NATIONAL DROUGHT MANAGEMENT AUTHORITY
TANA RIVER COUNTY
DROUGHT EARLY WARNING BULLETIN FOR SEPTEMBER 2017

A Vision 2030 Flagship Project

SEPTEMBER EW PHASE

Drought Situation & EW Phase Classification

Biophysical Indicator

The County is currently experiencing moderate vegetation deficit.

Rainfall:

- Negligible showers were received in this month. The county received this off-seasonal showers along the coastal regions of Kipini and recorded an average of 4.4 mm which is normal for this time of the year.
- **The vegetation condition.** The 3-month VCI indicates that the County is currently experiencing moderate vegetation deficit recording a VCI of 24.1. The values slightly reduced when compared to the values of the previous month where the VCI was at 24.31. The vegetation condition remains poor in the county.

Socio Economic Indicators (Impact Indicators)

Production indicators

- Most of the livestock in Tana River County have migrated to Tana Delta and to the neighbouring counties (Lamu and Kitui County). The other stocks have remained along river Tana.
- Pasture and browse conditions remains poor.
- Livestock body condition also remains poor.
- Milk production at household level reduced and remained below the normal range at 1.5 litres compared to the last month's which was at 2 litres.

Access indicators

- Milk consumption at household level also reduced to 1 litre compared to the last month where it was at 2 litres. Milk consumption remains below normal.
- The average livestock distance to the water sources remains above normal at 11 km compared to the last month where it was at 14 km. The return distance remains high compared to the normal distance of 8 km.

Utilization indicators

The percentage of children under the risk of malnutrition in this month increased and remains high at 26 compared to that of August which was at 24.2. The poor nutritional status is attributed to low milk production and poor agricultural production in the livelihood zones.

Early Warning (EW) Phase Classification

LIVELIHOOD ZONE	EW PHASE	TRENDS
Pastoral	Alarm	worsening
Marginal Mixed Farming	Alarm	worsening
Mixed Farming	Alarm	worsening

Biophysical Indicators	Value	Normal ranges
rainfall (% of Normal)	4.4 mm	> 4 mm
3-Month VCI	24.1	>35
State of water sources	2	5

Production indicators	Value	Normal ranges
Livestock Migration Pattern	Not normal	Normal
Livestock Body Conditions	poor	Good
Milk production	1.5 litres	>51 Litres
Livestock deaths (from drought)	Death reported	No death
Crops area planted (%)	Nil	67%of LTA

Access Indicators	Value	Normal ranges(LTA)
Terms of Trade (ToT)	52	63
Milk Consumption	1 ltrs	>32.58 Litres
Average return distance to the water sources	11 km	8 km

Utilization indicators	Value	Normal ranges
MUAC(% at mid-risk of malnutrition)	26%	<12(%)

▪ 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

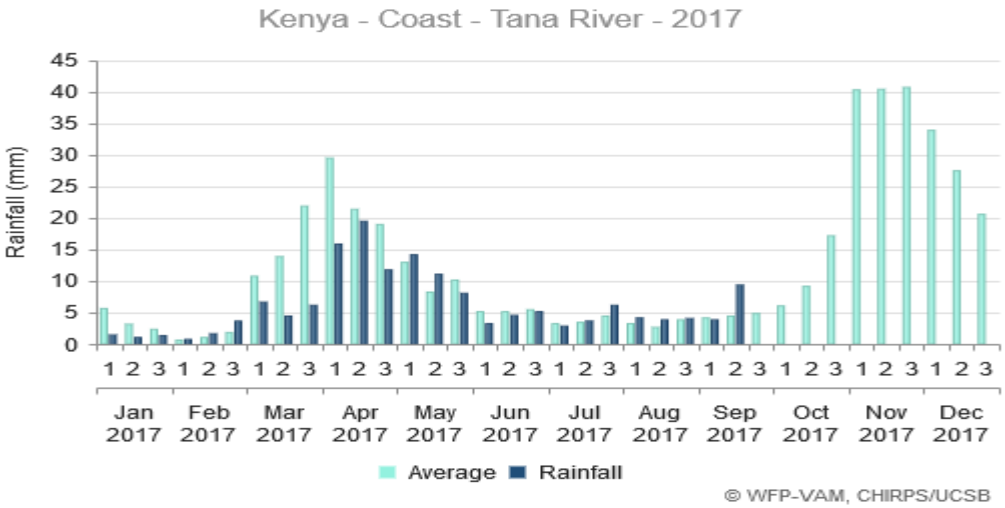
1. CLIMATIC CONDITIONS

1.1 Rainfall performance

1.2 AMOUNT OF RAINFALL AND SPATIAL DISTRIBUTION

Rainfall situation data

- Negligible off-seasonal showers were received in this month.
- The county received an off seasonal downpour in the coastal regions of Kipini recording an average of 4 mm of rain in this month. Much of these showers were experienced in the second dekad of this month as shown in the graph below.
- The spatial and temporal distribution was very poor and this amount was all received in one day (second dekad). The third dekad of the month remained dry
- The graph below shows the rainfall amounts received and compares it to the normal averages.



1.3 AGRICULTURAL DROUGHT

- The3-M Vegetation Condition Index indicates that the county is experiencing moderate vegetation deficit recording a VCI of 23.87 by the end September as Compared to the month of August which stood at 24.1. The VCI slightly reduced in this month and this is attributed to the ongoing drought conditions. In comparison to same time in the previous years, the vegetation conditions are below the normal average**.**
- The county experienced moderate drought conditions in the months of July, August and September after the continued severe vegetation conditions previously experienced in the months of January to June in this year.
- The matrix below show the vegetation condition for this month;

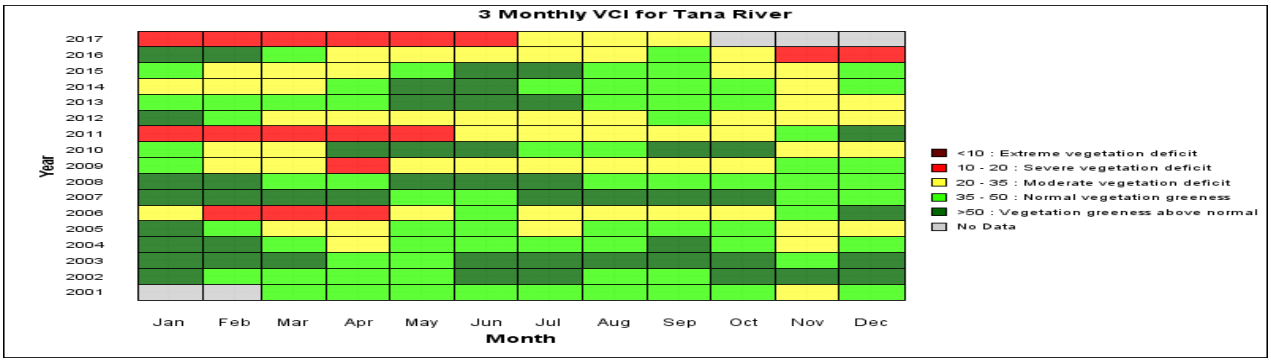


Fig. 2 Source: University of Natural Resources and Applied Life Sciences (BOKU), Institute of Surveying, Remote Sensing and Land Information

- The graph below show the 3-month VCI trend for September and compares it to the same time in 2016 values; the long term average, the maxima and minima.
- The vegetation condition in this month shows the county vegetation condition in September was 33% below the 2016 value and 42 % below the average.
- In this month, the VCI depicts a decreasing trend and this is attributed to the worsening drought conditions.

