

National Drought Management Authority

Tana River County

Drought Early Warning Bulletin for August 2019



A Vision 2030 Flagship Project



AUGUSTEW PHASE	Early Warning Phase Classification			
Drought Status: ALERT Maandalizi ya mapema	LIVELIHOOD ZONE		EW PHASE	TRENDS
<p>Drought Situation & EW Phase Classification Drought Phase:Alert-Worsening Biophysical Indicators</p> <ul style="list-style-type: none"> Biophysical indicators show negative fluctuations away from the expected seasonal ranges. Below average rainfall was received in the month of August 2019. The August Vegetation Condition Index values for Tana River County are below normal and clearly indicating two sub-counties are currently experiencing moderate vegetation deficit compared to last month. The Water levels in water pans have reduced and below normal at 3(5%-45%). <p>Socio Economic Indicators (Impact Indicators) Production indicators:</p> <ul style="list-style-type: none"> The forage condition is poor to fair in both quality and quantity but expected to worsen with the season coming to an end. High influx of livestock has been reported towards the Delta. Livestock body condition is currently critical in Pastoral and Marginal mixed livelihood zones. Milk production is below normal given the prevailing forage conditions. No Livestock deaths were reported in all Livelihood zones. <p>Access indicators</p> <ul style="list-style-type: none"> Terms of trade are currently above normal range and few households can temporarily afford major food commodities. Distances to water sources for households currently are above normal ranges. Pastoral livelihood zones mostly affected. <p>Utilization indicators:</p> <ul style="list-style-type: none"> The number of under-fives at risk of malnutrition stood at 14.20%,which is above normal at this time of the year. Copping strategy index for households is above normal ranges but on a worsening trend. meaning most households are food insecure. 	PASTORAL	ALARM	WORSENING	
	MARGINAL MIXED	ALERT	WORSENING	
	MIXED FARMING	ALERT	STABLE	
	COUNTY	ALERT	WORSENING	
	Biophysical Indicators	Value for the month Tana River	LTA-Monthly Tana River	Normal ranges Kenya %
	Average rainfall MM (%)	0.0	22mm	80-120
	VCI-3month	30.45		35-50
	% Of water in the water pan	3(5-45%)		5-6
	Production indicators	Value	Normal ranges	
	Livestock Migration Pattern	Not- normal	Normal	
	Livestock Body Condition	2-3	4-5	
	Milk Production (Ltr /HH/Month)	2.4	2.6	
	Livestock deaths (for drought)	No death	No death	
	Access Indicators	Value	Normal ranges	
	Terms of Trade (ToT)	66	>=64	
Milk Consumption (Ltr)	1.2	>=1.68		
Water for Households-trekking distance (km)	6.6	<=2.36		
Distances to grazing for livestock (km)	24.5	<=9.3		
Seasons production (90 kg bags)(by February 2019)	6,600(maize) 1,495(green grams)	LTA (27,600Ha) LTA (2,920Ha)		
Utilization indicators	Value	Normal ranges		
At Risk (%)	14.20%	<13.45%		
CSI	16.89	<=15.0		

<ul style="list-style-type: none"> Short rains harvests Short dry spell Reduced milk yields <ul style="list-style-type: none"> 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 Increased HH Food Stocks Kidding (Sept) 	<ul style="list-style-type: none"> Short rains Planting/weeding 								
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec

1. CLIMATIC CONDITIONS

1.1 RAINFALL PERFORMANCE

Rainfall station data (GROUND DATA:)

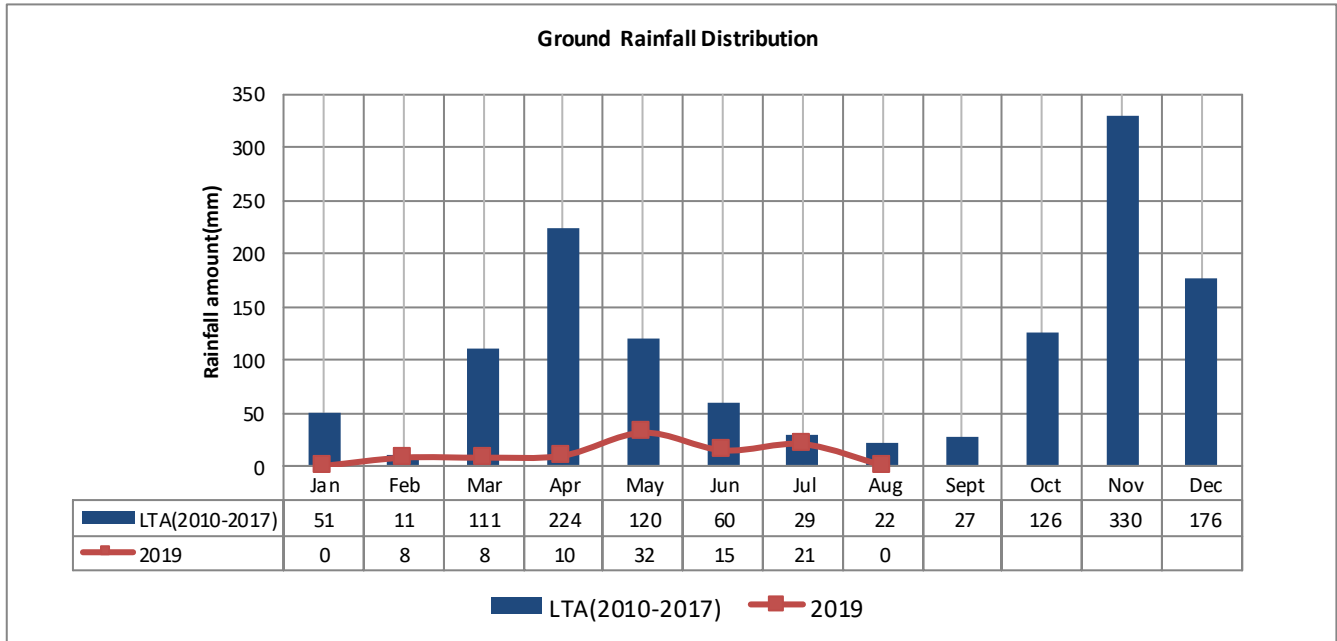
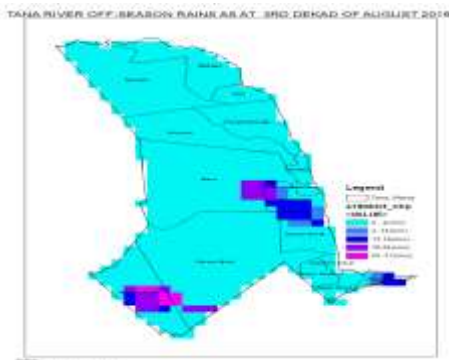


Fig .1.source: ARV

An average of 0.00 mm rainfall was recorded in August coupled with increasing temperatures. This is below the LTA of 22.00 mm. The areas that received light showers within the month of August are Kipini and Makere.

1.2.RAINFALL TEMPORAL AND SPATIAL DISTRIBUTION



In the month of August, on average 0.0 mm of rainfall was received in the 1st dekad, 0.0 mm received in the 2nd dekad and 0.0 mm in the 3rd dekad of the same month. The amounts received were below normal at this time of the year. spatial and temporal distribution was poor. Pockets within tana delta received little showers.

The rainfall was unevenly distributed across all the sub-counties.

Fig.2.source: Continental Africa Dekadal RFE.

