

National Drought Management Authority
THARAKA NITHI COUNTY (THARAKA)
DROUGHT EARLY WARNING BULLETIN FOR DECEMBER 2019



A Vision 2030 Flagship Project



December 2019 EW Phase

Drought Status: NORMAL



Early Warning Phase Classification

	EW PHASE	TRENDS
Mixed Farming	Normal	Improving
Marginal Mixed Farming	Normal	Improving
Rain Fed Livelihood Zone	Normal	Improving
County	Normal	Improving
Biophysical Indicators	Value	Normal Ranges
Rainfall % of Average	140.88%	80-120
VCI-3month	60.65	>35
Water Sources	Above Normal	Normal
Production Indicators	Value	Normal Ranges
Livestock Migration Pattern	No Migration	No Migration
Livestock Body Conditions	Good	Good
Milk Production	1.5 Litre	Above 1.27 Litre
Livestock deaths (from drought)	No death	No death
Access Indicators	Value	Normal
Terms of Trade	79.8	Above 77
Milk Consumption	1Litres	Above 1.46 Litre
Water for Households	Normal	Normal
Utilization indicators	Value	Range/Value
MUAC	7.1	Below 5.2
Coping Strategy Index (CSI)	10.93	Below 7.73
Food Consumption (Acceptable FCS)	66.13%	Above 65.57%

Drought Situation & EW Phase Classification

Biophysical Indicators

- Rainfall received in December was above normal which was good for crops, pasture and browse development. Weather condition was wet and cold. Recharge of water sources was over 100%.
- Water contamination increased hence need to intensify water treatment to avoid water related diseases.
- The 3months cumulative vegetation cover across the County was normal. However there were selective cases of Fall Army Worm which was a threat to Food Security hence need for proper measures to be undertaken to control the pest in future.

Socio Economic Indicators (Impact Indicators)

Production Indicators

- Livestock body condition for both cattle and goats was fair and improving. Food Stock at households' level was moderate and the situation was improving due to commencement of harvesting of pulses from the 2nd week of December. Crops harvested were mainly green grams.

Access Indicators

- Livestock prices improved while food commodity prices showed a downward trend. Household water distance reduced across all the livelihood Zones due to high recharge level of both surface and underground water source. Milk production and consumption increased which will in turn lead to low malnutrition cases.

Utilization Indicators

- Percentages of children at risk of malnutrition decreased due to improvement of food availability and accessibility at Household level.
- Following all the above prevailing conditions, the overall drought phase in December was Normal and the trend was improving.

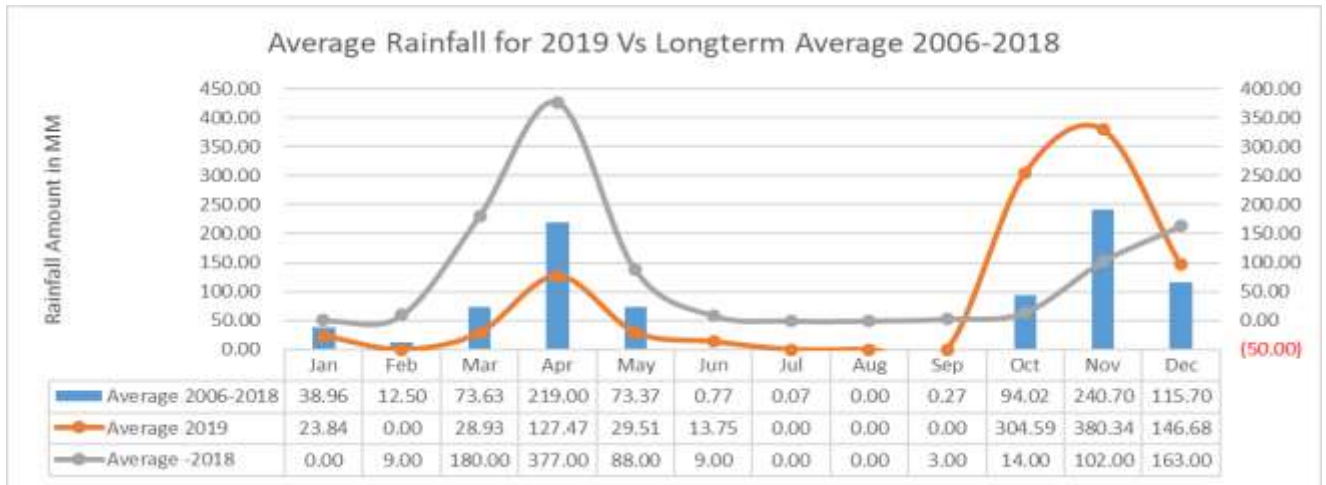
Seasonal Calendar

<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

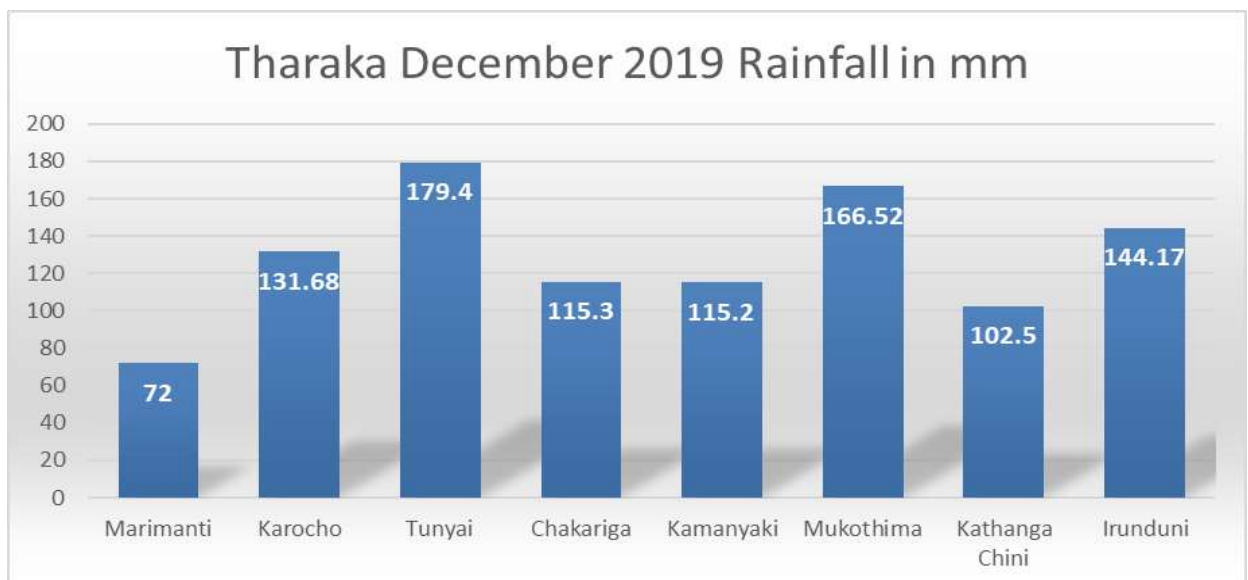
1.1 RAINFALL PERFORMANCE

- An average amount of 146.68mm of rains was received in December. This was normal compared to the long term average of 115.7mm for December.
- The drought situation is Normal and the situation is improving with most indicators within the normal range.
- The figure below shows the rainfall trend for 2019 compared to the long term Average.