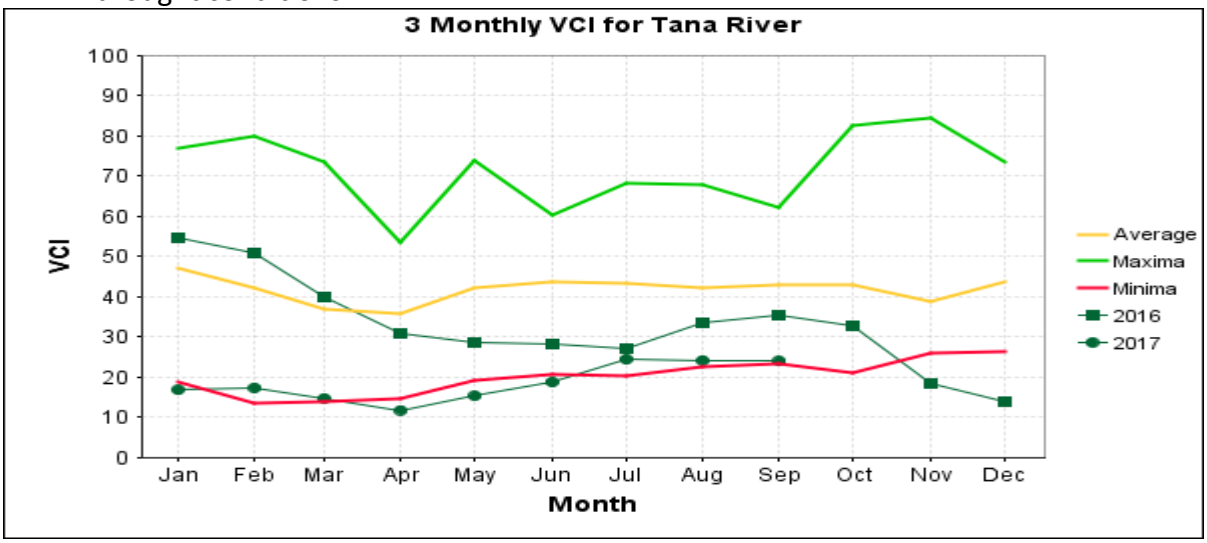


Fig. 3 Source: University of Natural Resources and Applied Life Sciences (BOKU), Institute of Surveying, Remote Sensing and Land Information

Sub county VCI

All the three Sub Counties (Bura, Garsen and Galole) are currently experiencing moderate vegetation deficit.

Galole

The3-month Vegetation cover for Galole is currently at 22.5 compared to last month's VCI of 22.91. The vegetation condition slightly reduced in this month when compared to the previous month. The VCI of 22.5 indicates moderate vegetation deficit within Galole sub-county.

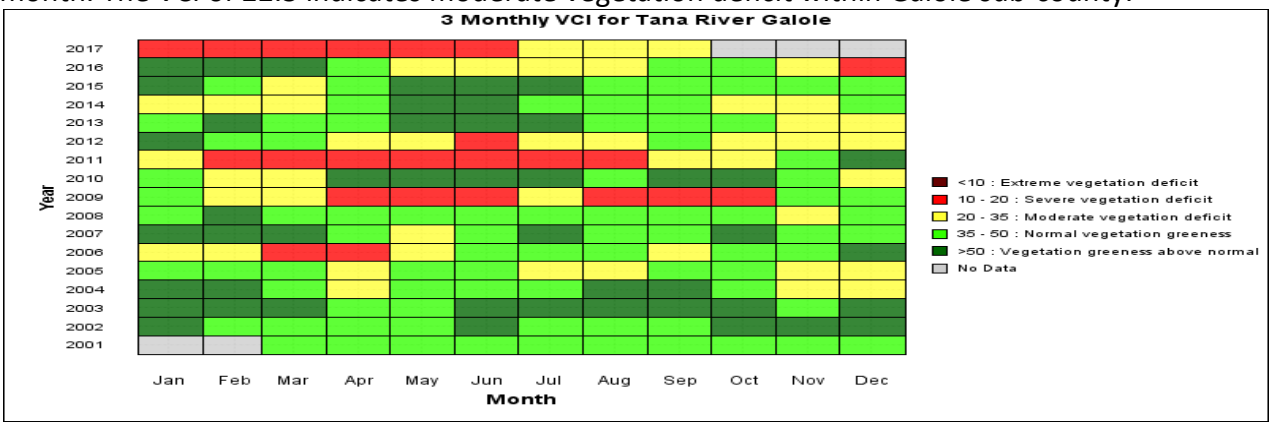


Fig. 5 Source: University of Natural Resources and Applied Life Sciences (BOKU), Institute of Surveying, Remote Sensing and Land Information

Garsen

The 3 Month VCI for Garsen is currently at 23.28 compared to last month's VCI of 24.13. The VCI in this sub county also slightly reduced in this month. The VCI of 23.28 indicates that the sub-county is experiencing moderate vegetation deficit in this month.