1.3. TEMPERATURES

1.3.1. LAND SURFACE TEMPERATURE (LST)

The August 2019 land surface temperature (LST) values for Tana River County have decreased to 39.97°C, which is above normal (39.08⁰).

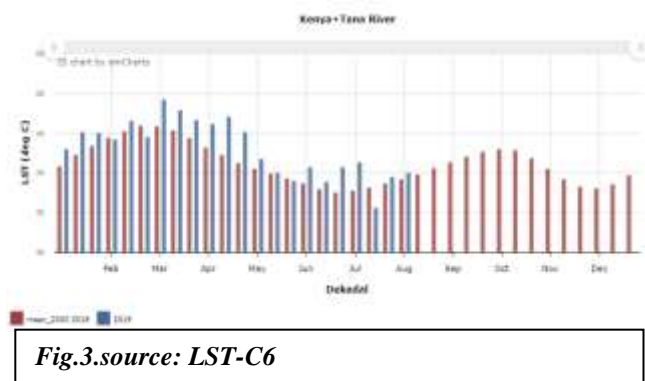


Fig.3.source: LST-C6

2.1. IMPACTS ON VEGETATION AND WATER

2.1.1. VEGETATION CONDITION INDEX (VCI)

The August vegetation cover for Tana River County shows moderate vegetation deficit in all the 3 sub-counties. The current trend has improved compared to the month of June.

COUNTY	Sub County	VCI as at 29 th July 2019	VCI as at 25 th August 2019	
TANA RIVER	County	26.94	30.45	Improvements in vegetation conditions experienced in all the sub-counties. Two sub-counties currently experiencing drought
	Bura	21.94	25.30	
	Galole	23.77	25.99	
	Garsen	33.16	37.62	

Fig.4. Source BOKU

The information provided above reflects two sub-counties currently experiencing moderate vegetation deficit, improving trend is observed across all the sub-counties.

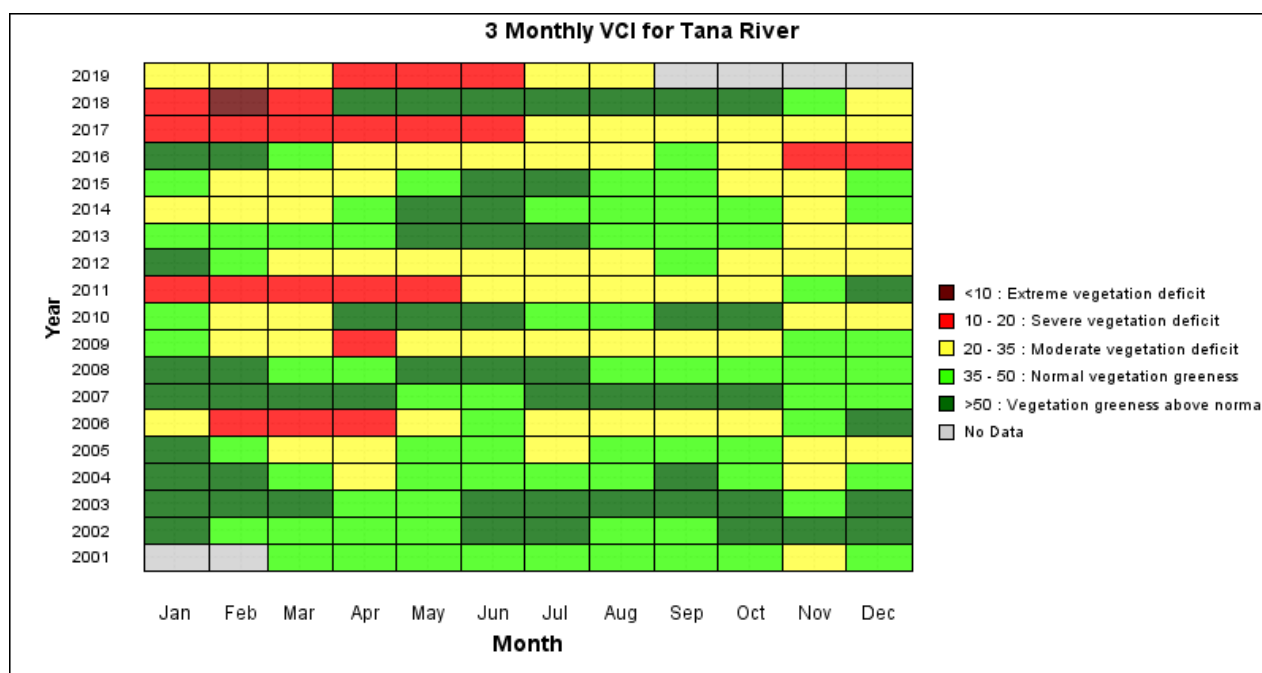
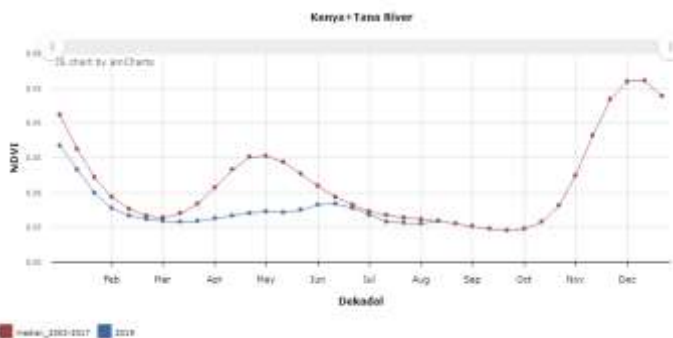


Fig.5.Source BOKU

In August the vegetation cover for Tana River County was at 30.45, which indicates moderate vegetation deficit. In comparison to the previous month the current vegetation cover has improved in quantity and quality. Any changes in this trend will be highly dependent on the onset of the short rains.



The NDVI for Tana River County is currently showing an improving trend in August 2019(0.29) which is above the LTA (0.26). This is attributed to light showers of rains received in the month of July in all livelihood zones. High temperatures also experienced towards the end of July 2019.

Fig.5.Source: NDVI-C6

2.1.2 Pasture

- The pasture condition is fair to poor both in quantity and quality across most livelihood zones in the county.
- The current pasture is expected to last for one month in Pastoral and Marginal mixed livelihood zones and two months in the mixed farming livelihood zones. The pasture was poor mainly in pastoral and Marginal mixed livelihood zones.



Figure 6: Tana River pasture conditions

2.1.3 Browse

- The browse condition is fair to poor in quantity and quality across pastoral and marginal mixed livelihood zones but fair to good in mixed livelihood zones which is below the normal ranges at this time of the year.
- The available browse is expected to last for a month in pastoral and marginal mixed livelihood Zones and one month in mixed farming livelihood zone.

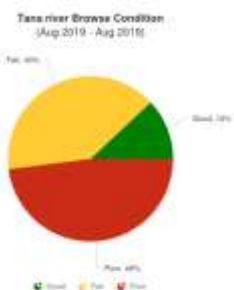


Figure 7: Tana River browse conditions

2.2 WATER RESOURCE

2.2.1 Sources

- The main water sources for both livestock and human consumption across all livelihoods were boreholes, Rivers, traditional wells, Pans and dams, lakes (Oxbo lakes), pans and dams and shallow wells.
- Most water pans and dams were at 5.6% of their full capacity. Most households are currently using rivers, bore holes and traditional river wells.
- Water quality and quantity across pastoral and marginal mixed livelihoods is still poor, which is not normal for this time of the year.
- The current water sources are expected to last for one month in Pastoral and marginal mixed livelihood zones.