1.1.1 Spatial and Temporal Distribution of Rainfall

- Rainfall received in the month of November was evenly distributed across all the livelihood zones. Tunyai received the highest amount of rainfall of 179.4mm for 11days, Mukothima received 166.52 mm for 7days, Irunduni received 144.17mm for 5 days, Karocho 131.68mm for 5days, Chakariga received 115.3mm for 8 days, Kamanyaki received 115.2mm for 4 days, Kathanga chini 102.5mm for 4 days while Marimanti received the least amount of 72mm of rainfall for 8days.
- The total amount of rainfall received per the rain gauge station is as shown by the chart below.



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 60.65 from 38.43 in November which was indicating above normal vegetation condition. Pasture and browse improved across all the livelihood zones due to the ongoing rains.
- The matrix in figure 1(a) below shows vegetation cover classification based on the drought phases while figure 1(b) shows the trend of vegetation cover in terms of vegetation condition index for Tharaka Nithi (Tharaka) County.

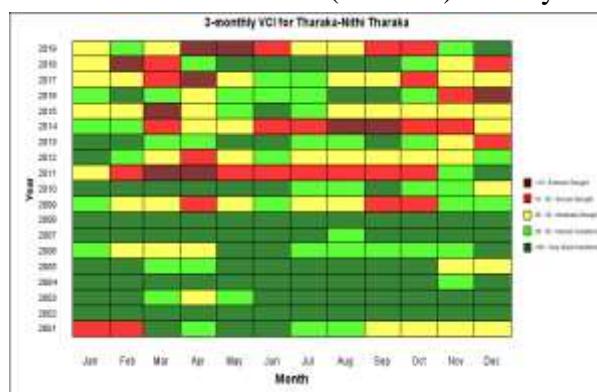


Figure 1(a): Matrix of VCI Classification

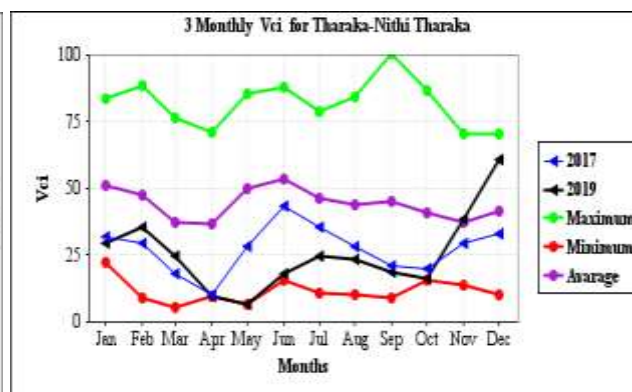


Figure 2(b): Chart of VCI Trend

Table 1: December Vs November 2019 VCI (3M)

ADMINISTRATIVE UNITS		VCI as at 28th November 2019	VCI as at 29th December 2019
County	County/Sub County		
Tharaka Nithi	County	47.16	63.02
	Tharaka	38.43	60.65
	Chuka Igambang'ombe	61.59	69.96
	Maara	57.46	62.23

2.2 Natural Vegetation and Pasture Condition

Pasture Condition

- Pasture quantity and quality was good across all the Livelihood zone during the month of December with an improving trend.
- Pasture condition improved from that of the previous month due to the ongoing rains which persisted to the month of December.

Browse Condition

- Browse condition in terms of quantity and quality was good across all the livelihood zones in the month of December and it continued to improve compared to that of the previous month.
- This improvement of browse was triggered by the ongoing short rainfall.

Livestock Access

- Average grazing distance decreased from 1.3 Km in November to 0.9 of a Km in December due to improvement of browse and pasture condition. The longest distance to grazing areas was recorded in the Mixed Farming Zone and Rain Fed Cropping Zone at 1Km each while the Marginal Mixed Farming Zone recorded the least grazing distance of 0.8 of a Km.

- The distance to grazing areas was however 50 percent lower than the long term average of 1.8 Km for this time of the year.

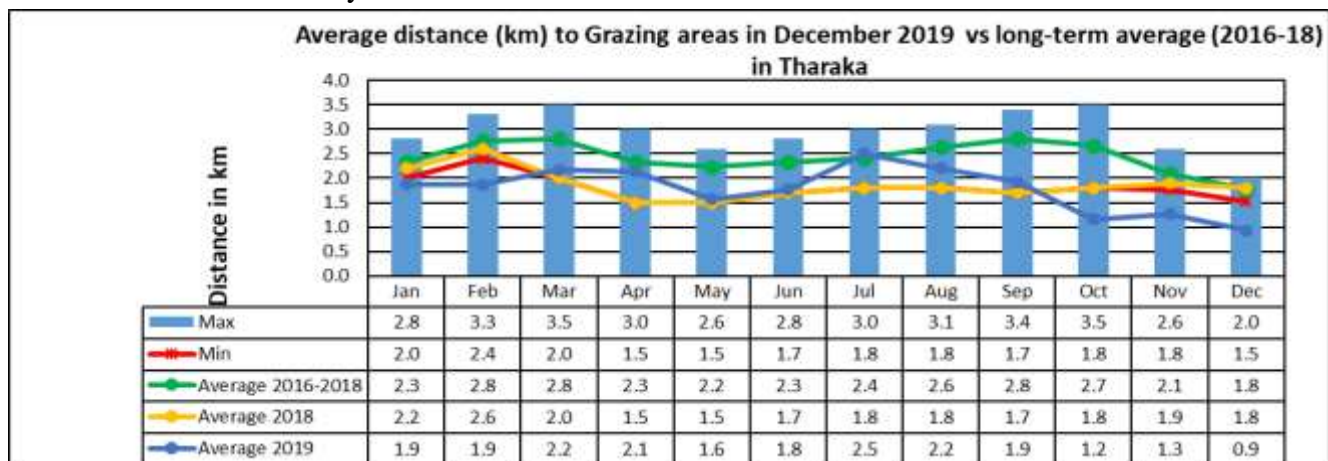


Figure 3: Grazing Distance for Livestock

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 4 below.