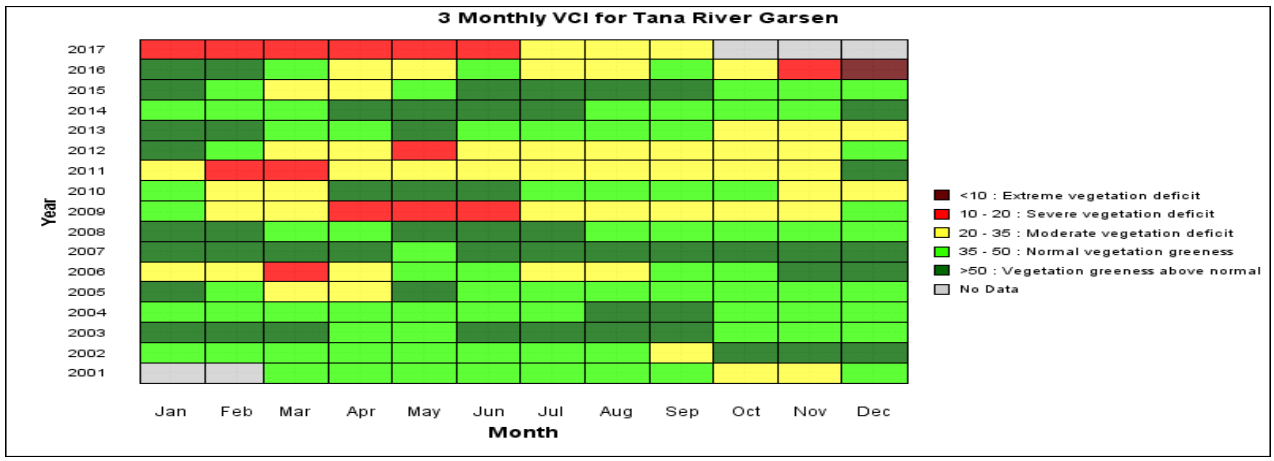


Fig. 6 Source: University of Natural Resources and Applied Life Sciences (BOKU), Institute of Surveying, Remote Sensing and Land Information

1.3Field Observations (Pasture and Browse Conditions)

Quality

- The pasture and browse quality in the county remains poor. The county received negligible amounts of the off seasonal downpours which could not sustain pasture regeneration.
- The browse and pasture conditions in Tana North and mainly the hinterland are very poor; this region is totally dry and cannot keep up the grazers. The browse condition in these regions is also poor.
- In Tana Delta, the qualities are currently fair due to the little showers experienced from the off seasonal showers received up to the second dekad of September.
- Generally the browse quality and conditions are better when compared to the pasture in the county.
- The conditions in the delta region continues deteriorating due the high livestock influx rate
- These conditions remain below the normal during this time of the year.

Quantity

- The quantity of Pasture and browse within the County is currently very poor compared normal at this time of the year.
- In the pastoral zone, pasture is expected not to last for more than a month compared to normal duration of 3months, while browse is expected to last for 1 month compared to normal duration of 4months.
- In the marginal and marginal mixed zones the pasture is expected to last for 1 month compared to a normal situation of 3 months, while browse is also expected to last for 1 month compared to a normal situation of 4 months
- The overall vegetation conditions in the county are poor and cannot sustain the livestock for more than 1 month if the present conditions prevail.

1.4 WATER RESOURCE

1.4.1. Sources

- Most of the communities within the pastoral, Marginal mixed and the Mixed farming livelihood zones depend on River Tana, traditional wells and pans for domestic and livestock water consumption.
- Settlements along River Tana are less water stressed, whereas, water scarcity is still a predicament in the hinterland (pastoral livelihood zone).

- The households in the pastoral livelihoods zones are covering longer distances to fetch water when compared to the normal and this situation is expected to worsen with ongoing drought conditions.

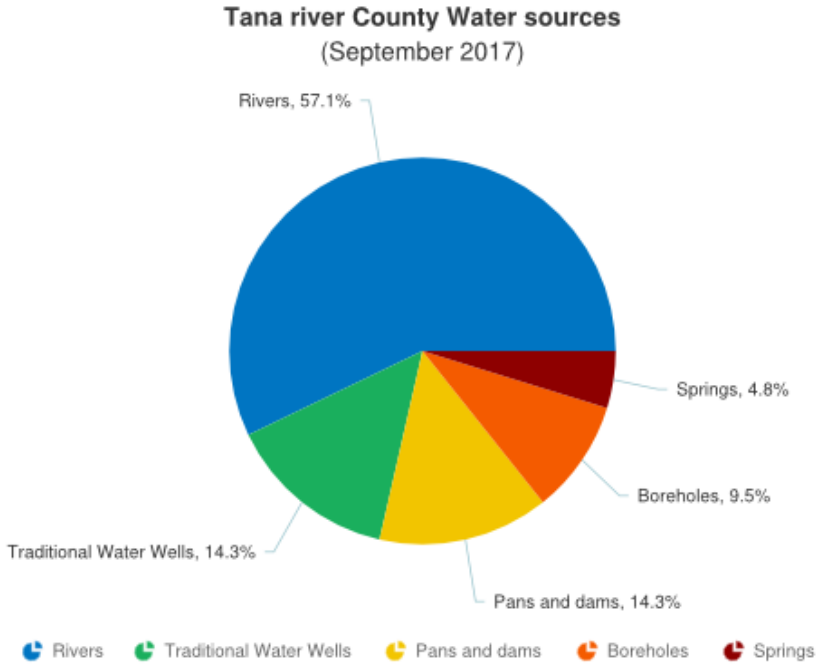


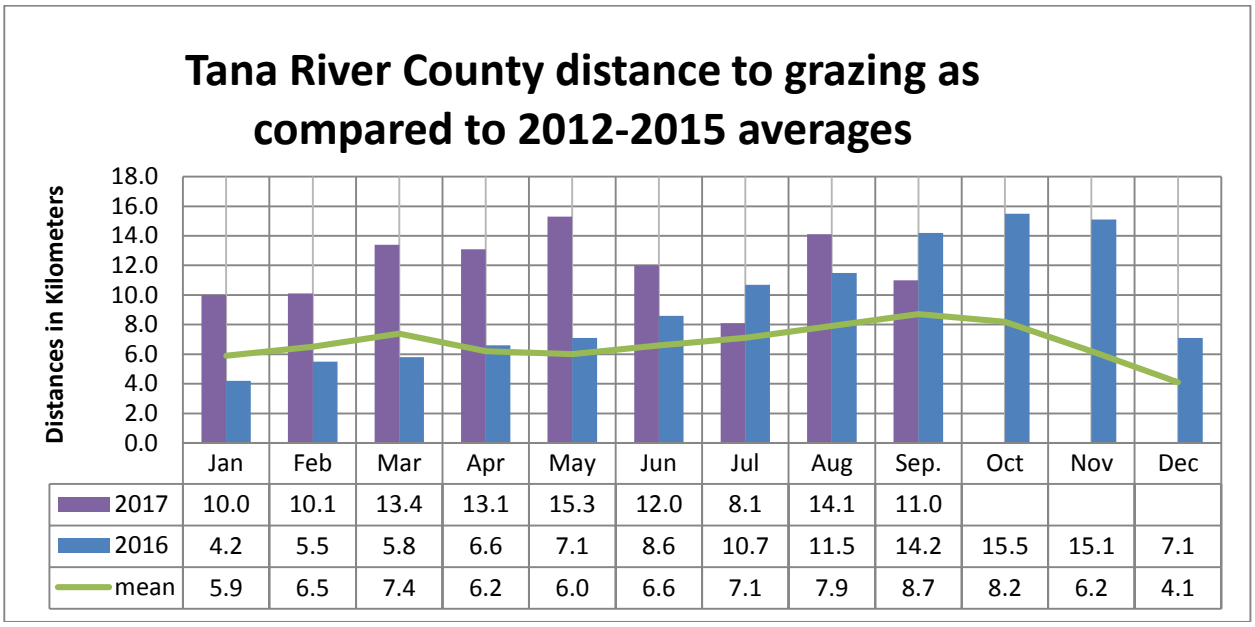
Fig 7.the figure above shows the different water sources in the county by the end of September 2017. The main community water sources in the county are currently; River Tana, traditional wells, pans and dams.