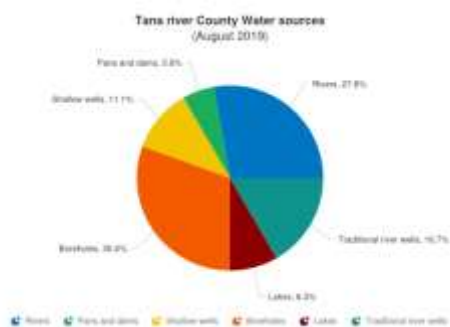


Figure 8: Tana River water sources

2.2.2 Household access and Utilization

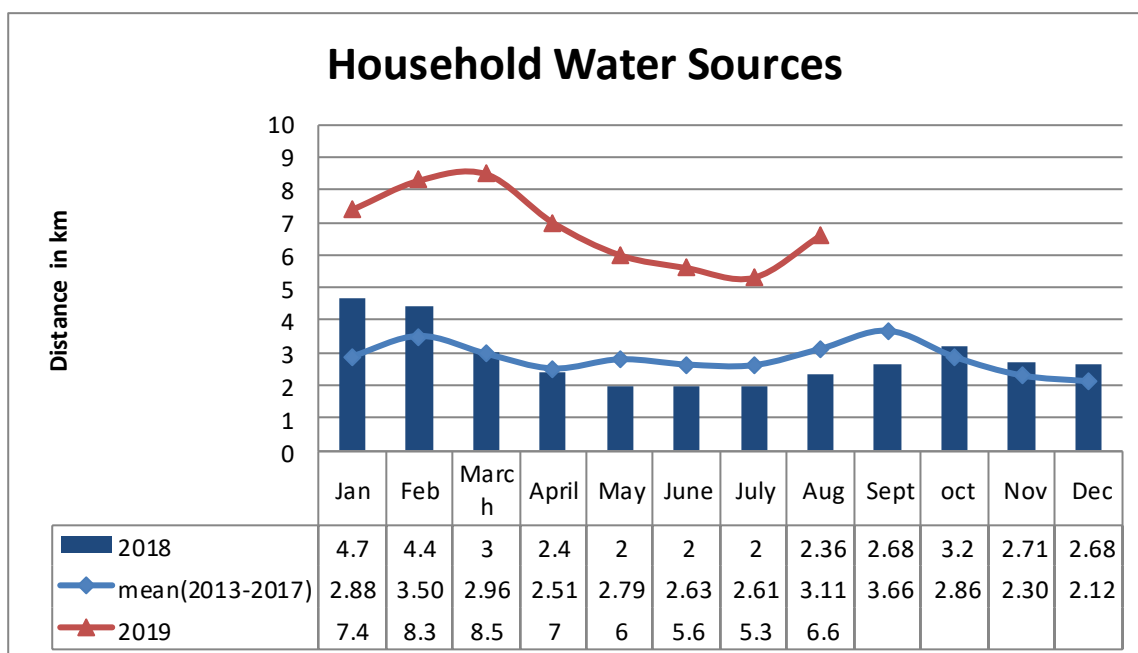


Fig.9.

- The households trekking distance increased in the month from 5.3 km to 6.6km. The current distance is above the Long-term average of 2.36 km.
- The increase in trekking distance is attributed to the current dry spell and high temperatures which resulted to high evaporation rates in most of the water pans and open water sources. This has led to drying up of most of the open water sources. Households within pastoral livelihood zones are trekking longest average distances of 4.2 km.

2.2.3 Livestock access

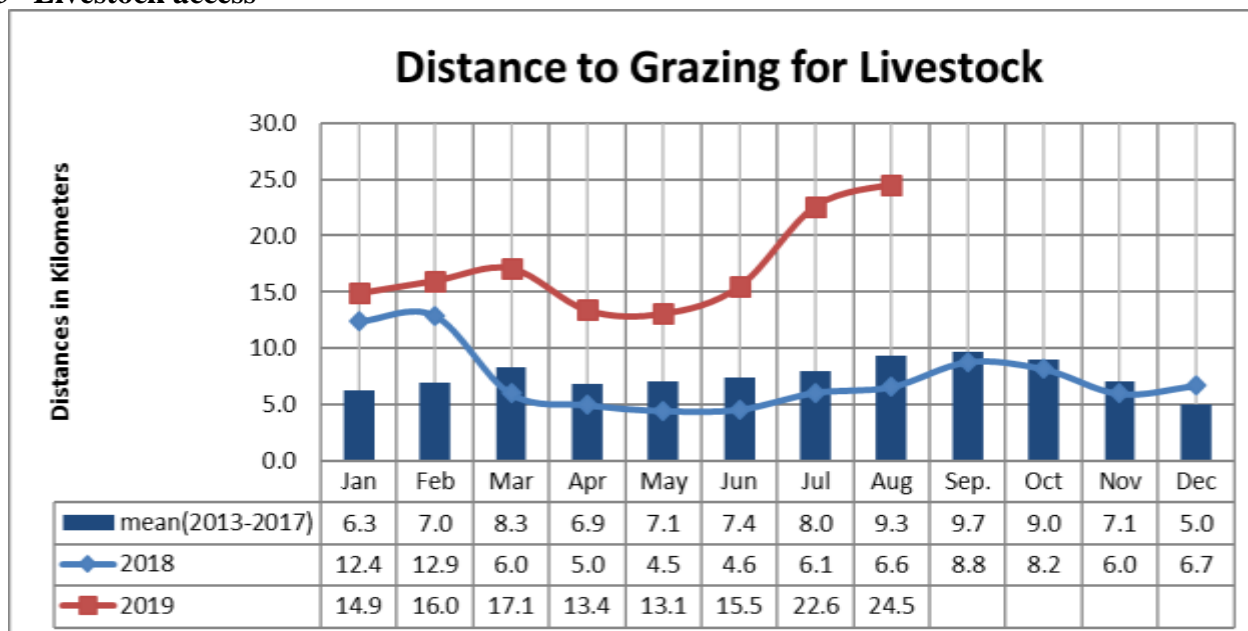


Fig.10.

- The return distance for livestock to grazing zones increased to 24.5km during the month.
- The situation is attributed to depleted pasture and browse coupled with depressed showers received across all livelihoods which led to in and out migrations during the month.

3.0. PRODUCTION INDICATORS

3.1 Livestock Production

3.1.1 Livestock Body Condition

- The livestock body condition was critical in Pastoral livelihood zones but stressed in Marginal and mixed livelihood zones, thin fore ribs visible. Moderate, neither fat nor thin in mixed farming livelihood zones. The situation was as result of scarcity of pasture and water which has led to livestock walking long distances. *(Refer to table 4 in annex)*

3.1.2 Livestock Diseases

- CCPP, PPR and Red Water were reported in Pastoral and Marginal mixed livelihood zones.
- No notifiable livestock diseases incidences were reported; the disease incidences were within normal seasonal ranges

3.1.3 Milk Production

- The average milk produced per household per day remained stable at 2.0 litres compared to the previous month, there was an increase in milk production in relation to the previous month attributed to in-migrations.
- In comparison to the long-term average; the current amount is below; this is attributed to poor quality of pasture and browse across all livelihood zones, pastoral being the most affected livelihood zone.