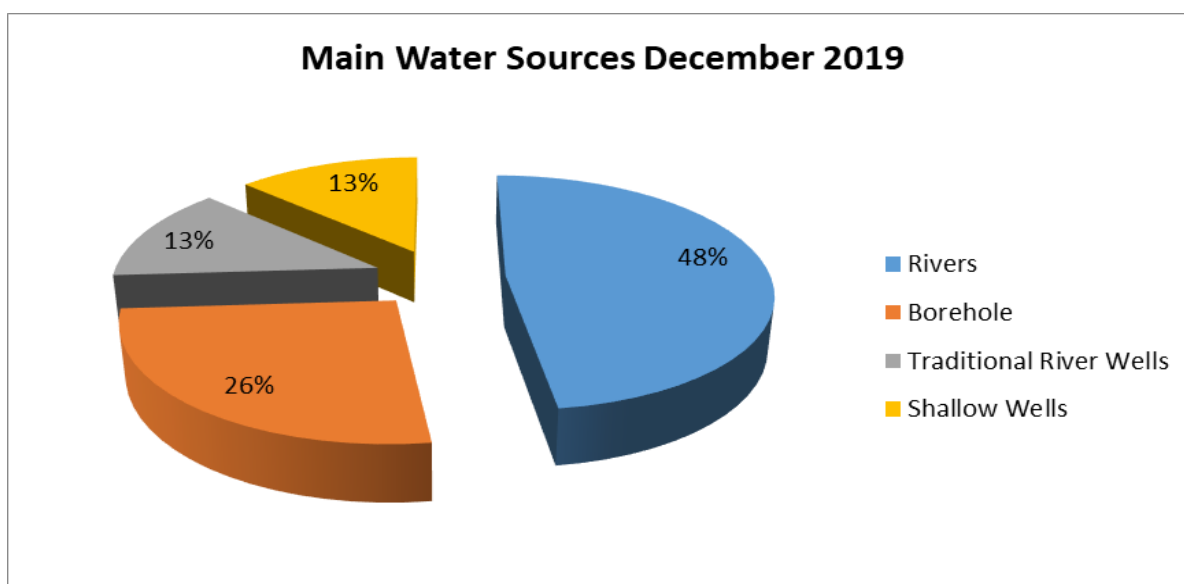


Figure 4: Main Water sources Tharaka Nithi County

2.2.2 State of Water Sources

- The state of water sources for the month of December was above normal and the trend was stable as of the previous months. The water recharge level both for the surface and underground sources were more than 100% of the usual recharge of between 80 to 100%.
- The main challenge of water availability was increased contamination of water source in Rivers, Piped water system, pans and dams hence need to intensify on water treatment.
- Status of water sources across all the Livelihood Zones could be ranked as good which is at index 6 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

2.2.3 Household Water Access

- Average Household water distance decreased from 1.9Km in November to 1.1 Km in December due to continuous recharge of water sources from the ongoing rainfall which was evenly distributed across all the livelihood Zones.
- Household water distance in Mixed Farming Zone was 1.6 Km, 1.1 Km in Marginal Mixed Farming zone while the Rain Fed Zone had the least household distance of 0.5 of a Km.
- The average distance of household access to water was higher than the long-term average of 1.5 Km for the month of December.

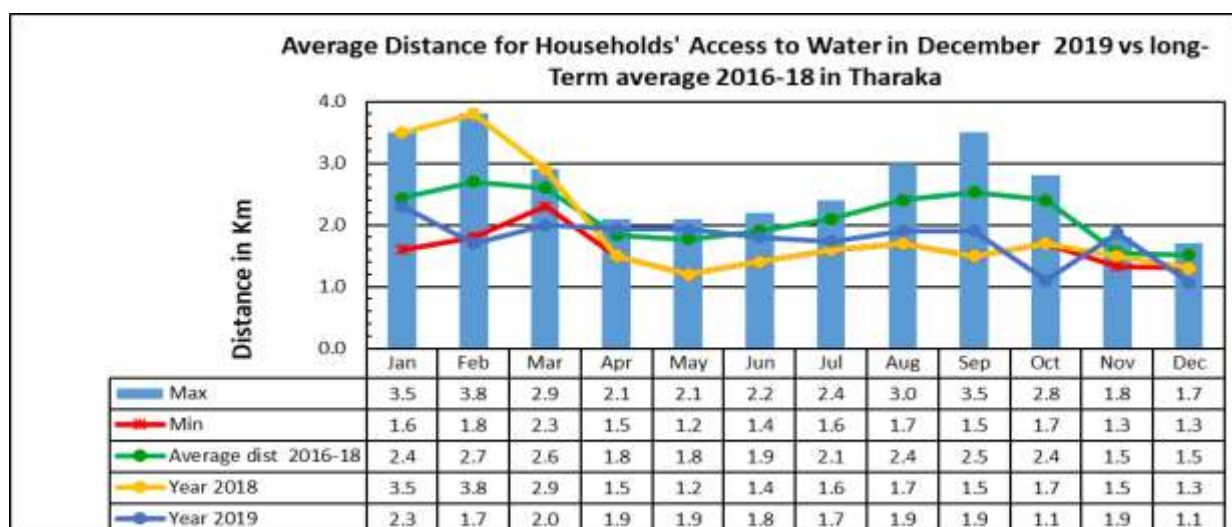


Figure 5: Household Water Distance

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.
- The fair to good livestock body condition was attributed to fair pasture and browse condition across most of the livelihood Zones and the situation was improving.
- The Livestock body condition in December for cattle and shoats was rated at index 7 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 migration reported in the month of December.
- There were also no serious cases of livestock diseases reported in the month of December.

3.1.3 Milk Production

- Milk production increased from 1.3 litres in November to 1.5litres in December. This increase in milk production could be attributed fair pasture and browse due to good weather condition from the short rains.
- All the livelihood Zones had an average production of more than a litre per household per day. Milk production per household was 18 percent higher than the 3-year average of 1.27 litre per household per day for this time of the year.