1.4.2. Household access to Water

- The average return distance from the households to the main water sources in September was 5 kilometres.
- In comparison to August where distance covered from the households to the main water sources was 5 Kilometres. The distances remained constant in this month.
- Most of the H/H in the pastoral livelihood zones depends on the traditional wells and pans for their water needs.
- The households within mixed livelihood zones take approximately 2-3 hours to reach water points compared to households within Pastoral livelihood zones which take 5-6 hours to water points.
- The current distances are above normal in this season of the year.

1.4.3. Livestock access to water

- The average distances covered by livestock from the grazing areas to main water sources in the month of September were 11 kilometres. .
- In comparison to the month of August where the livestock covered 14 kilometres, the distances covered by the livestock slightly reduced in this month compared to the normal.
- This is attributed to the little recharge in the major water sources (pan) from the off seasonal rain that was experienced for only one day in the county (during the second dekad of this month.)
- Most of the communities mostly depend on River Tana to provide water to the livestock.
- The distance covered by livestock to access water is above the mean at this time of the year.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep.	Oct	Nov	Dec
2017	10.0	10.1	13.4	13.1	15.3	12.0	8.1	14.1	11.0			
2016	4.2	5.5	5.8	6.6	7.1	8.6	10.7	11.5	14.2	15.5	15.1	7.1
mean	5.9	6.5	7.4	6.2	6.0	6.6	7.1	7.9	8.7	8.2	6.2	4.1

Fig 8 ***n=450 Households***

SOCIO-ECONOMIC INDICATORS

2.0 PRODUCTION INDICATORS

2.1.1 Livestock Migration Patterns

- Most of the animals especially the bovines have migrated towards the delta region of Tana delta Sub County.
- Livestock influx has already been witnessed in Tana Delta region and this is expected to continue thus likely to create a conflict occurrence between the farmers and the pastoralists.
- Currently about 85% of cattle have migrated to Tana delta region and the migration into Lamu, Kitui and Kilifi counties also continues.
- The county is also a host of animals from North Eastern which are on Migration.

2.1.2 Livestock Body Condition

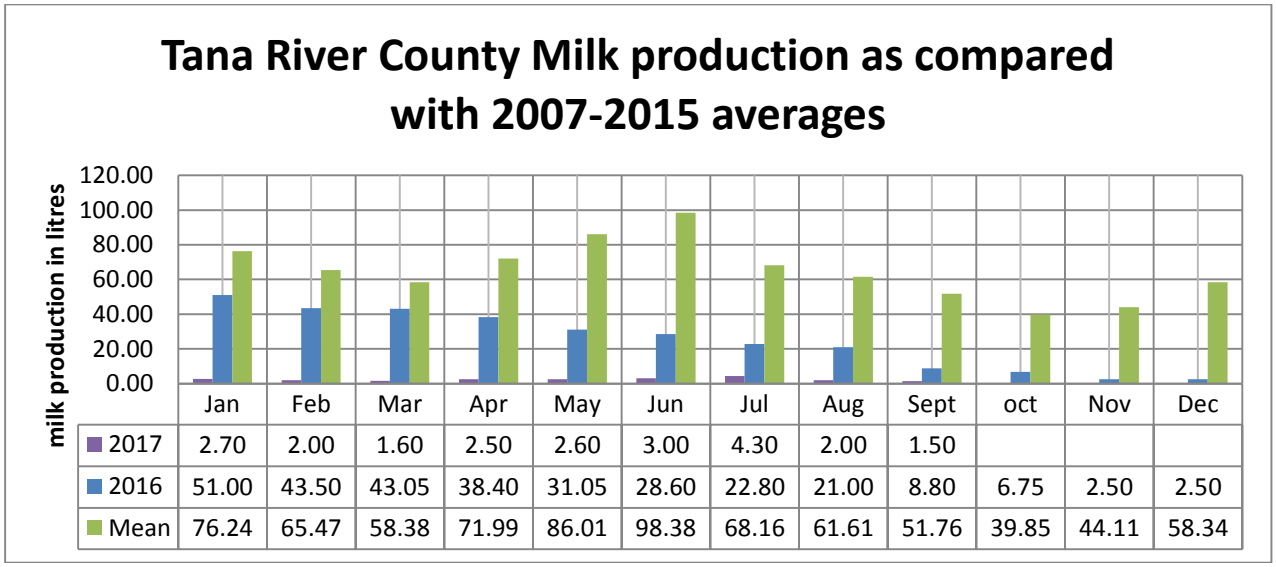
- Livestock body condition for cattle is poor in all livelihood zones in the county; while that of goats and shoats is deteriorating in the pastoral zone as browse and pasture amounts continues to reduce and water trekking distances increasing.
- In the mixed and marginal mixed zones the animal body condition is also poor and the condition is expected to deteriorate if the current conditions prevail.
- The body conditions of all these livestock species are deteriorating at a high rate. This is attributed to the scarcity of pasture and also the longer distances covered by livestock from the grazing area to the water source.
- Poor livestock body condition has led to reduced productivity hence reduced milk for consumption and for sale. This ultimately reduces household income. These conditions affect the milk prices thereby making it unaffordable to the poor households.

2.1.3Livestock Diseases

The most prevalent diseases in Tana River County are vector borne like Trypanosomiasis, tick borne diseases, heart water and Babesiosis and Helminthiasis. Fleas and ticks infestation has been evident in most stock.

2.1.4 Milk Production

- On average the milk produced per household within Tana River County was 1.5 litres in the month of September. The amounts decreased in this month when compared to the month of August which was at 2 litres.
- In comparison to the long term mean, the current average in milk production is below normal average during this time of the year.
- This is attributed to the poor livestock body condition and unavailability of pastures and browse for the livestock. Besides that, the longer distance they trek in search of pasture and water also affects the production amounts.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	oct	Nov	Dec
2017	2.70	2.00	1.60	2.50	2.60	3.00	4.30	2.00	1.50			
2016	51.00	43.50	43.05	38.40	31.05	28.60	22.80	21.00	8.80	6.75	2.50	2.50
Mean	76.24	65.47	58.38	71.99	86.01	98.38	68.16	61.61	51.76	39.85	44.11	58.34

Fig 10***n=450 Households***

2.1.5 Livestock deaths

- No livestock death has been reported in this month.

