




A Vision 2030 Flagship Project



National Drought Management Authority Tana River County Drought Early Warning Bulletin for January 2021

January EW PHASE	Early Warning Phase Classification			
	LIVELIHOOD ZONE	EW PHASE	TRENDS	
<p>Drought Situation & EW Phase Classification Drought Phase: Normal-WORSENING</p> <p>Biophysical Indicators</p> <ul style="list-style-type: none"> Biophysical indicators are showing negative trends away from the expected seasonal ranges. Below average amount of rainfall were received in the month of January 2021. The January Vegetation Condition Index values for Tana North-Bura sub-county are below normal and indicating moderate drought. The Water levels in most water pans were below normal at 3(25%-65%) in Pastoral and Marginal mixed livelihood zones. <p>Socio Economic Indicators (Impact Indicators)</p> <p>Production indicators:</p> <ul style="list-style-type: none"> The forage condition is fair to poor in pastoral but fair to good in mixed livelihoods in both quality and quantity. Livestock body condition is good in mixed and fair to good in marginal mixed and pastoral livelihood zones. Milk production remained stable at 4.0 litres across the livelihood zones. This is attributed to fair forage and pasture conditions. Livestock migrations were reported towards the fall back grazing fields. <p>Access indicators</p> <ul style="list-style-type: none"> Terms of trade are currently above normal range. Distances to water sources for households currently stable compared to normal. <p>Utilization indicators:</p> <ul style="list-style-type: none"> The number of under-fives at risk of malnutrition stood at 16.8%, which is above normal at this time of the year. Copping strategy index for households is within normal ranges but on a worsening trend. 	PASTORAL	ALERT	WORSENING	
	MARGINAL MIXED	NORMAL	WORSENING	
	MIXED FARMING	NORMAL	STABLE	
	COUNTY	NORMAL	WORSENING	
	Biophysical Indicators	Value for the month Tana River	LTA-Monthly Tana River	Normal ranges Kenya %
	Average rainfall MM (%)	1.8 mm	65 mm	80-120
	VCI-3month	39.56		35-50
	% Of water in the water pan	3(25-65%)		5-6
	Production indicators	Value	Normal ranges	
	Livestock Migration Pattern	normal	Normal	
Livestock Body Condition	3-5	4-5		
Milk Production (Ltr /HH/Month)	3.9	3.5		
Livestock deaths (for drought)	No death	No death		
Access Indicators	Value	Normal ranges		
Terms of Trade (ToT)	99.4	>=50.41		
Milk Consumption (Ltr)	2.0	>=1.5		
Water for Households-trekking distance (km)	3.4	<=3.43		
Distances to grazing for livestock (km)	8.7	<=7.86		
Seasons production (90 kg bags)(by January 2021)	6,618(maize) 3,598(green grams)	LTA (27,687(bags) LTA (10,810(bags)		
Utilization indicators	Value	Normal ranges		
At Risk (%)	16.8%	<8.5%		
CSI	12.3%	<=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:)

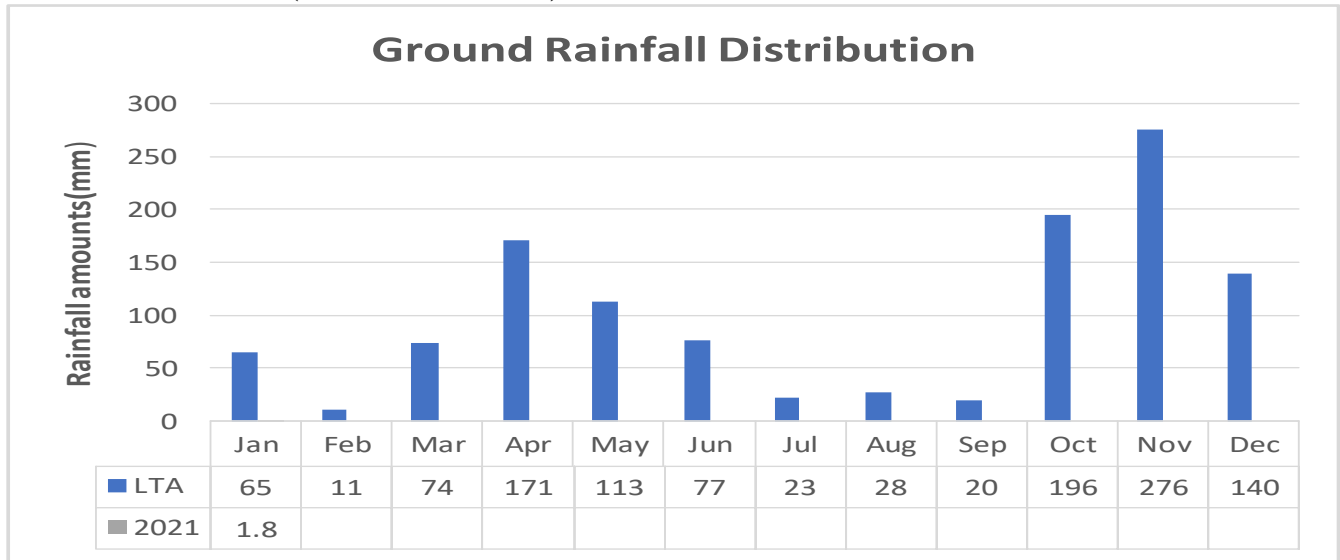
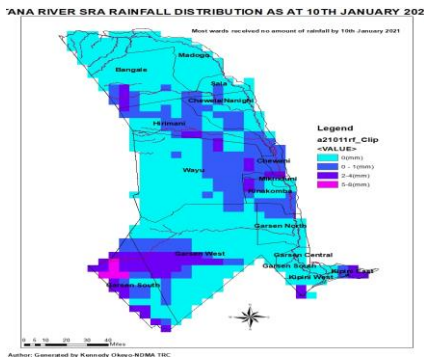