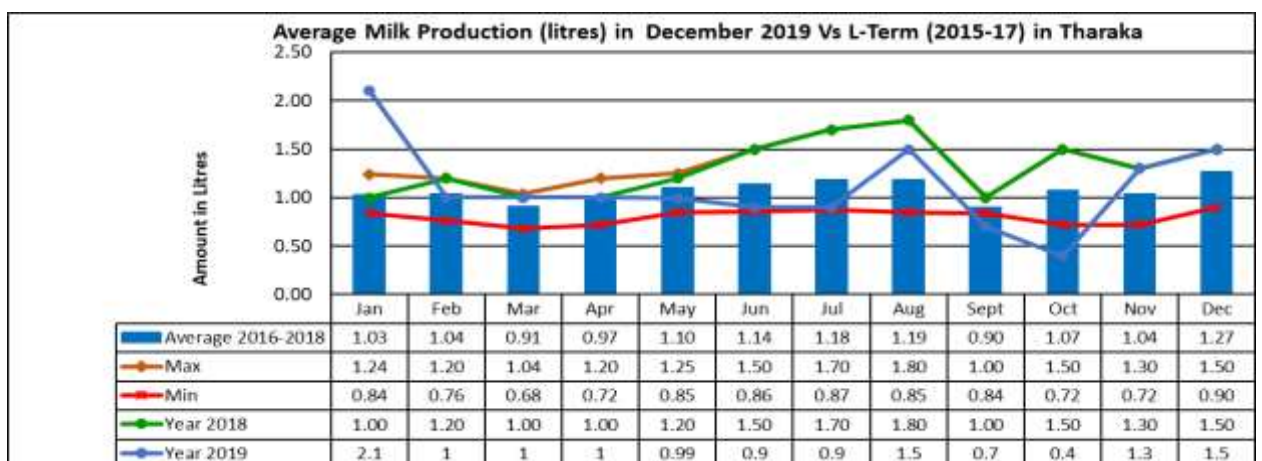


Figure 6: Milk Production Trend

3.2 Crop Production

3.2.1. Timeliness and Status of Crops

- Most of the crops were at the maturity stage of development. Most farmers had started harvesting pulses especially green grams and Cow peas while a few in the mixed Farming Livelihood Zone of Karocho and parts of the Rain fed Zone are consuming Green maize from their farms.
- Some other crops such as sorghum, millet and Pigeon peas are on their final stage of development and harvesting is expected in January and early February. Other tree crops such as mangoes are being harvested and they are substituting to income.
- The crop condition was good. Most of the crops grown during this short rainy season were Sorghum, Millet, Cow peas, green grams and maize in some selective parts of Mixed Farming and Rain Fed Livelihood Zones such as Karocho, Nkondi, Kibung'a, Tunyai and parts of Mukothima ward.

3.2.2. Pests and Diseases

- Most livelihood zones reported cases of Fall Army worms in areas of Karocho, Kathanga chini, Mukothima, Tunyai and many other areas. However, they were easily managed to high rainfall which inhibited their spread.
- Infestation of Fall Army Worms may affect crop yield in some few areas.

4.0 MARKET PERFORMANCE

4.1 Livestock Prices

4.1.1 Cattle Prices

- The average cattle price increased from Kshs. 17,783 in the month of November to Kshs. 20,208 in the month of December. The increase in cattle price could be attributed to fair pasture leading to improved cattle body condition and an increase in average cattle price.
- The Rain Fed Cropping Livelihood Zone and the Marginal Mixed Farming Zone had the highest average price of Kshs 20,500; while the Mixed Farming Livelihood Zone had the least price of Kshs 19,333. The current price was 3.91 percent lower than the three-year average of Kshs 21,031.

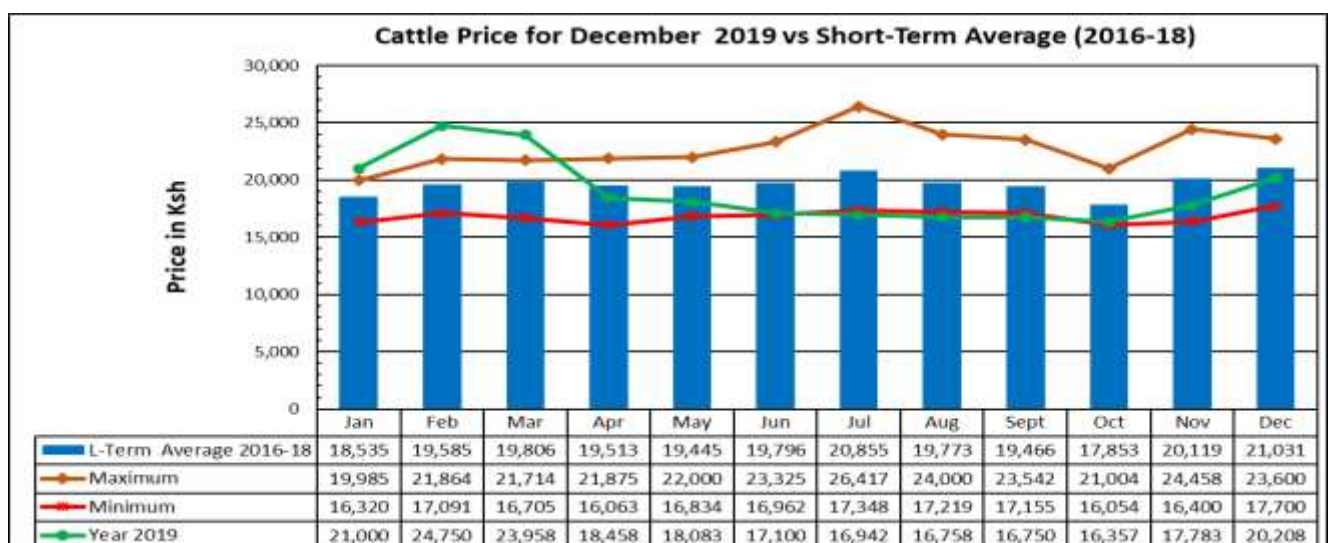


Figure 7: Cattle Price Trend

4.1.2 Goat Prices

- The average goat price increased from Kshs 3,423 in the month of November to Kshs 3,858 in the month of December. The increase in price could be attributed to improvement in goat body condition due to improvement of browse from the short rains.
- The Rain Fed Cropping Livelihood Zone had the highest price of Ksh. 4,300; Marginal Mixed Farming Livelihood Zone recorded the price of Kshs 3,850 while the Mixed Farming Zone recorded the lowest price of Ksh. 3,433.
- The average goat price was 9.95 percent higher than the three-year average of Ksh 3,509.