2.2 Rain fed Crop Production

- The main crops grown under rain fed production are maize, green grams, cowpeas and water melon. Other major crops include mangoes, bananas and tomatoes.
- The little acreage was achieved this time was in mixed, marginal mixed farming zone whereas in the pastoral livelihood zone no planting/cultivation was done because there were no rains.
- Currently, there are no food stocks available at the household level in all the livelihood zones and heavily depend on purchased foodstuff and relief food from the county and national governments.

2.2.1 Stage and Condition of food Crops

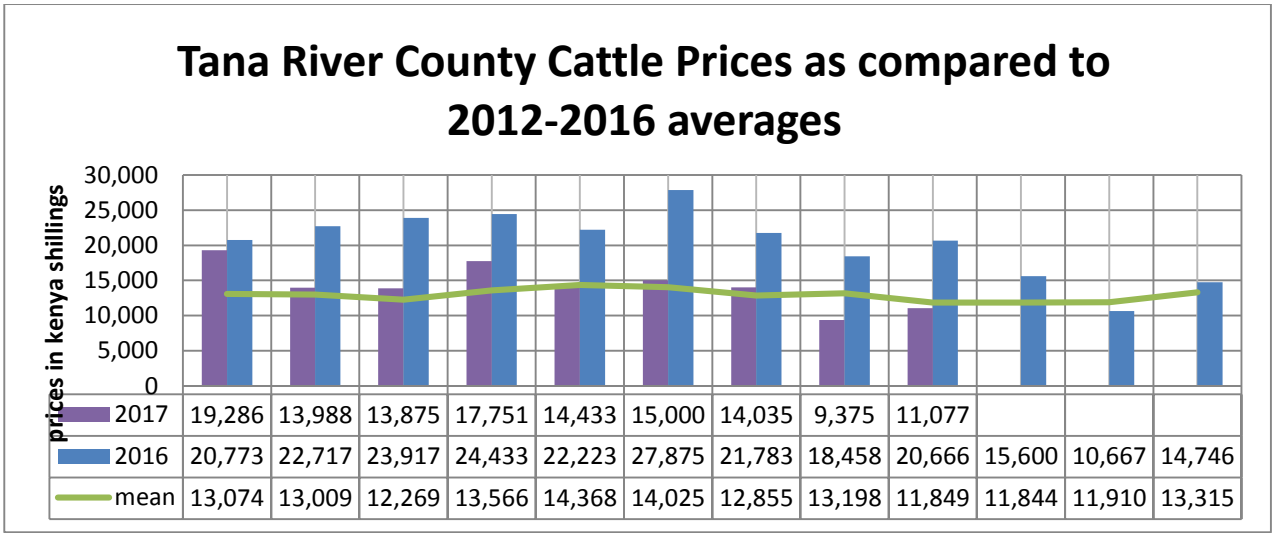
Subsistence farms in regions along the River Tana planted maize, cowpeas and green grams. These Crops were harvested in Nanighi, Makere and Kipini regions. The farmers are now cultivating their land in anticipation of the short rains

ACCESS INDICATORS

3.1 Livestock Prices

3.1.2 Cattle Prices

- The average price of a mature 3 year old bull in the month of September was Ksh. 11, 077. In comparison to the month of August, where the price of a 3 year old mature bull was Ksh. 9,375, the prices in September slightly increased in this month.
- The increase in the cattle prices is attributed to the market dynamics and also the expected seasonal rains making the herders to hold back the livestock in expectation of a recovery after the rains.
- The current cattle price of Ksh. 11, 077 is below normal at this period of the year as shown on the graph below.

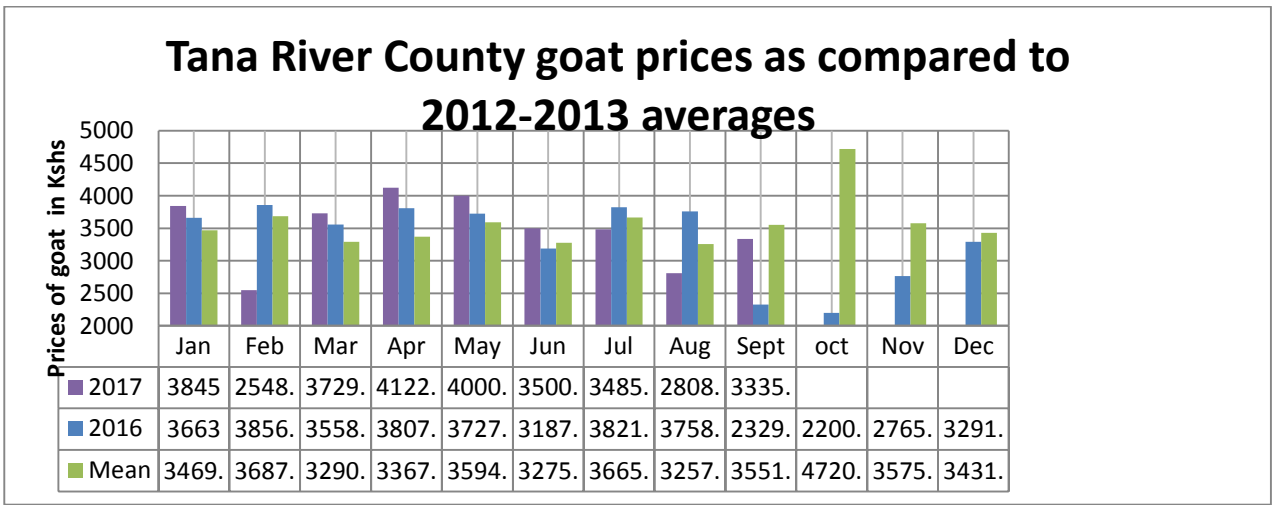


2017	19,286	13,988	13,875	17,751	14,433	15,000	14,035	9,375	11,077		
2016	20,773	22,717	23,917	24,433	22,223	27,875	21,783	18,458	20,666	15,600	10,667	14,746
mean	13,074	13,009	12,269	13,566	14,368	14,025	12,855	13,198	11,849	11,844	11,910	13,315

Fig 11*n=450 Households*

3.1.3 Goat Prices

- The average price of a medium size goat in the month of September was Kshs.3335. In comparison to the month of August where the average price of a medium size goat was Ksh. 2808. The prices in September slightly increased. The price variability is attributed to the market dynamics and also the expectation of the short rains.
- The current goat price of Ksh.3335 remains below the normal at this period of the year as shown on the graph below.