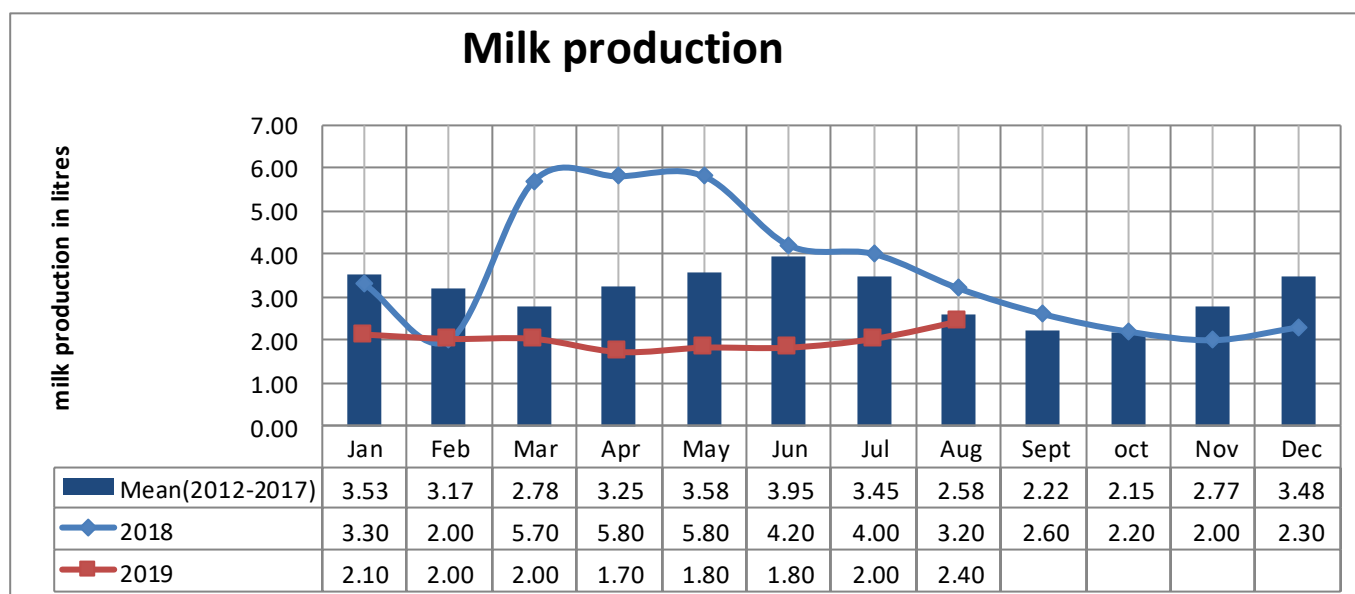


Figure 11

3.2. RAIN-FED CROP PRODUCTION.

3.2.1 Stage and Condition of food Crops

- Most crops within the delta are at early maturity stage. Farmers within Kipini, Tarasa and Garsen have started harvesting their maize crops. Cases of livestock invasion have been reported in most farms within the delta. This might decrease the farmer's production but in irrigated farms most crops are at harvesting stage.

4. MARKET PERFORMANCE
4.1. LIVESTOCK MARKETING
4.1.1 Cattle Prices

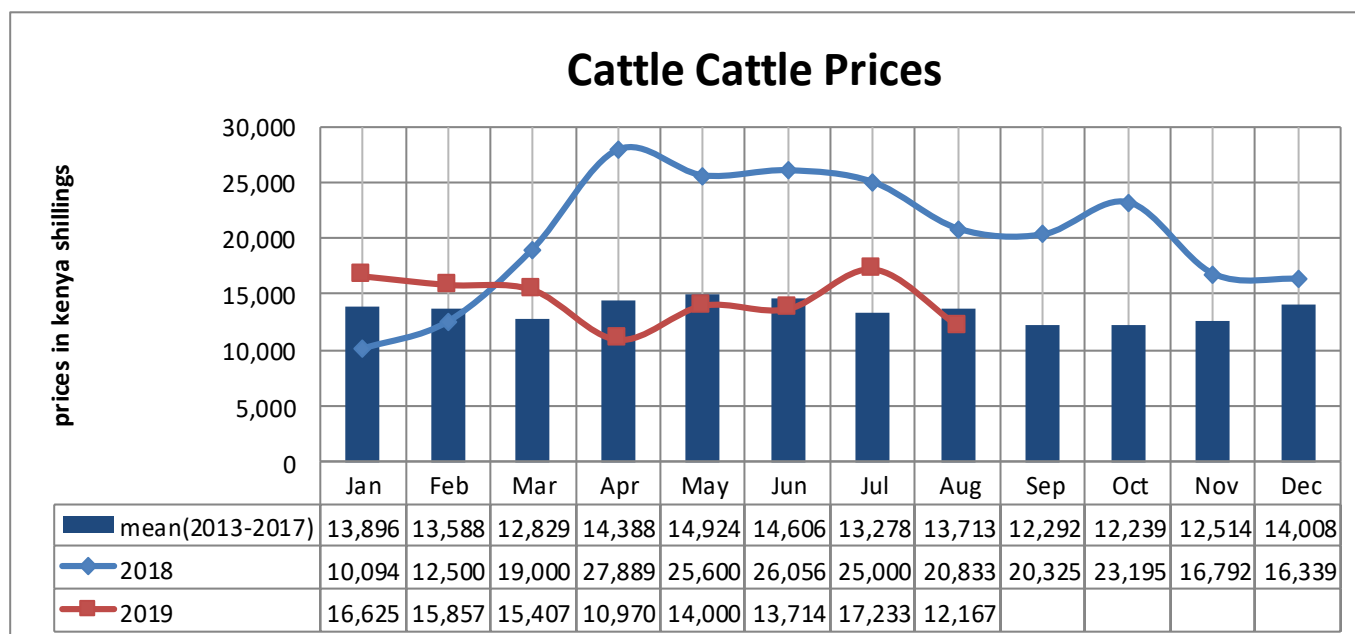


Fig.12.

- The average price for the medium sized cattle decreased by 42% to Ksh.12, 167in the reporting month as compared to Ksh.17, 233to the previous month.
- The price was below the long-term average by 11%. Thedecrease in prices were attributed to the livestock body conditions more so within the pastoral and marginal mixed livelihood zones.