Figure 8 : Goat Price Trend

4.2.1 Maize Prices at Market Level

4.2 Price of Cereals and Other Food Products

4.2.1 Maize Prices at Market Level

- The average market price of a Kilogram of maize decreased from Kshs 49 per Kg in the month of November to Kshs 48 per Kg in the month of December which was almost the same as of the previous month. The high price of maize was attributed to crop failure and poor food stocks at household which was higher due to poor harvests within the county.
- Maize price was Kshs 55 per Kg in in Rain Fed Livelihood Zone, Kshs 45 per Kg in the Marginal Mixed Farming Livelihood Zone and Kshs 48 per Kg in the Mixed Farming.
- The average maize price was 29.73 percent higher than the three-year average price of Kshs 37 per Kg.

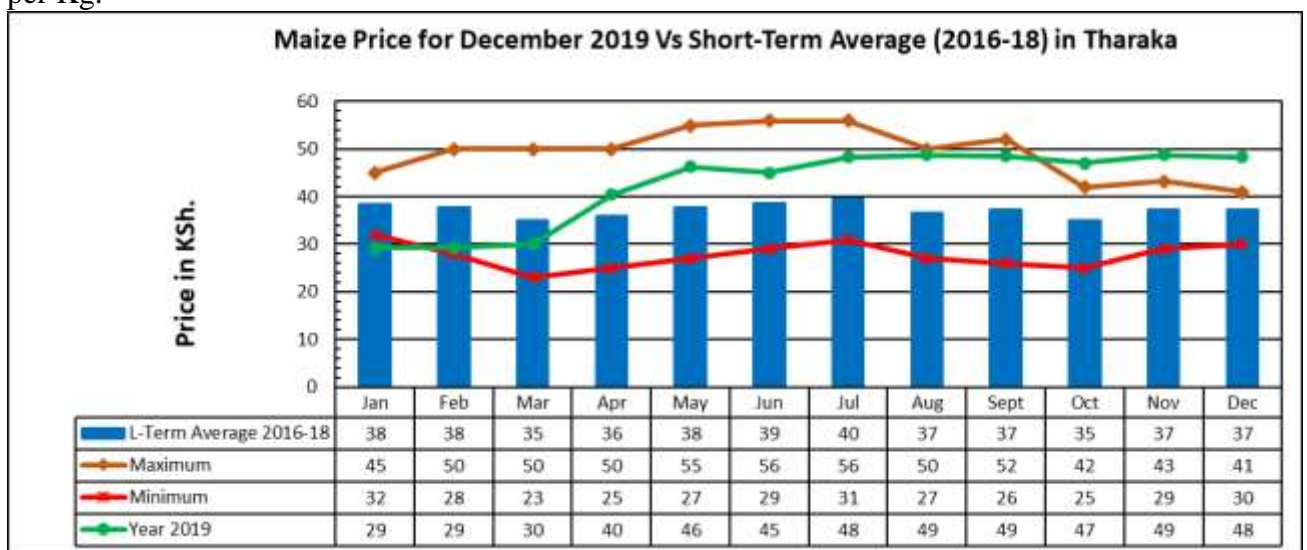


Figure 9: Maize Price Trend

4.2.2 Millet Price at Market Level

- The average market price of millet decreased from Kshs 77 per Kg in November to Kshs 74 per Kg in December which was still high. However, the decrease in price was due to the use of harvested substitute crops for food from the short rains by few households.
- The Marginal Mixed Farming Zone recorded the highest market price of Kshs 79.5/Kg, Rain Fed Zone Kshs 70 per Kg while Mixed Farming Zone recorded the least price of Kshs 65 per Kg.
- The millet price was 27.59 percent higher than the long-term average price of Kshs.58 per Kg for the month of December.

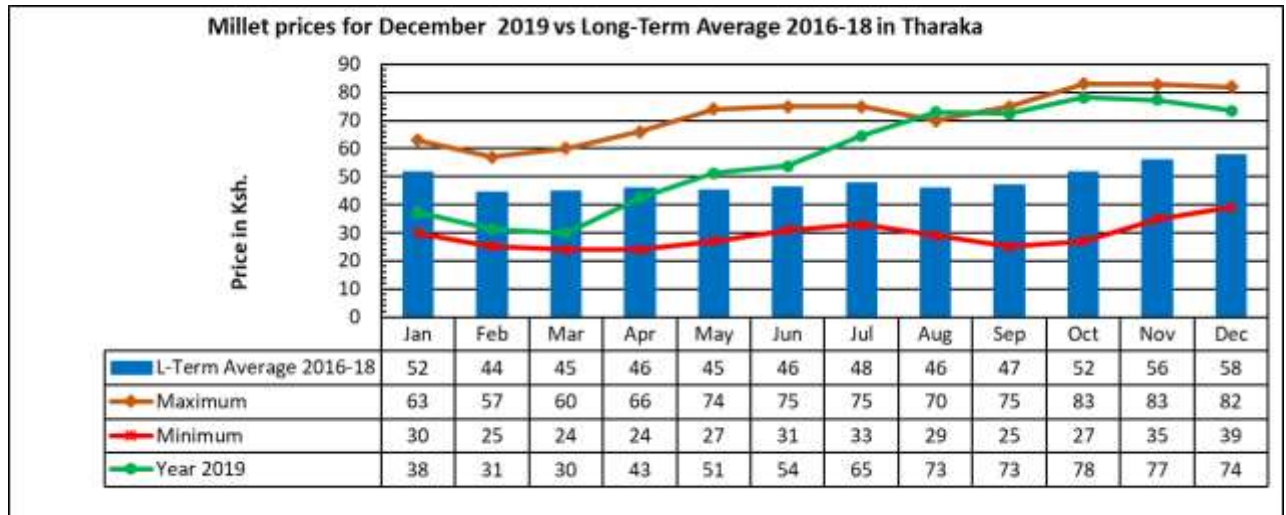


Figure 10 : Millet Price Trend

4.2.3 Terms of Trade (ToT)

- The Terms of Trade increased from 70 in November to 79.8 in December due to an increase in goat price during the month of December against a constant maize price.
- The highest ratio was recorded in the Marginal Mixed Farming at 85.56; followed by Rain Fed Cropping Zone at 78.18 while Mixed Farming Zone had the least term of trade ratio of 71.52.
- The term of trade for the period under review was 3.64 percent higher than the three-year average value of 77 during the same period.