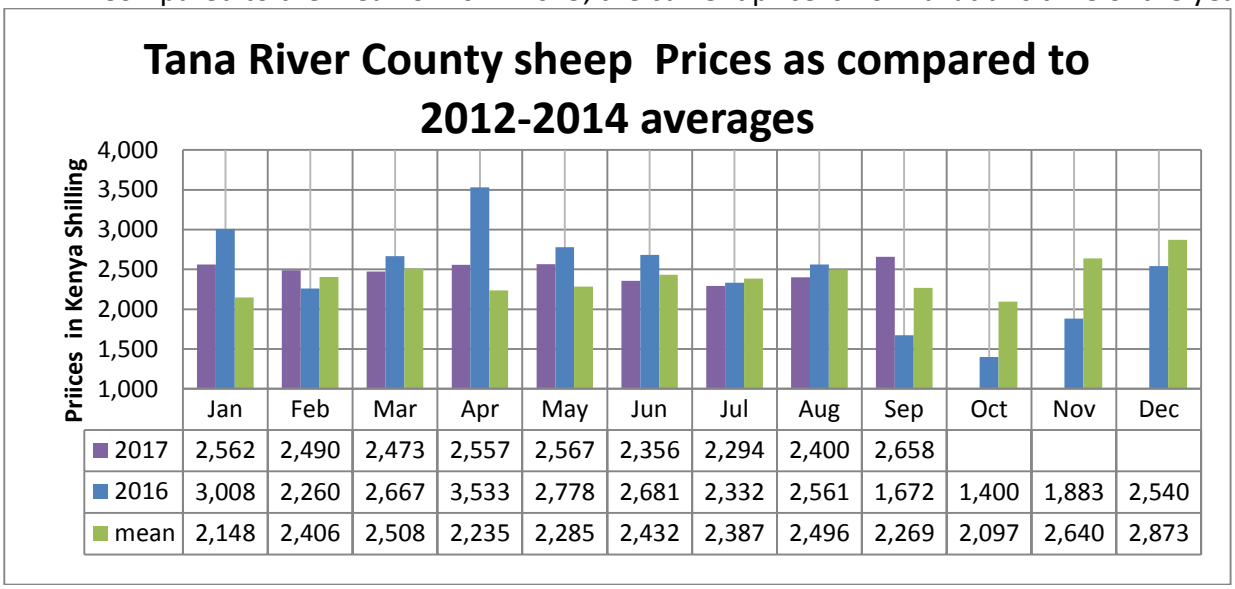


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	oct	Nov	Dec
2017	3845	2548.	3729.	4122.	4000.	3500.	3485.	2808.	3335.			
2016	3663	3856.	3558.	3807.	3727.	3187.	3821.	3758.	2329.	2200.	2765.	3291.
Mean	3469.	3687.	3290.	3367.	3594.	3275.	3665.	3257.	3551.	4720.	3575.	3431.

Fig 12*n=450 Households*

3.1.4 Sheep Prices

- The average price of a sheep in the month of September was Kshs.2, 658. The prices slightly increased in September when compared to that of the month of August which was at Ksh.2400. This is attributed to the market dynamics and also the expectation of a recovery from the awaited seasonal rains.
- Compared to the mean of 2012-2015, the current price is normal at this time of the year.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2017	2,562	2,490	2,473	2,557	2,567	2,356	2,294	2,400	2,658			
2016	3,008	2,260	2,667	3,533	2,778	2,681	2,332	2,561	1,672	1,400	1,883	2,540
mean	2,148	2,406	2,508	2,235	2,285	2,432	2,387	2,496	2,269	2,097	2,640	2,873

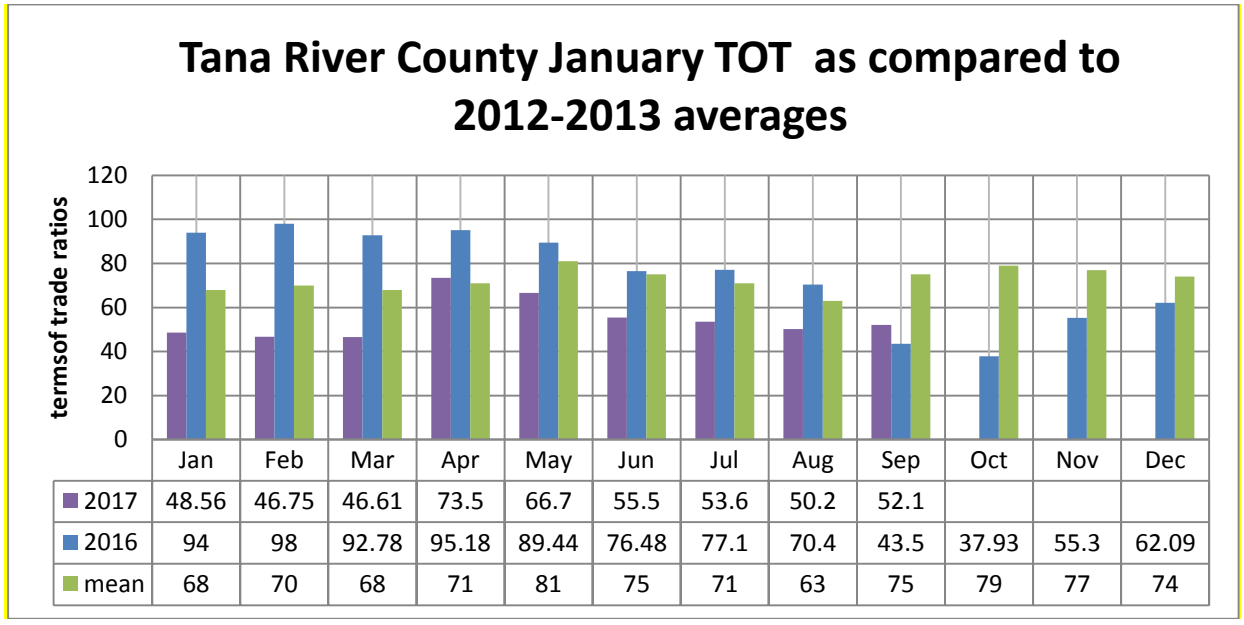
Fig 13*n=450 Households*

3.1.5 Milk Prices

Currently milk is retailing at an average of Kshs.85 per litre. The prices increased in September as compared to the month of August which recorded a price of Ksh 80 per litre. This milk price remains above the average prices recorded during this time of the year.

3.1.6 Terms of Trade

Currently the terms of trade are 52 Kg of maize for a goat. Compared to the month of August which recorded an average of 50.2, the terms of trade slightly increased in this month. The current terms of trade is below the long term mean of 75 Kg for a goat.



