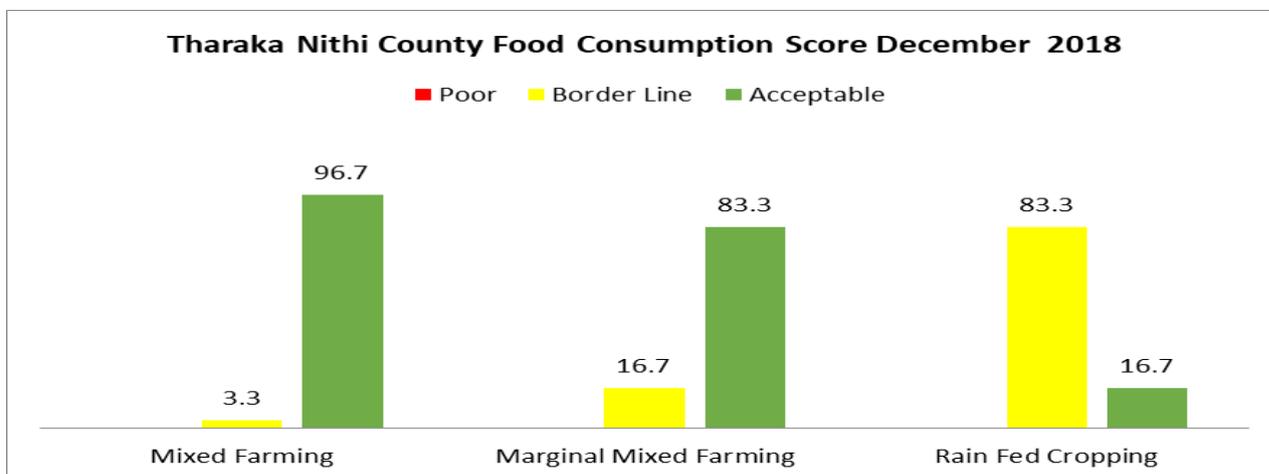


Figure 15: Food Consumption Score Chart

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
April	82.23	16.67	1.1	17.76
May	89.43	10.57	0	10.57
June	83.33	15.56	1.1	16.67
July	86.9	13.9	0	13.90
August	79.43	19.47	1.1	20.57
September	73.87	25.03	1.1	26.13
October	75	25	0	25
November	76.67	23.33	0	23.33
December	65.57	34.43	0	34.43

- The poor food consumption score implies household are not consuming staples and vegetables every day and rarely consuming protein rich food, borderline imply household are 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 1.5 Km in the month of November to 1.3 Km in the month of December. This could be attributed to recharge of water in rivers and upgrade of hand pumps to solar powered leading to reduced household water distance.
- The Marginal Mixed Farming livelihood Zone recorded an average distance of 2 Km, the Mixed Farming Livelihood Zone 1.3 Km while Rain Fed zone had a distance of 0.6 Km per household.
- The distance of household access to water was lower than the long-term average of 1.5 Km for the month of December.

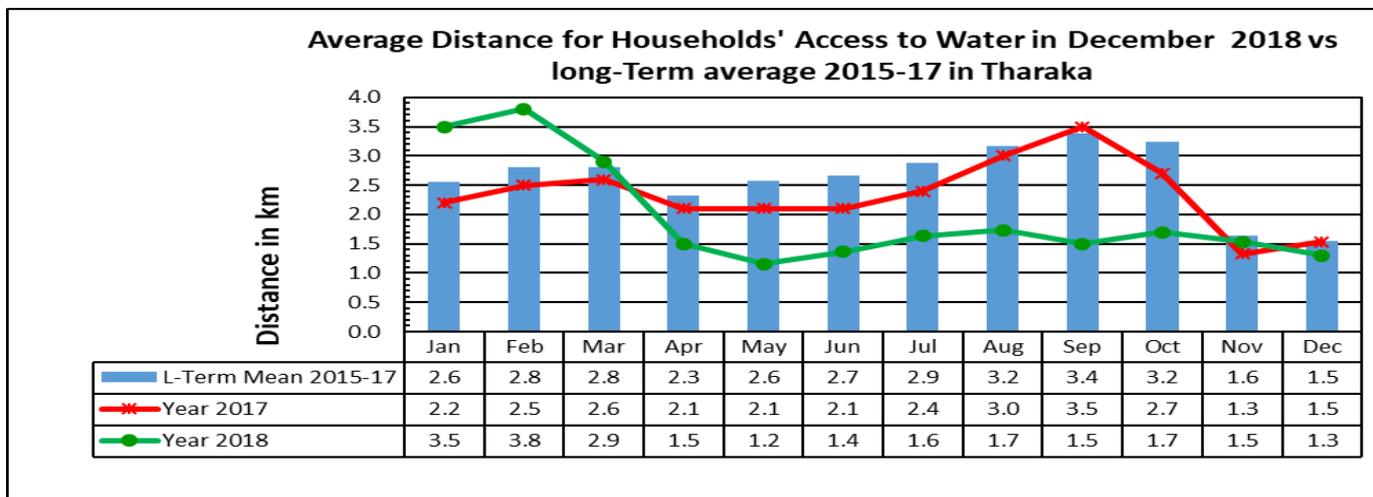


Figure 16 : Household Water Distance Graph

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 decreased from 1.9 percent in the month of November to 1.6 percent in December due to increase in milk consumption amongst children.
- The proportion of children at risk of malnutrition whose MUAC measurement was below 135mm was below the long-term average of 8.2 percent.