Fig .1.source: VAM-WFP

An average of 1.8 mm rainfall was recorded in January coupled with increasing temperatures. This is below the LTA of 65 mm.

1.2.RAINFALL TEMPORAL AND SPATIAL DISTRIBUTION



In the month of January, on average 3 mm of rainfall was received in first dekad of January, 2.4 mm received in second dekad of January and 0.0 mm received in third dekad respectively. The amounts received were below normal at this time of the year. Spatial and temporal distribution was poor.

The rainfall were unevenly distributed across all the three sub-counties. Most wards reported late onset of seasonal rainfall by 3rd dekad of October.

Fig.2.source: Continental Africa Dekadal RFE.

1.3. TEMPERATURES

1.3.1. LAND SURFACE TEMPERATURE (LST)

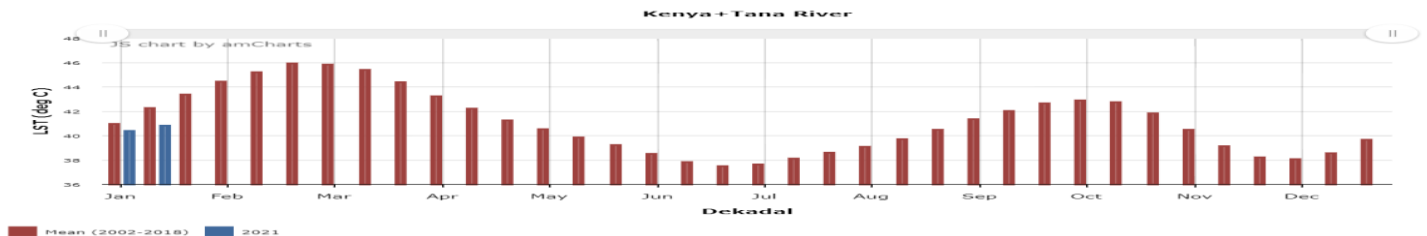


Fig.3.source: LST-C6

The January 2021 land surface temperature (LST) values for Tana River County increased to 40.9°C by the 2ND dekad of January, which is below normal(42.2°C) at this time of the year.

2.1. IMPACTS ON VEGETATION AND WATER

2.1.1. VEGETATION CONDITION INDEX (VCI)

The January vegetation cover for Tana River County shows normal vegetation cover on average for the county across all the two sub-counties. The current trend has decreased for the three sub-counties compared to the month of January 2021. Tana North is currently experiencing moderate drought.

COUNTY	Sub County	VCI as at 31 st January 2021	VCI as at 31 st December 2020	
TANA RIVER	County	39.56	43.41	Decreasing trends in vegetation conditions experienced in the county, all sub counties recorded a decrease in vegetation cover.
	Bura	29.17	31.54	
	Galole	39.24	41.11	
	Garsen	48.59	53.05	

Fig.4. Source BOKU

The information provided above reflects Tana North sub-county currently experiencing moderate drought, decreasing trend is observed across all the three sub-counties compared to the previous month.