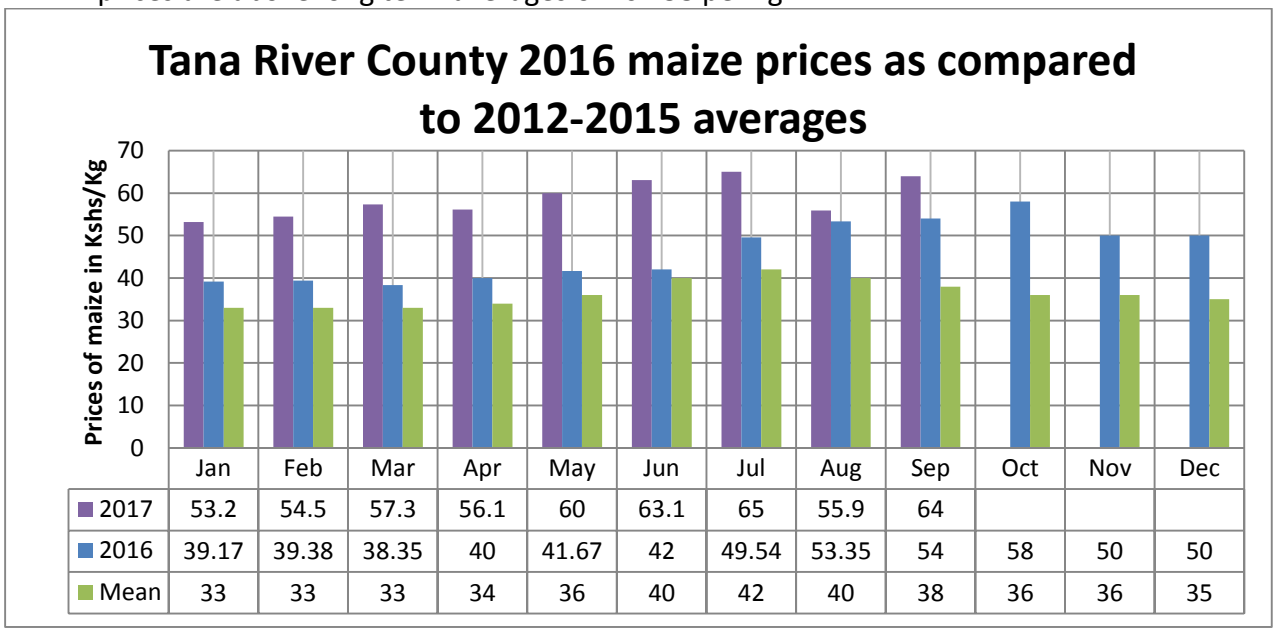
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2017	48.56	46.75	46.61	73.5	66.7	55.5	53.6	50.2	52.1			
2016	94	98	92.78	95.18	89.44	76.48	77.1	70.4	43.5	37.93	55.3	62.09
mean	68	70	68	71	81	75	71	63	75	79	77	74

Fig 14*n=450 Households*

3.2 Price of cereals and other food products

3.2.1 Maize

- The average maize price per kilogram for the month of September was Kshs.64.
- When compared to the month of August, where the average price per kilogram of maize was Kshs.55.9, maize prices increased by the end of September. This is attributed to the fact that lesser maize stocks are available at the markets.
- In comparison to the average maize price at this time of the year, the current maize prices are above long term averages of Ksh 38 per kg.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2017	53.2	54.5	57.3	56.1	60	63.1	65	55.9	64			
2016	39.17	39.38	38.35	40	41.67	42	49.54	53.35	54	58	50	50
Mean	33	33	33	34	36	40	42	40	38	36	36	35

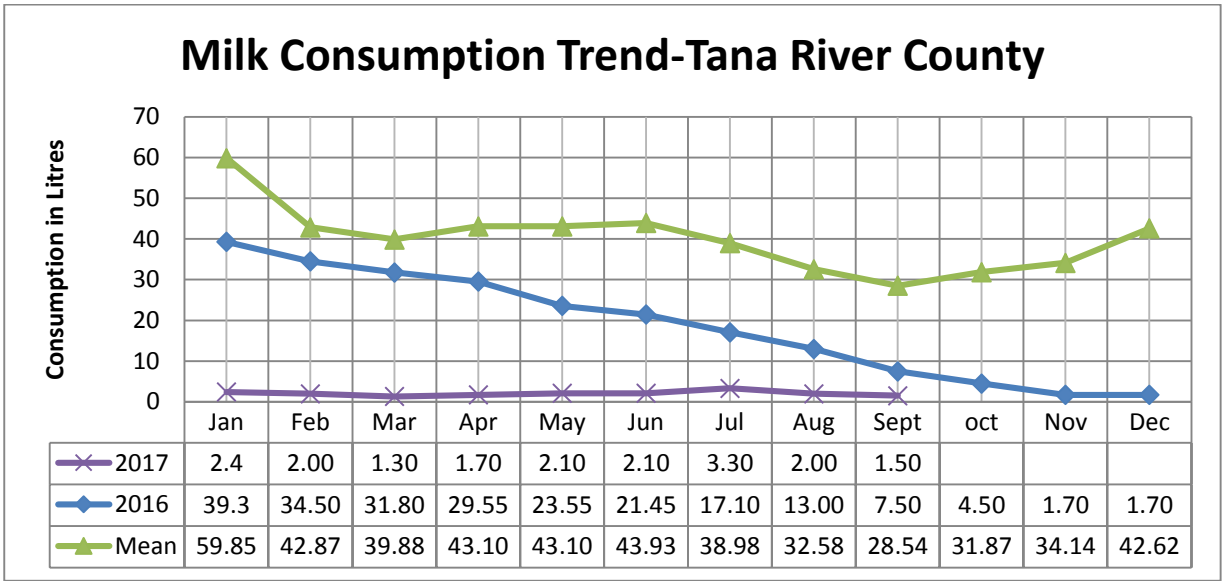
Fig 15 ***n=450 Households***

3.3 Access to Food and Water

3.3.1 Food Consumption score

3.3.2 Availability of milk for household consumption

- On average the milk consumed per household was 1 litre in the month of September.
- In comparison to the month of August, where the average milk consumed per household was 2 litres, the milk consumption reduced.
- Meanwhile, water and pasture availability is not sufficient and the livestock are away from the households in search of water and pasture.
- In comparison to a normal year, the current milk consumption rate per household is below normal at this time of the year.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	oct	Nov	Dec
2017	2.4	2.00	1.30	1.70	2.10	2.10	3.30	2.00	1.50			
2016	39.3	34.50	31.80	29.55	23.55	21.45	17.10	13.00	7.50	4.50	1.70	1.70
Mean	59.85	42.87	39.88	43.10	43.10	43.93	38.98	32.58	28.54	31.87	34.14	42.62