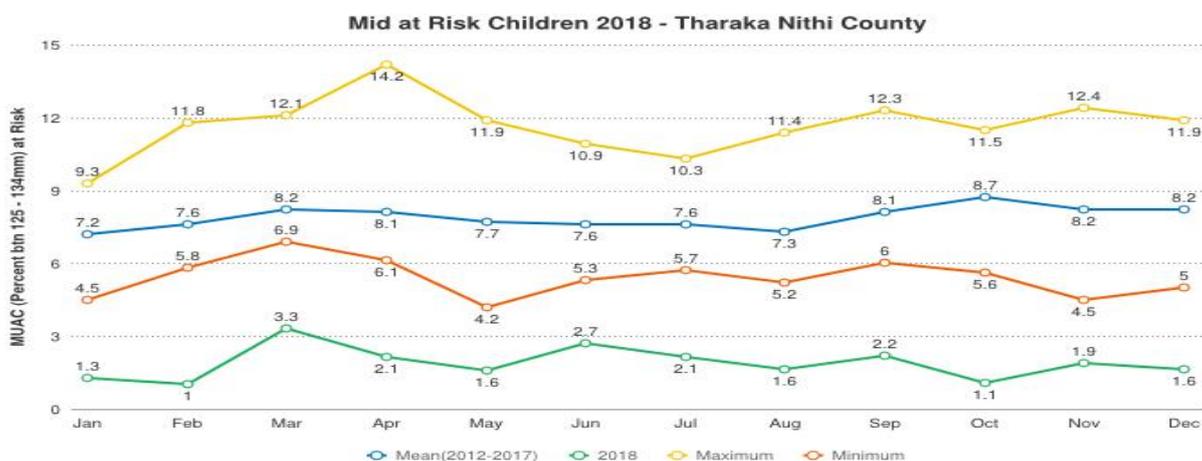


Figure 17: MUAC Graphs

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

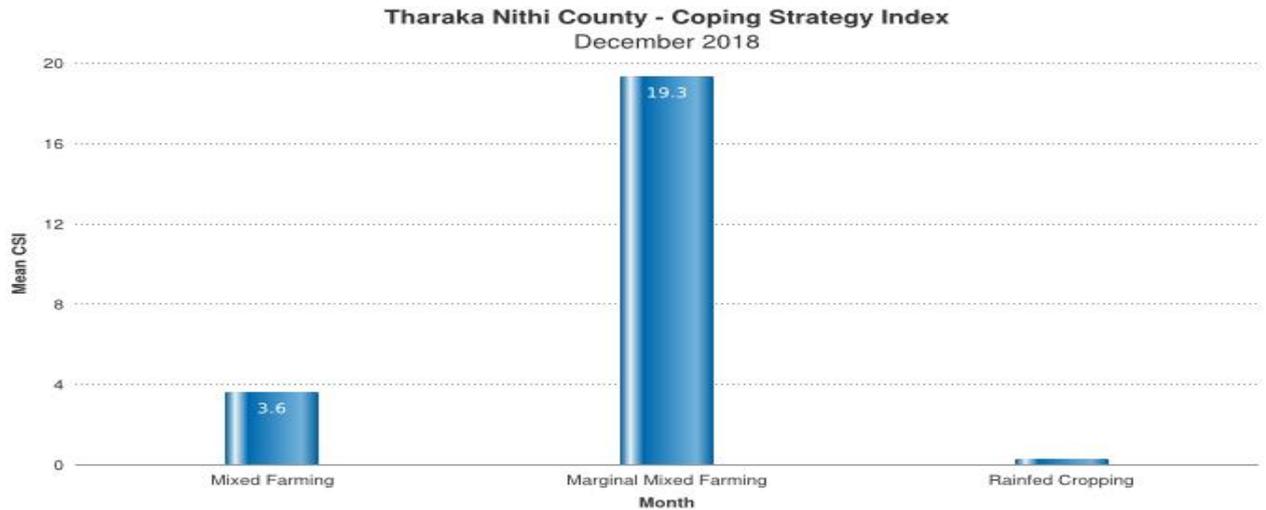


Figure 18: CSI Chart

- The Coping Strategy Index (CSI) increased from 2.36 in November to 7.73 in December due to increase in commodity prices indicating an increase in household stress due to lack of food or money to buy food during the month of December. The CSI for December was however within the normal range.
- The highest CSI was recorded in the Marginal Mixed Farming zone at 19.3 followed by 3.6 in the Mixed Farming Livelihood Zone while the Rain Fed Livelihood Zone recorded the least CSI of 0.3.
- The most commonly employed coping strategy mechanisms during the month of December were: - Obtaining of goods on credit, Reliance on less preferred and less expensive food.
- 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