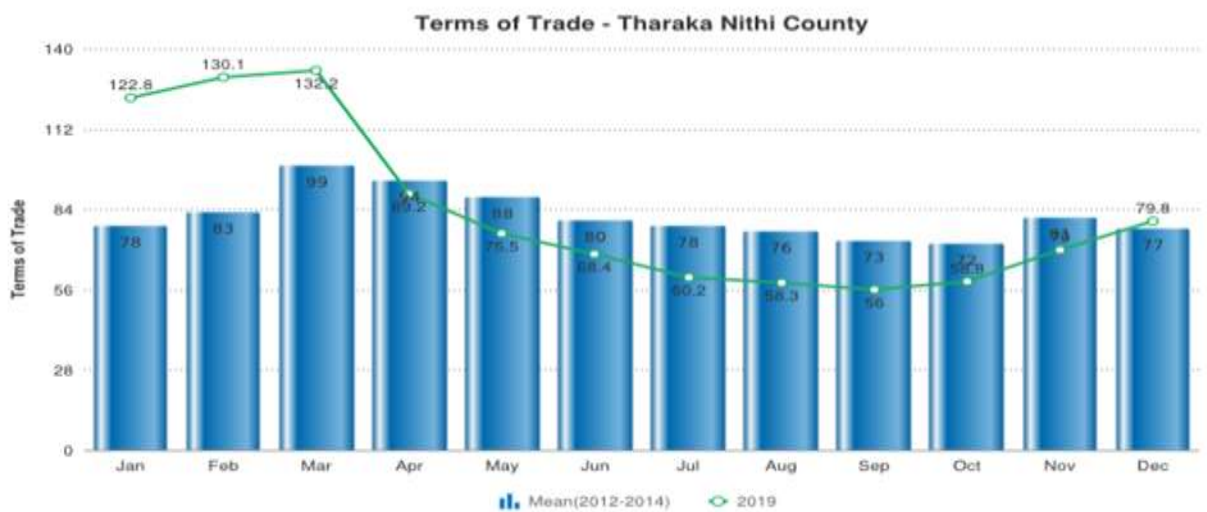


Figure 11: Term of Trade

5.0 FOOD CONSUMPTION AND NUTRITION STATUS

5.1.1 Milk Consumption

- The average milk consumption decreased from 1.1 a litre per household per day in the month of November to 1.0 a litre per household per day in the month of December which was almost the same as of the previous month.
- The average milk consumed was 31.51 percent lower than the 3-year average of 1.46 of a litre.

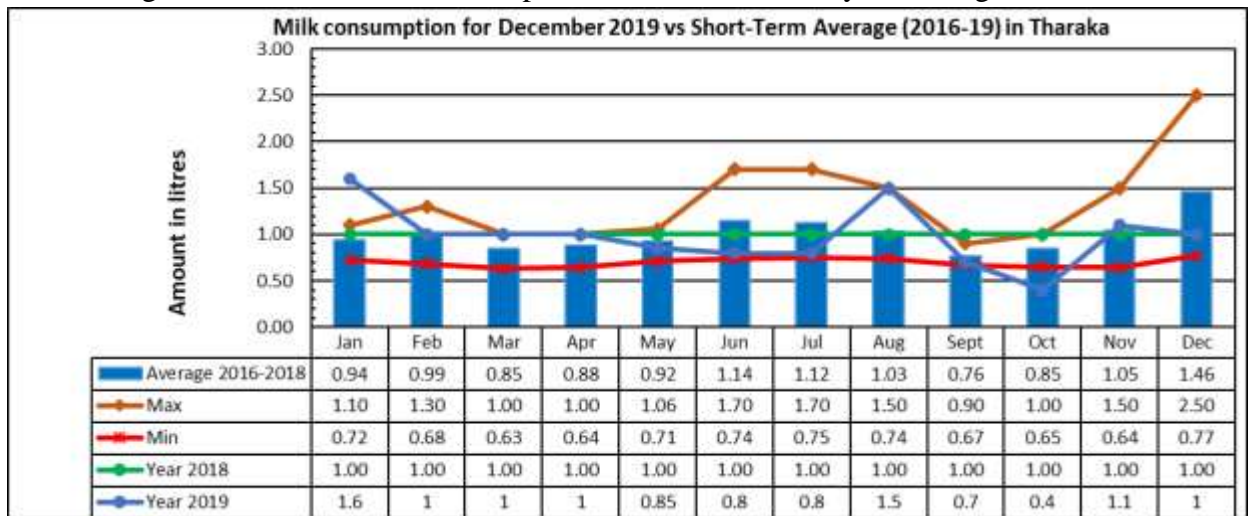


Figure 12 : Milk Consumption Trend

5.1.2 Food Consumption Score

- Proportion of households with acceptable Food Consumption Score increased from 54.47% in November to 66.13% in December as shown by the graph in fig. 12 below.
- The Food Consumption Score was almost the same as of the same month the previous year which is our base year. This indicates an improvement in household food security and diversity.