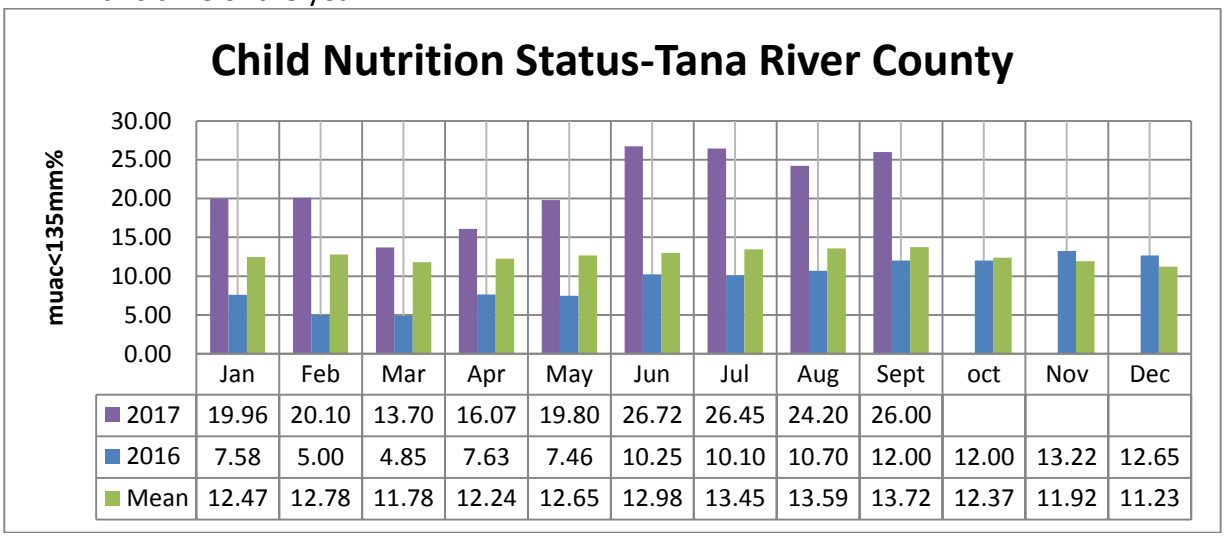
Fig 16 ***n=450 Households***

UTILISATION INDICATORS

4.1 Health and Nutrition Status

4.1.1 MUAC

- The percentage of children under the risk of malnutrition within the month of September increased to 26% compared to that of August which was at 24.2%.
- The increased number of the children under the risk malnutrition is attributed to the poor milk production and consumption and also reduced agricultural production in the county.
- Compared to long term averages of 13.72%, the current percentage is above normal at this time of the year.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	oct	Nov	Dec
2017	19.96	20.10	13.70	16.07	19.80	26.72	26.45	24.20	26.00			
2016	7.58	5.00	4.85	7.63	7.46	10.25	10.10	10.70	12.00	12.00	13.22	12.65
Mean	12.47	12.78	11.78	12.24	12.65	12.98	13.45	13.59	13.72	12.37	11.92	11.23

Fig 17***n= 2,255 Children***

Health

- The most prevalent disease in the general population was Upper Respiratory Tract Infection (URTI) as result of dust and wind. URTI was also the most prevalent disease among the under-fives followed by diseases of the skin, attributed to low sanitation and hygiene practices.
- Up to 80 percent do not treat their drinking water. These are some of the factors, which have led to the increase of diarrheal cases in the county.

Current Interventions and Recommendations

5.1 Non-food interventions

- Medical and preventive health outreach by NDMA/NDCF.
- Medical outreach of hard to-reach-areas are being undertaken by NDMA supported through National drought contingency fund(NDCF)
- Repair, maintenance and servicing of NDMA water bowser.
- Coordination and monitoring of drought response activities.
- Security surveillance, peace building, conflict resolution and management initiatives by the OOP, KRC, UNDP Peace Committees.
- Coordination of on-going activities by NDCF/NDMA.

5.2. Food Aid

- FFA targeting 45,900 beneficiaries in Tana delta and Tana river sub-county, supplementation of feeding program in the entire county targeting PLWC, agricultural market access and linkage project (AMAL), school meal program(SMP) in all 161 primary schools, will also be responding to provide food and non-food items to 700 households in need who are displaced by the floods in the entire county through KRC
- SFP/OTP with FFA/GFD linkage being undertaken by GOK, MOH, IMC UNICEF in all operational health facilities across the County
- RED CROSS-FFA-targeting 21,939 people within Tana River, Tana Delta and Tana North. PRRO/Food for Assets - The New PRRO beneficiary target for the county is 34,320 out of whom 45,900 households will be under FFA while GFD is 4,900. FFA activities include irrigation for crop production, range reseeding and rehabilitation, tree planting and construction of water pans.
- Some public primary schools and an equivalent number of ECD centres are under regular School Meals Program - current primary enrolment stands at 59,419 pupils.
- Food aid in terms of cereals, pulses and oil for the general public targeting 56,427 vulnerable people -by GOK.

Emerging Issues

6.1 Insecurity/Conflict/Human Displacement

- Tensions in Tana Delta are on the rise due to the increased in-migration of livestock as result of poor pasture in pastoral areas.
- Continuous peace meetings need to be conducted in order to maintain peaceful coexistence between the farmers and the pastoralists.

6.2 Other Shocks and Hazards

6.3 Food Security Prognosis

- Recurrent failure of the seasonal rains for the last 3 seasons has negatively affected food security situation in all the livelihood zones in the county.
- With scarce pasture and water and the past poor harvests in the county, households have no food stocks and the prices of essential commodities continues to increase, making it inaccessible to most households.
- The food security situations in all the livelihood zones have worsened.

7.0. Recommendations for Action

Recommendations by the County Steering Group/Kenya Food Security.

- Peace building and community dialogues.
- Enhance relief food distribution in areas affected by drought.-Distribution of NFI to the affected households.
- Enhance support to small scale irrigation activities through provision of water pumps and restocking of vulnerable families to improve food security at household level.
- Disease surveillance within the areas affected by drought and the continuation of malaria control initiatives to undermine the prevalence rates.
- Destocking, livestock off-take, Feed supplementation and establishment of feed reserves.
- Disease surveillance, vaccination and de-worming
- Conduct integrated outreaches and health promotion activities, Treatment of Cholera cases, water sampling and decontamination of surfaces, Active case finding and provision of food supplements
- Explore sustainable measures to overcome incidences of human/wildlife conflicts which have become a food insecurity threat across the livelihood zones.
- Desilting of water pans, rehabilitation of shallow wells, pipeline extensions, water trucking.
- Construction of shallow wells and boreholes, Construction of pans and major dams along the laghas. Action: CSG, Ministry of Water and Other Partners