Agriculture				
INTERVENTION	Sub County	BENEFICIARIES	IMPLEMENTERS	COST
Sensitisation of community members on DRR	Tharaka North and South	80HH	IAS/NDMA	-
Promotion of conservation agriculture	THARAKA NORTH & SOUTH	1700HH	MoA/FAO	10 M
Ruungu and Muungano Irrigation scheme	THARAKA NORTH & SOUTH	1000HH	ADB,GOK,MOALF	320 M
Value addition processing plant	THARAKA NORTH & SOUTH	22,000	MoA, NDMA	25 M
Livestock				

INTERVENTION	SUB COUNTY	NO. OF BENEFICIARIES	IMPLEMENTATION STAKEHOLDERS	COST
Goats upgrading for milk and meat and dairy cow rearing	THARAKA NORTH & SOUTH	600	Upper Tana (UTaNRMP) and Livestock Department	9.5 M
Vector control (tsetse fly/ticks)	“	3,600	KENTTEC and Veterinary department	12 M
Chicken upgrading for eggs and meat	“	960	Upper Tana (UTaNRMP) and Livestock Department	
Water				
INTERVENTION	LOCATION	NO. OF BENEFICIARIES	IMPLEMENTERS	COST
Construction of Manduru earth dam	Maragwa	500	GoK thro Tana Water Services Board(TWSB)	20.0m
Upgrading of boreholes	Marimanti Gaceuni Chiakiga	2000	Tharaka Nithi County Government (TNCG)	28m
Drilling of boreholes	Chiakariga Mukothima Nkondi, Muthokima	1500	TNCG	21m
Extension of pipelines	Marimanti , Maragwa,	1000	County government, National government and partners	30M
Health				
INTERVENTION	LOCATION	BENEFICIARIES	IMPLEMENTERS	COST
Vitamin A supplementation , deworming	Tharaka North and South	10,998	MOH, Partners	12 M
IYCN	Tharaka North and South	10,998	MOH, Partners	4M
Malezi bora campaign	Tharaka North and South	19,687	MOH, Partners	1.2
Education				
Distribution of 5 tanks to schools	Tharaka South	-	NDMA/Water Department	
Intervention	Location	Beneficiaries	Implementers	Cost
Storage water tanks	Tharaka north and South	162 schools	NDMA, plan international, national government and well wishers	15 M

Boreholes	Tharaka north and South		National government County government and SIDA	46 M
Sanitary towels distribution	Tharaka north and South		National government County government and SIDA	
Piped water in schools	Tharaka north and South	54 school	National government County government	8 M

7.0 Food Security Prognosis

- Food Stocks at households' level was normal during the month of December from the long rain harvest but was rapidly depleting. The trend is likely to decline further till the next harvest in January to February 2019, when the next harvest is expected. Currently weeding and pest control through spraying is ongoing mainly in the Marginal Mixed Farming and parts of Rain Fed Zones while in most parts of Mixed Farming Zones, the crops are flowering.
- Markets operations are likely to fluctuate depicting different trends for livestock and crops. Commodity prices are likely to increase in the next 1 months due to diminishing stocks from the long rains harvests while livestock prices are most likely to increase for the next one month due to improved livestock body condition caused by sufficient pasture and browse from the expected short rains which will improve pasture and browse.
- Status of water sources is normal with household and Livestock watering distance being within normal ranges but the situation is likely to decrease for the next 1 month due to cessation of the short rains and the decreased volume of water from rivers upstream.
- Pasture condition is fair to good but the condition is likely to improve in the next 1 month, resulting to shorter grazing distance, improved milk production; good livestock body condition and increased livestock prices.
- Terms of Trade was still favourable to Livestock farmers compared to crop farmers due to higher livestock prices compared to commodity prices but the trend is likely to reduce for the next 1 month till January.
- Households in the County are likely to remain Food sufficient for the next 1 month.

8.0 Recommendations

- Upscale vaccination of poultry to protect them against Newcastle disease.
- Sensitisation and promotion of water treatment methods to avoid infection and spread of water related diseases.
- Upscale of Health and Nutrition outreach services on child monitoring.
- Capacity building on improved farming technologies and conservation agriculture.
- Provision of water treatment chemicals at household level and at piped water reservoirs to minimise the risk of water related diseases.
- Community sensitization on Livestock feed preservation and controlled grazing.
- Capacity building of community members on Disaster Risk Reduction measures.