4.1.2 Goat Prices

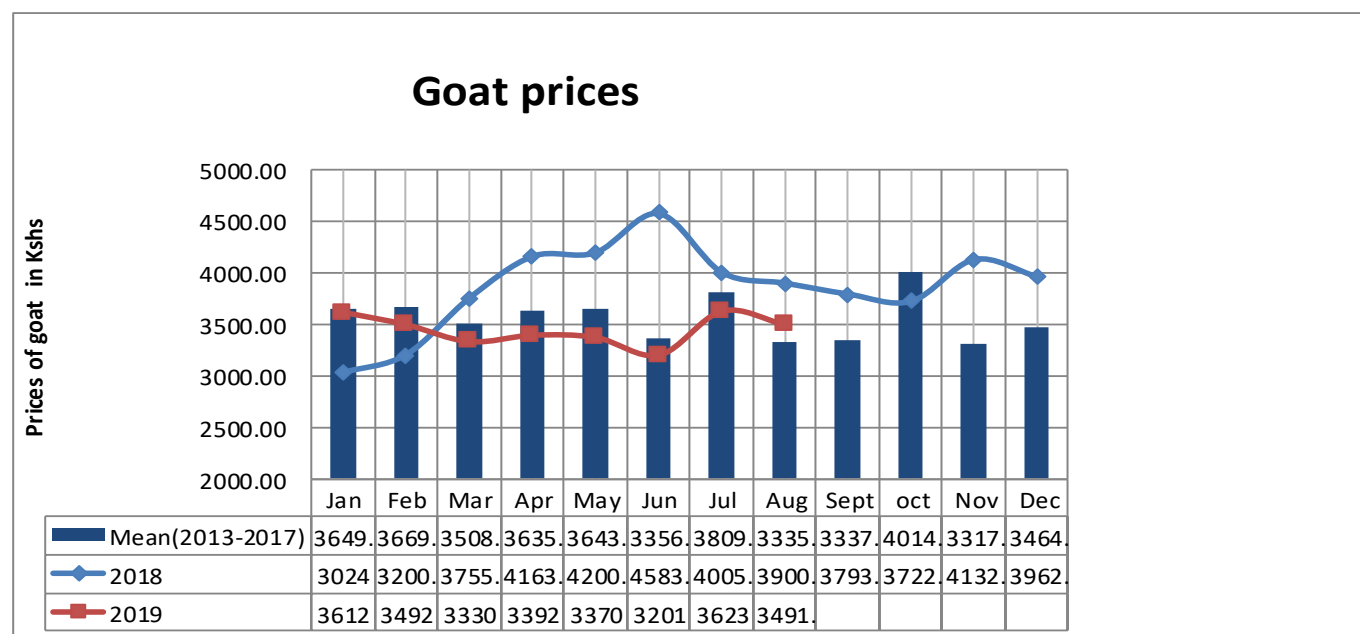


Fig.13.

- The average price of a goat increased toKsh. 3,491 as compared to previous month.
- The average Goat prices were lowest in pastorallivelihood zone at Ksh. 2,896.
- The prices were above the long-term average by 5 %.

4.2. CROP PRICES

4.2.1 Maize

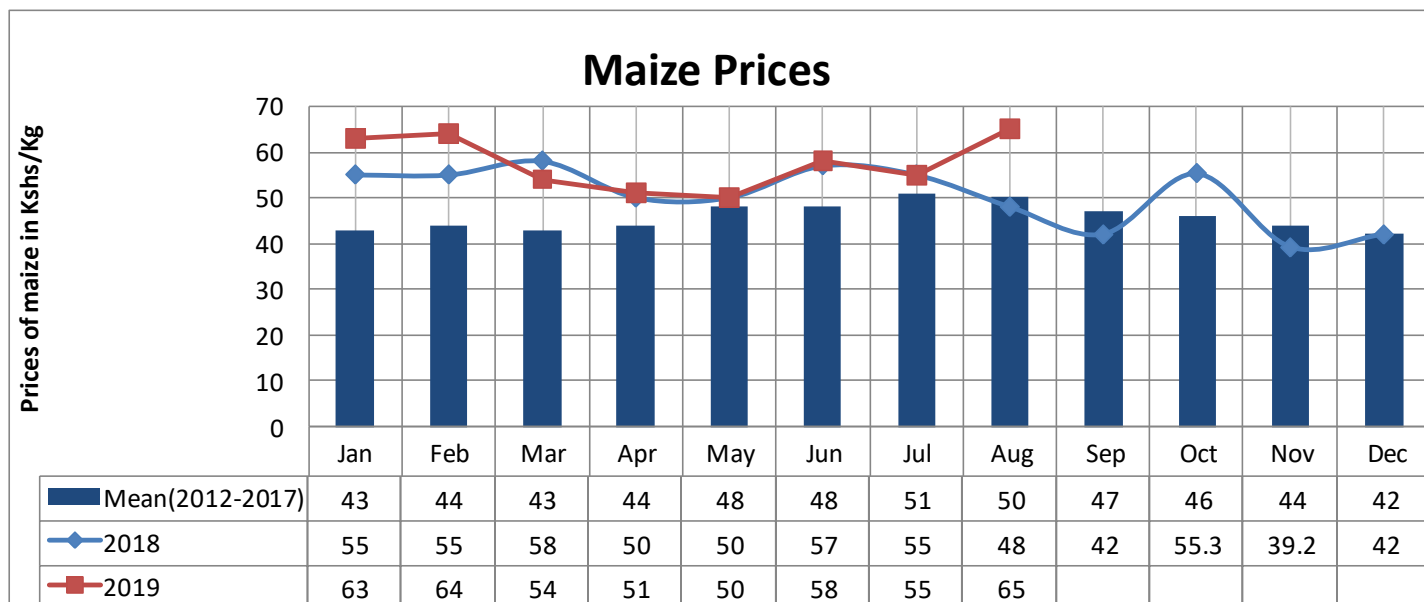


Fig.14.

- The average price for kilogram maize was Ksh.65 during the month, which was an increase as compared to the previous month. The price was above the long-term average at this time of the year by 30%.

4.3. Livestock Price Ratio/Terms of Trade

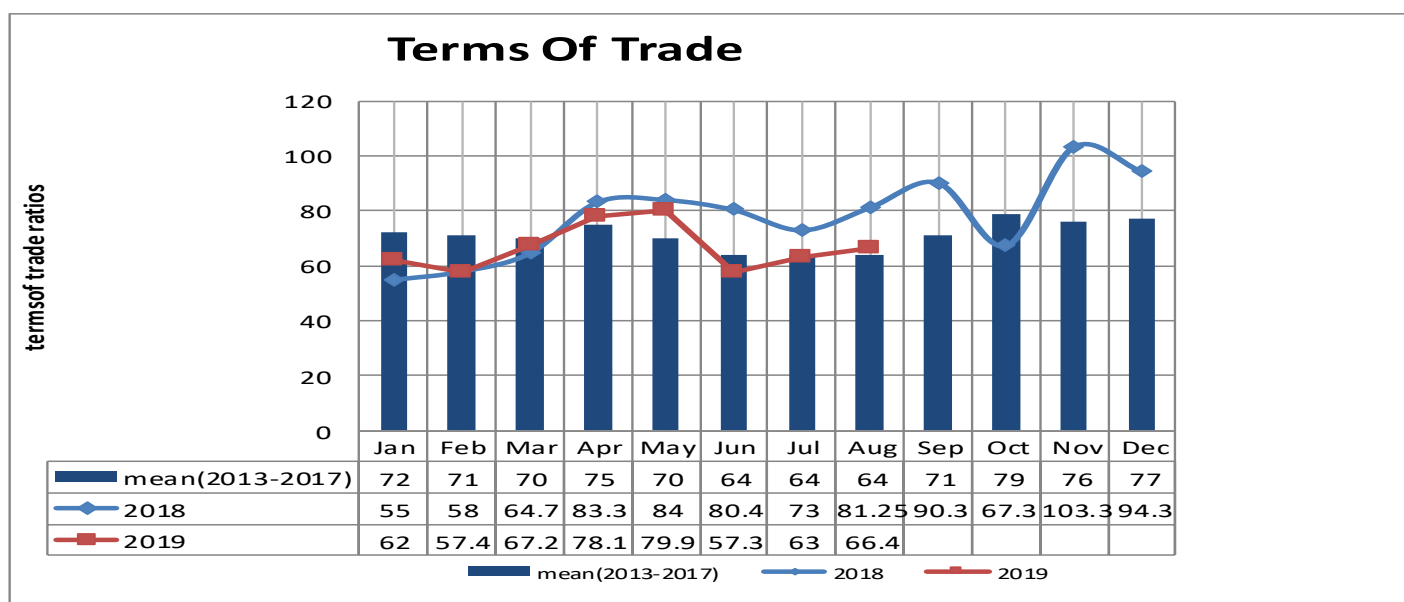


Fig.15.