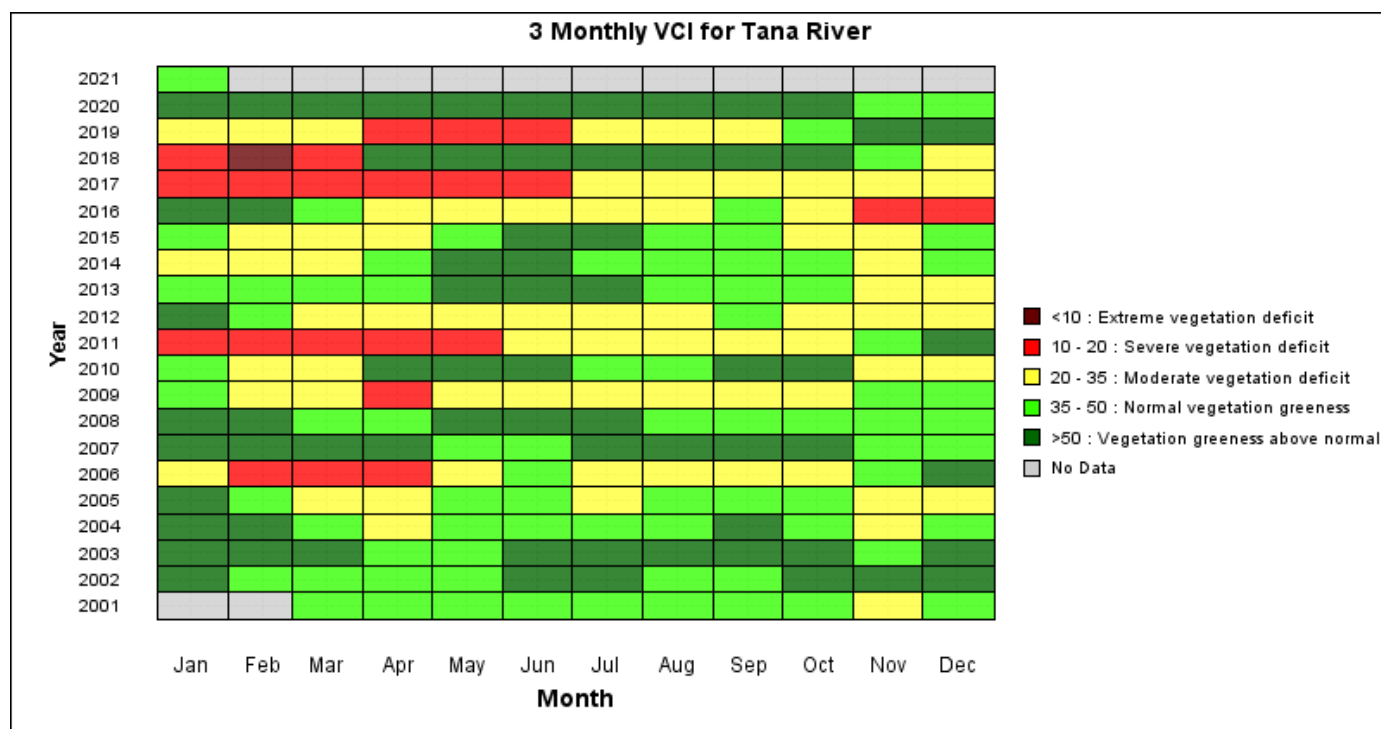


Fig.5. Source BOKU

In January 2021 the vegetation cover for Tana River County was at 39.56, which indicates normal vegetation condition but on a worsening trend. In comparison to the previous month the current vegetation cover has decreased in quantity and quality.

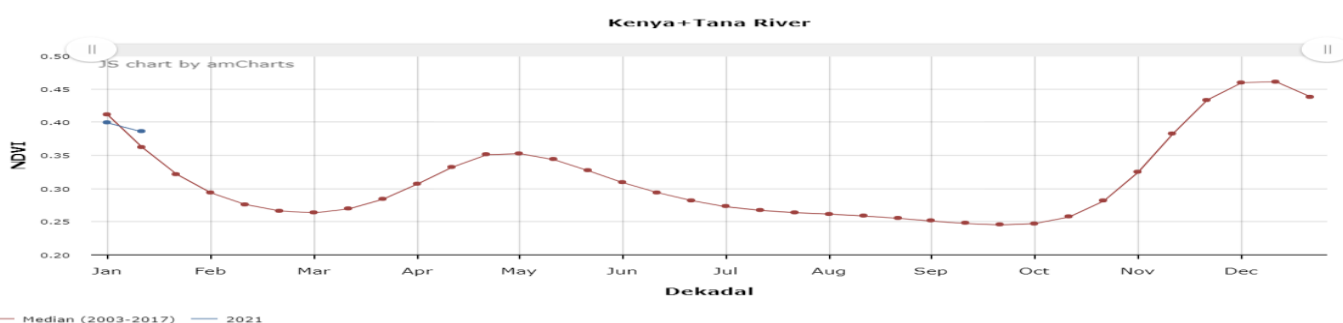


Fig.5. Source: NDVI-C6

The NDVI for Tana River County is currently showing decreasing trend in January 2021(0.39) which is above the LTA (0.36). This is attributed to decreasing rainfall and high temperatures received across the county during the month.