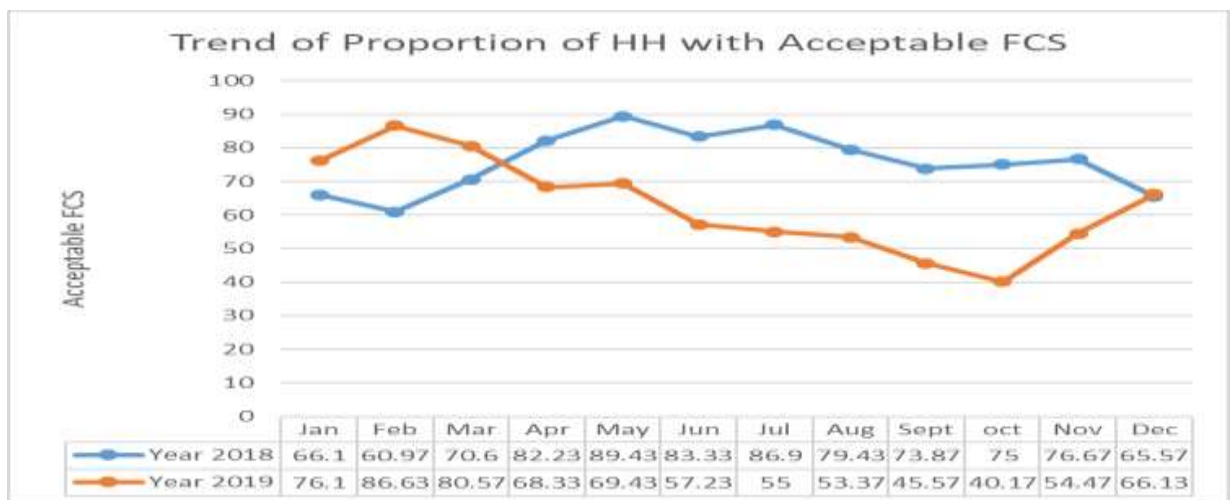


Figure 13: Trend of the Proportion of HHs with Acceptable FCS

- A higher number of Food Stressed Households were in the Rain Fed Cropping Livelihood Zone at 63.3% followed by 38.3% in the Marginal Mixed Farming while the least number of households were recorded in the Mixed Farming Livelihood Zone which were almost negligible.

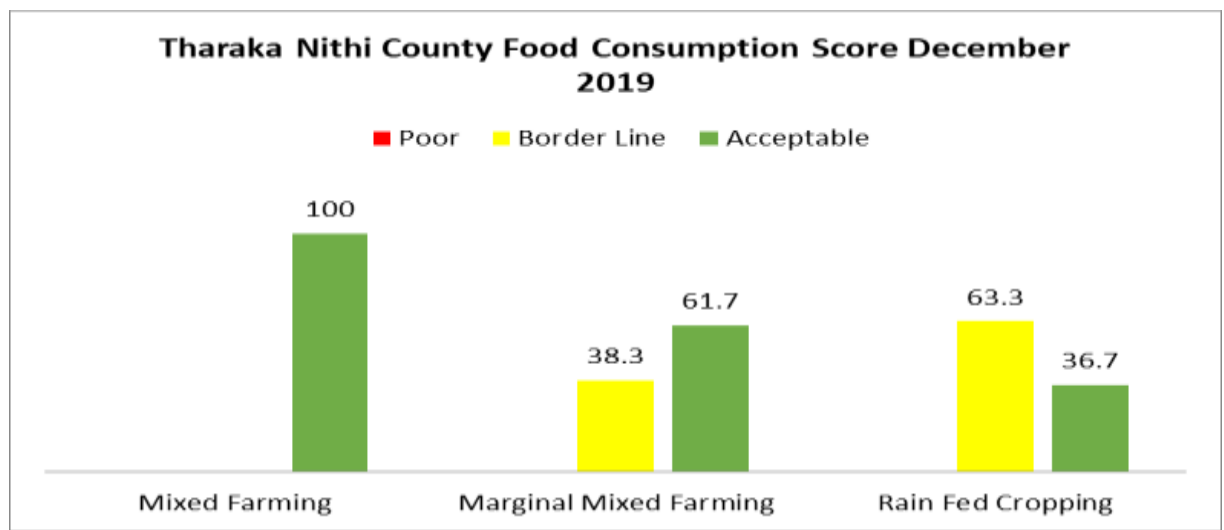


Figure 14: Food Consumption Score Chart

Table 3: Average Food Consumption Score

Period	Acceptable (%)	Borderline (%)	Poor (%)	Food Insecure HH (%)
January 2019	76.1	23.9	0	23.9
February 2019	86.6	13.4	0	13.4
March 2019	80.57	16.67	2.77	19.43
April 2019	68.33	31.67	0	31.67
May 2019	69.43	29.43	1.133	30.57
June	57.23	35	7.8	42.8
July	55	41.67	3.33	45
August	53.37	43.33	3.3	46.63
September	45.57	47.23	7.3	54.43
October	40.17	53.17	6.67	59.83
November	54.47	38.87	6.66	45.53
December	66.13	33.87	0	33.87

- 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.

5.2 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 7.4 percent in November to 7.1 percent in December which was attributed to improvement in household food security.
- The proportion of children at risk of malnutrition whose MUAC measurement was below 135mm was above the long-term average of 5.2 percent.

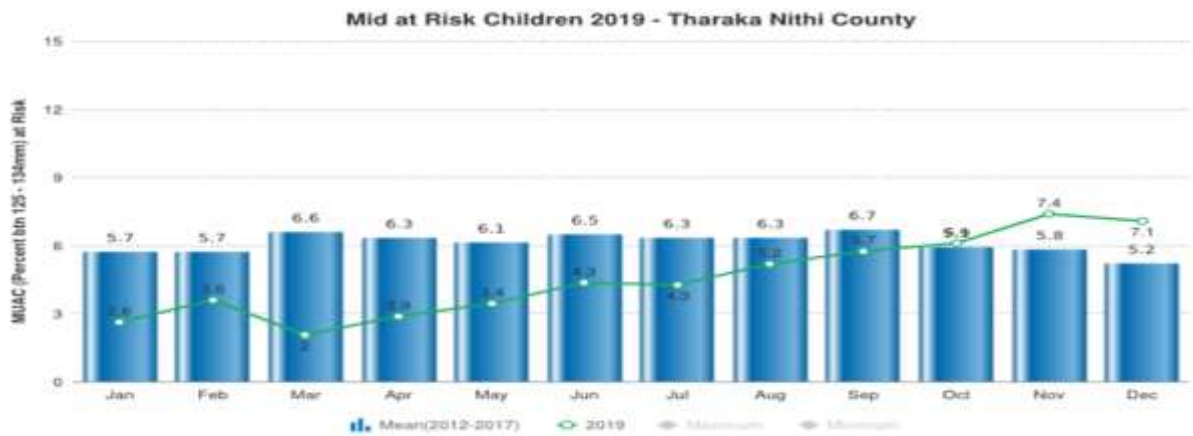


Figure 15: MUAC Graphs

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

- The Coping Strategy Index (CSI) decreased from 12.9 in November to 10.93 in December which was almost the same as of the previous month and it indicated a reduction of household stress due to lack of food or money to buy food during the month of December.
- The CSI for December 2019 was higher than that of 2018 average for December which further indicates much difficulty in obtaining food in 2019 than last year in the same period like this.