- The terms of trade improved from 63 in July to 66.4 during the month of August 2019.
- The current terms of trade is above the long-term average by 4%. This is attributed to market dynamics where there is a clear increase in goat prices while maize prices are decreasing due to importation of maize.

5.1. FOOD CONSUMPTION AND NUTRITION STATUS

5.1.1. Milk Consumption

- The average milk consumption per household per day remained stable at 1.20 litres compared to the previous month. The amount consumed is below the long term average at this time of the year.

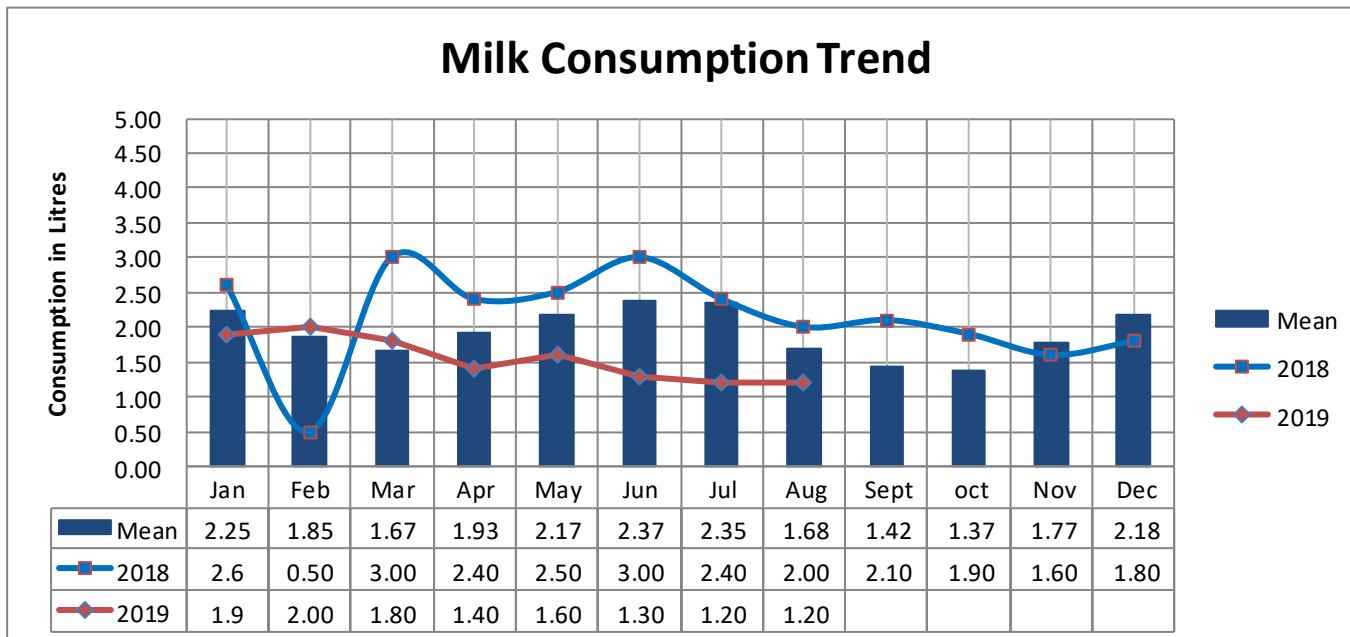


Fig. 16.

5.1.2. Food Consumption Score

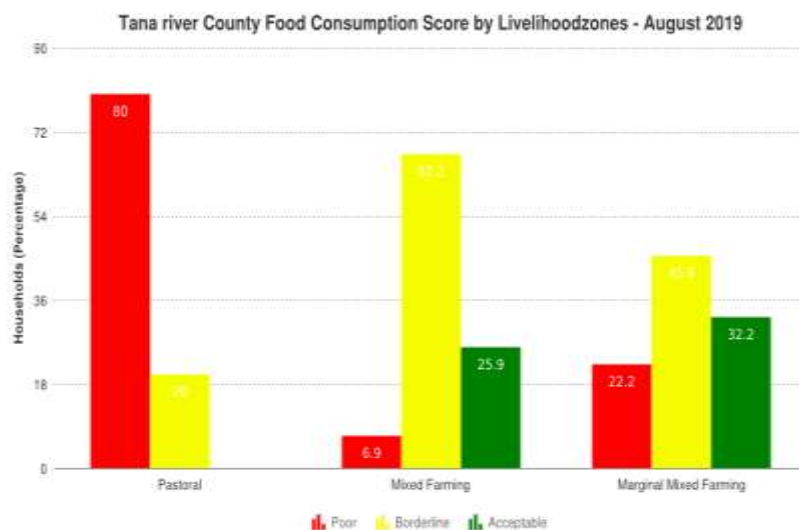


Figure 17: Tana River food consumption

- There was higher proportion of households with poor food consumption gaps in Pastoral (80%) and Marginal mixed (22.2%) livelihoods.

- The proportion of households with borderline food consumption score was high in mixed farming livelihood zones at 67.2% and lowest in Pastoral livelihood zones at 20%.

- A proportion of 32.2% and 25.9% of the households across marginal mixed and mixed livelihood zones have acceptable food consumption score respectively.

5.1.3 Health and Nutrition Status

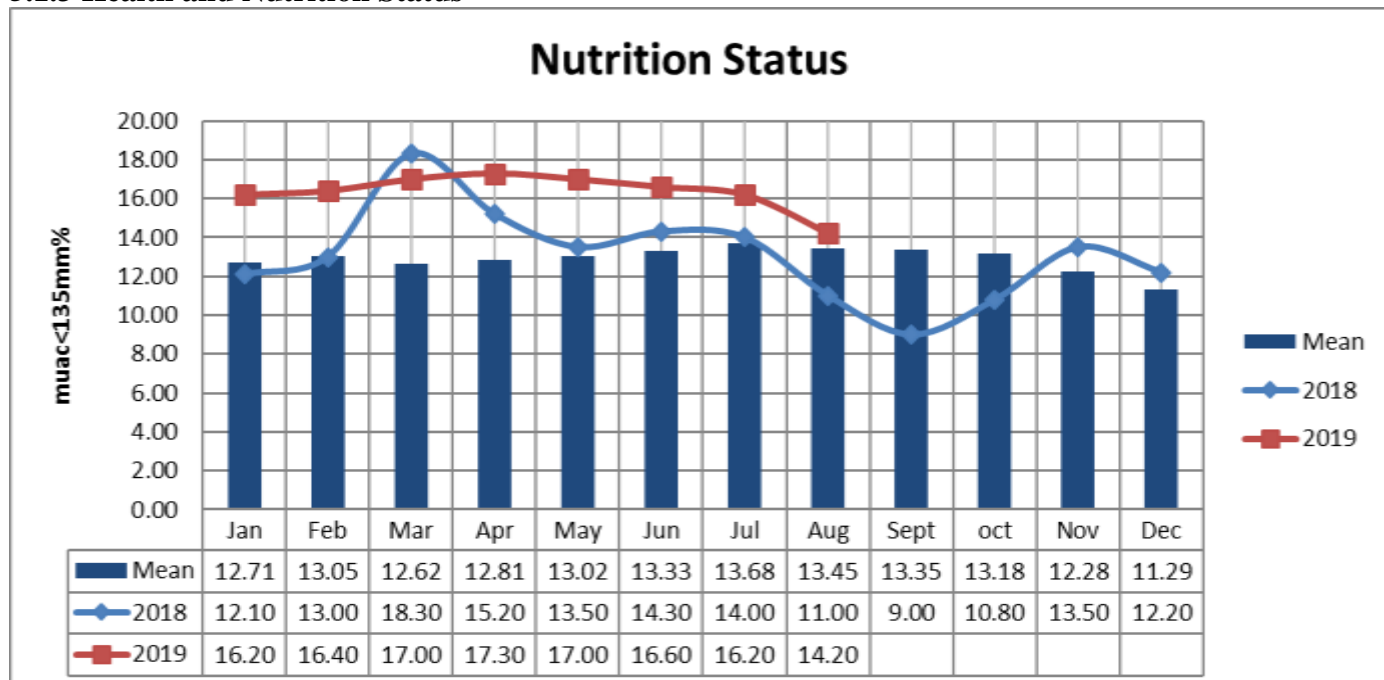


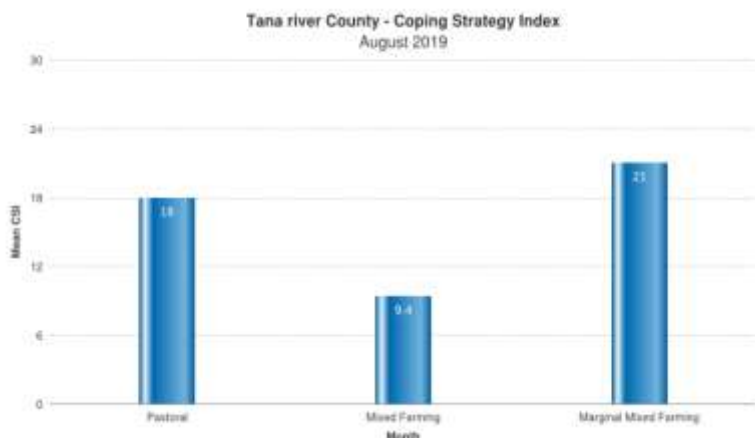
Fig.18.

- The proportion of sampled children under five years of age at risk of malnutrition reduced to 14.2% as compared to the previous month at 16.20%. This is attributed to depletion of pasture and browse triggered by high influx of livestock from neighbouring counties of Wajia and Garisa.
- Bangale, Madogo and Nanighi wards recorded highest levels of malnutrition.

5.2. Health

- During the reporting month the commonly reported illnesses were outbreak of measles in Bura and Galole, water born diseases, malaria and skin diseases in all livelihood Zones.
- Cholera outbreak reported in Madogo ward, Mulanjo sub-location but has since been contained.

5.3. COPING STRATEGIES



Coping Strategy Index

- The average coping strategy index decreased to 16.89 in August 2019 compared to last month.
- Households in Marginal mixed livelihood zone employed most coping strategies at 21.8 followed by Pastoral at 18. The mixed farming livelihood zones employed least coping mechanisms at 9.4. The decreasing trend is attributed to the fact that some farmers within the Tana delta realised some harvests and improved market prices for the essential commodities.

Fig.19: Tana River Coping Strategy Index

6. CURRENT INTERVENTION MEASURES.

6.1 Non-food interventions

- Targeting and distribution of 6000 bags of livestock feeds to affected households by NDMA/CSG (Tana North and Tana Delta).
- Integrated outreaches to hard to reach areas of Tana North and Galole supported by NDMA/MOH/KRCS/UNICEF/SAMARITAN PURSE.
- Peace meetings and Barazas targeting fall back grazing fields around Tana Delta and Galole by NDMA/Ministry of Interior/USAID/TANA PEASE.
- Sub-county technical working group meetings on drought status affecting the counties by NDMA
- Measles vaccination for children under 5 years by KRCS/UNICEF/MOH/WVK/Concern worldwide in Tana North.
- SFS supported by WFP targeting households in Tana Delta, Tana North and Tana River sub-counties.
- Hygiene promotions and distribution of water treatment chemicals in Tana Delta (Katsangani, Safaricon, Tana Salt, Msurujani, Timboni, Vumilia and Orolle) by Samaritan Purse.
- Support of small enterprises in Tana Delta by UNDP/NDMA.
- Water trucking to affected areas of Tana Delta, Tana North and Tana River sub-counties by NDMA/Special programmes.
- Assessment of critical water facilities by water response teams supported by NDMA.
- Coordination of drought response activities by NDMA.
- Cash transfer to 1978 households in Tana North (Sala, Bangale, Hirimani,) by KRCS/OXFARM/ALDEF/PGI.
- Land policies and land registry installations to county government supported by FAO.
- Distribution of water storage facilities to community and institutions supported by WVK.

6.2 Food Aid

- Relief food distribution in areas currently facing food shortages in Tana Delta, Tana North and Galole supported by KRCS/National Government/Samaritan Purse.
- Public primary schools are under regular School Meals Program supported by WFP.

7.0 EMERGING ISSUES

7.0.1. Insecurity/Conflict/Human Displacement

- Resource based tension among locals as a result of high migrations of livestock from Garisa and Wajia towards Tana River and Tana Delta reported. The affected areas are Wayu, Chifiri, Dayate, Waldena, Titila and Lacole areas of Galole. High influx of livestock reported towards the Tana Delta. Likely to cause resource based conflicts in the next 2 months.
- One person killed as a result of resource based conflict in Tana North, high influx of livestock from North eastern reported towards Hirimani, Bangale, Mbalambala and Korati.

7.0.2. Migration - limited to migrations of persons.

- High proportion of Livestock have moved to the Delta including Baridi area in Tana Delta, Kamorjila in Tana River, Bilbil area in Tana North and Kipini in Tana Delta.
- The normal migration of persons out of the Delta due to wetness at this time of the year did not occur due to poor rains in the Pastoral livelihood zones.
- High influx of livestock from north eastern reported towards Hirimani, Kalnigi, Chwele, Mbalambala and Korati. Influx of livestock from Bangale ward and Garissa.
- Out migrations reported in bordering counties of Kitui where livestock from Boka and Basan ghesia have moved to Kasiluni, Ali Turey, El derow, Kathuri, Kaningo in Kitui. This has since caused resource based border tension between the households living in these areas where one person is reported to have been killed.

7.0.3. Food Security Prognosis

- High Influx of livestock from neighbouring counties of Carissa and Wajia has affected the duration the current pasture and browse expected to last. With depleted pasture and browse in Tana North most livestock have moved to the delta and this has triggered resource based conflict among the Pastoralists and farmers. This might cripple the operations of livestock markets within the delta.
- Late onset of the long rains was registered within the last dekad of April and most farmers who planted reported great losses due to lack of enough rains to support production. This means with the current situation escalating, most households are food insecure across all the livelihood zones. Food prices of major commodities are also expected to increase rendering vulnerable households food insecure.
- Currently, the households have deficit of food stocks and relying on the markets and the prices of essential commodities are high, making it inaccessible to most households due to low purchasing power. This is attributed to the low crop and livestock production which has pushed the prices of major commodities upwards. The households ability to purchasing essential commodities from the market for the current month is also below average.
- The county food security phase based on the highlighted factors is crisis (IPC phase 3) in Pastoral and Marginal mixed livelihood zones but stressed (IPC phase 2) in mixed livelihood zones.