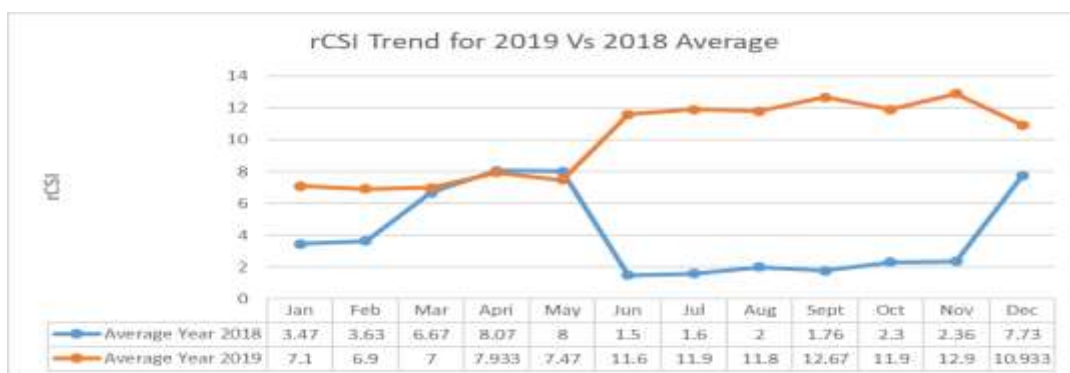


Figure 16 : Trend of CSI

- The highest CSI was recorded in the Marginal Mixed Farming zone at 22.1 followed by 10.5 in the Mixed Farming Zone while the Rain Fed Livelihood Zone recorded the least CSI of 0.2.
- 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

Ongoing Interventions

Cash Transfer by Caritus

- Caritus Organisation is supporting 680HH with Kshs 3,500 per months from 15th November during drought recovery phase to December in Kathanga Chini and Kanjoro locations during to cushion vulnerable households from the effects of drought.

Agriculture Sector

- Promotion of conservation agriculture in Tharaka North by Food Agricultural Organisation (FAO).
- Cereal enhancement programs by Kenya Cereal Enhancement Program organisation (KCEP CRAL).

Livestock

- Dairy farming of goats and cow by Upper Tana Natural Resource Management Programme and Livestock Department
- Goats upgrading for milk and meat by Upper Tana Natural Resource Management Project.
- Upgrading of local chicken by Upper Tana Natural Resource Management Project.

Water

- Construction of Manduru earth dam in Gatunga Ward.
- Rehabilitation of Ura- Kathangachini and Kamacabi water project by the county Government.
- Extension of water pipe line from Marimanti to Maragwa by Water Services Trust Fund (WSTF).
- Re-construction of Kaibonce concrete dam by Kenya Climate Smart Agricultural programme.

6.2 Food Security Prognosis

- Most of the crops were at the maturity stage of development. Most farmers had started harvesting pulses especially green grams and Cow peas while a few in the mixed Farming Livelihood Zone of Karocho and parts of the Rain fed Zone are consuming Green maize from their farms.
- Some other crops such as sorghum, millet and Pigeon peas are on their final stage of development and harvesting is expected in January and early February. Other tree crops such as mangoes are being harvested and they are substituting to income. Above average harvest is expected due to the above average rainfall.
- Rainfall received was above the long term average therefore, status of water sources is above normal with household and Livestock watering distance being within the normal ranges and the situation is likely to improve due to sufficient recharge of water sources.
- Food Stocks at households' level is likely to improve in the next 1months in all the livelihood zones.
- Markets operations are likely to improve for livestock due to fair pasture and browse which will improve livestock body condition and prices while crops prices are most likely to decrease or remain the same for the next 1 month.
- Pasture condition is fair and the condition is likely to improve leading to shorter grazing distance, increased milk production; good livestock body condition and better prices.
- Increased milk production is likely to lead to high milk consumption hence low malnutrition level amongst the under 5years.
- Terms of Trade is fair and is likely to increase significantly in favour of the livestock farmers and the trend is likely to continue for the next 1month.

- Households in the County are likely to be Food sufficient in the next 2 months during the harvesting period.

7.0 Recommendations (Response interventions May to December 2019)

- The county Government and different stakeholders should prepare to concentrate on preparedness activities geared towards resilience to propel household towards food security in the next 2 months.

Sector	Tharaka Nithi County	Target areas hotspot (Wards/Villages)	Beneficiaries
Water	Water harvesting and Storage	Kamanyaki, Maragwa, Mukothima Kathangachini locations and all the other locations.	County wide
	Capacity building of Wruas & Surveillance of Rivers to stop illegal water abstractions	Lower Thangatha, Upper Thangatha (Part of Gatunga Ward and Mukothima Ward)	2,000 People
	Repair of Rock Catchments	In Gatunga Ward: Mukuruti Kanyi, Manduru, Kiaramara, Muturu, Nchegei Rock Catchment	4,000 people, 500 cows, 2,000 goats, 1,000 sheep 200 donkeys
	Renovation of Earth Dams	Gankamba, Nyamboni, Kiaramara, Manduru and Ngaani	5,000 people 1,000 cows 10,000 goats 500 donkeys
	Restocking for cattle	Gatunga Market, Kathangachini, Chakariga Market	10,000 people
	Vaccination of Goats and sheep against CCPP	Marimanti ward, Kithigiri, Kibienga, Nkondi ward Kereria, Gachugini	30,000 shoats
	Vaccination of Goats and sheep against sheep & goat pox	Kamanyaki, Kathangachini, Chakariga, Marimanti	35,000 shoats
	Vaccination of dogs against Rabies	Gatue ward, Mukothima ward	1000 dogs
Agriculture	Provision of pesticides and capacity of farmers on methods of controlling Fall Army Worms	Karocho, Mukothima, Tunyai, Kibunga	Affected Farmers
	Provision of planting farm inputs e.g. Planting seeds, fertilizer, Pesticides simple implements	6,000 HH in Tharaka North and South Sub Counties in September.	3,000 HH in Tharaka south and 3,000 HH in Tharaka North.
	Integrated outreach services in 10 hard to reach areas.	Tharaka North and Tharaka South Sub county.	24,000 under five children , pregnant and lactating women
	Provision of sachets of	Tharaka North and South Sub-Counties	12,000 HHs

Health and Nutrition	water treatment kits per month for 3 months		
	Provision of food supplement for malnourished children and mothers	Tharaka North and South	20 facilities each receiving 2 bags of 90kg fortified Health supplements.
Coordination	Conduct 7 CSG meetings at county and Sub County level	Tharaka North & South	40 members