8.0 RECOMMENDATIONS

8.1.1. General Recommendations:

- Activation of response plans and scaling up of response activities by all actors is essential at this time of the year.
- Enhance security surveillance and peace Barazas in areas with high influx of livestock for any possible eruption of resource based conflicts (Tana Delta and bordering areas of Kitui and Masalani).
- Enhance integrated outreaches in hard to reach areas across all the sub-counties more so in affected areas.
- Upscaling of food aid to the population in need in Tana North, Tana River and Tana Delta sub-counties.

8.2.0 Proposed Recommendations

PROPOSED INTERVENTIONS		
SECTOR	INTERVENTIONS	HOTSPOTS/BENEFICIARIES
8.2.1:Water	Rehabilitation / Servicing of critical water points.	Tana North, Tana River, Tana Delta
	Repair of water bowsers.	Tana River County Government/NDMA,/MOW
	Support to water trucking to areas with water stress	Assa, Waldena, Chifiri, Assa Kone, Wayu, Buwa, Boka, Bisan gersa, Assa, Bangale centre(2900hh), Bisahargessa over 1500HH, Tula(1800HH) Sabukia, Walesorea
	Capacity building for Water Resource User management Committees RMC on WASH.	Tana North, Galole, Tana River
	Support water to health facilities currently facing water shortages	Tana North, Tana River
8.2.2.Nutrition and Health	Mass screening and referrals in hard to reach	Tana North, Galole, Tana River
	Support Re-distribution of nutrition commodities from facilities with over stocks to facilities without stocks (Preposition health and nutrition commodities)	Tana North, Galole, Tana River

	Enhance sensitization on issues of hygiene across all the livelihood zones.	Tana North,Galole,Tana River
	Provide water storage facilities to medical facilities with water	Tana North,Galole,Tana River
	Provision of personal hygiene items in areas with high cases of water born diseases.	Tana North,Galole,Tana River
	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	Tana North,Galole,Tana River
8.2.3.Education	Provide water trucking for 3 months on emergency response to schools more so within the pastoral livelihood	Tana North,Galole,Tana River
	Provision of water treatment chemicals to schools.	Tana North,Galole,Tana River
	Support deworming in schools.	Tana North,Galole,Tana River
	Introduction of school feeding programme to ECD schools.	Tana North,Galole,Tana River
	Enhance SFP in schools within the Pastoral and Marginal mixed livelihood zones.	Tana North,Galole,Tana River
	Repairs and rehabilitation of existing boreholes to serve the schools (Solar pump systems and/or piping).	Tana North,Galole,Tana River
	Provision of water storage facilities to schools with water stress.	Tana North,Galole,Tana River
8.2.4.Livestock	Livestock disease surveillance and control through vaccinations against notifiable diseases such as CCPP, FMD, in all the 3 sub-counties.	Tana North,Galole,Tana River
	Enhance capacity building to farmer groups on livestock enterprises.	Tana North,Galole,Tana River
	Training of farmers on disease control.	Tana North,Galole,Tana River

	Support of destocking in Pastoral and Marginal mixed livelihood zones.	Tana North,Galole,Tana River
	Support establishment of strategic feed reserves and distribute supplementary feeds in areas with pasture stress.	Tana North,Galole,Tana River
	Support rangeland management (ensure controlled grazing in dry season grazing zones by grazing committees) meetings in areas with high influx of livestock.	Tana North,Galole,Tana River
8.2.5.Agriculture	Capacity building of farmers on post-harvest management and food handling and linkage to markets	Galole,Tana Delta
	Support Climate Smart Agriculture Interventions.	Galole,Tana Delta
	Carryout Soil sampling and testing	Galole,Tana Delta
	Support farmers with inputs especially seeds and seedlings	Tana North,Tana River,Tana Delta
	Soil and water conservation especially on denuded farm lands	Tana North,Tana River,Tana Delta
	Provision of drought tolerance seeds to farmers under irrigation and farmers in preparation to long rains.	Tana North,Tana River,Tana Delta
8.2.6.Peace and Security	Carry out inter-boundary peace meetings in areas with cross border tensions	Tana North,Tana River,Tana Delta
	Carry out inter-community peace meetings in areas with inter-community resource based conflict.	Tana North,Tana River,Tana Delta

REFERENCE TABLES

Table 1: Drought Phase Classification

Normal	Alert	Alarm	Emergency
All environmental Agricultural and pastoral indicators are within the seasonal ranges	Meteorological drought indicators move outside seasonal ranges	Environmental and at least two production indicators are outside Long term seasonal ranges	All Environmental, Metrological and Production indicators are outside normal ranges.
Recovery: The drought phase must have reached at least Alarm stage. Recovery starts after the end of drought as signaled by the environmental indicators returning to seasonal norms; local economies starting to recover			

Table 2: Standardized Precipitation Index (SPI)

Color	SPI Values	Metrological Drought Category
	> +1.5 or more	Wet Conditions
	0 to +1.5	No drought
	-0.1 to -0.99	Mild drought
	-1 to -1.99	Severe drought
	<-2 and less	Extreme drought

Table 3: Vegetation Condition Index Values (VCI)

Color	VCI values	Agricultural Drought Category
	3-monthly average	
	≥50	Wet
	35 to 50	No agricultural drought
	21 to 34	Moderate agricultural drought
	10 to 20	Severe agricultural drought
	<10	Extreme agricultural drought

Table 4: Livestock Body Condition

Level	Classification	Characteristics (this describes majority of the herd and not individual isolated Stock)
1	Normal	Very Fat Tail buried and in fat
		Fat, Blocky. Bone over back not visible
		Very Good Smooth with fat over back and tail head
		Good smooth appearance
2	Moderate	Moderate. Neither fat nor thin
3	Stressed	Borderline fore-ribs not visible. 12th & 13th ribs visible
4	Critical	Thin fore ribs visible
5	Emaciated	Very thin no fat, bones visible
		Emaciated, little muscle left

Definition of Early Warning Phases

The EW phases are defined as follow:

NORMAL: The normal phase occurs when **biophysical drought indicators (VCI and SPI) show no unusual fluctuations** hence remain within the expected ranges for the time of the year in a given livelihood zone, division or county

ALERT: The alert phase is when either the **vegetation condition index or the standard precipitation index (biophysical indicators) show unusual fluctuations below expected seasonal ranges** within the whole county/sub-county or livelihood zones.

ALARM: The alarm phase occurs when both **biophysical and at least three production indicators fluctuate outside expected seasonal ranges** affecting the local economy. The production indicators to be considered are livestock body condition, crop condition, milk production, and livestock migration and livestock mortality rate.

If **access indicators** (impact on market, access to food and water) move outside the normal range, the status remains at “alarm” but with a worsening trend. Proposed access indicators include ToT, price of cereals, availability of cereals and legumes, and milk consumption. The trend will be further worsening when also welfare indicators (MUAC and CSI) start moving outside the normal ranges.

EMERGENCY: In the emergency phase, **all indicators are outside of normal ranges**; local production systems have collapsed within the dominant economy. The emergency phase affects asset status and purchasing power to extent that seriously threatens food security. As a result, coping strategy index, malnutrition (MUAC) and livestock mortality rates move above emergency thresholds

RECOVERY: Environmental indicators returning to seasonal norms. The drought phase must have reached at least Alarm stage. Recovery starts after the end of drought as signaled by the environmental indicators returning to seasonal norms while production indicators are still outside the normal seasonal range but local economies start to recover. The status changes to normal once the bio physical and production indicators are back to normal range.