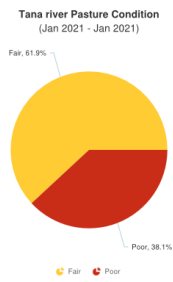


Figure 6: Tana River pasture conditions

2.1.2 Pasture

The pasture condition is fair to poor in quantity and quality in Pastoral and marginal mixed livelihood zones but the pasture conditions are fair to good in mixed livelihood zones due to light showers received in the month of December 2020.

The current pasture is expected to last for one month in Pastoral and marginal mixed and two months in the Mixed farming livelihood zones.

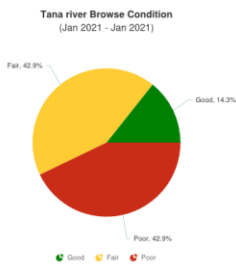


Figure 7: Tana River browse

2.1.3 Browse

The browse condition is fair to good in quantity and quality across all livelihood zones which is normal at this time of the year.

The available browse is expected to last for more than one months in Pastoral and Marginal mixed livelihood Zones and two month in mixed farming livelihood zone.

2.2 WATER RESOURCE

2.2.1 Sources

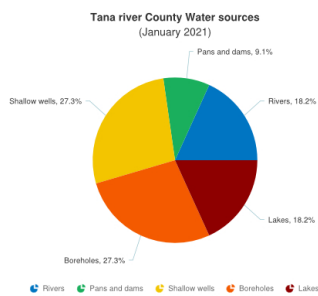


Figure 8: Tana River water sources

The main water sources for both livestock and human consumption across all livelihoods were Bore holes and shallow wells (27.3%), Lakes and Rivers (18.2%), Pans and Dams (9.1%). Most water pans and dams were at 25-65% of their full capacity. Most households are currently using Bore holes, Shallow wells, rivers, Pans and dams. Most open water sources in pastoral livelihood zones have not recharged. Water born diseases are on the increase in pastoral livelihood zones.

The current water sources are expected to last for less than one month in pastoral livelihood zones but 2 months in Marginal mixed and Mixed livelihood zones.

2.2.2 Household access and Utilization

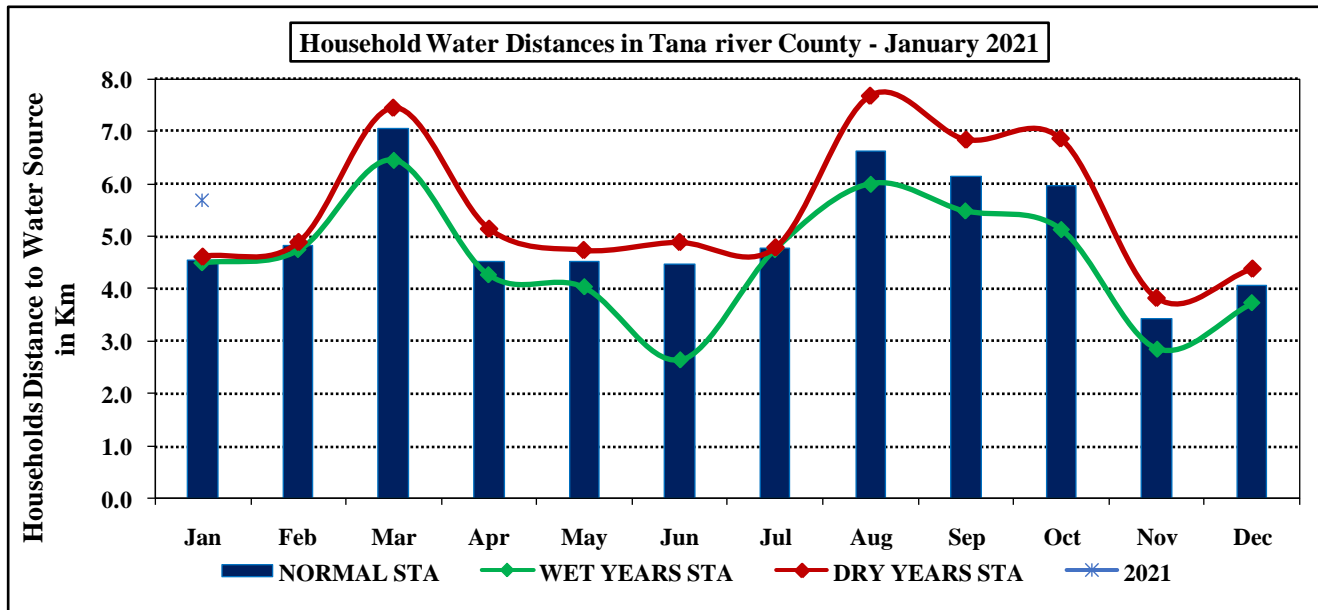


Fig.9.

- The households trekking distance increased to 5.7 km. The current distance is above the Long-term average of 4.5 km. This is attributed to the end of the rainy season and the fact that the long dry period have started and most water sources have dried up.

2.2.3 Livestock access

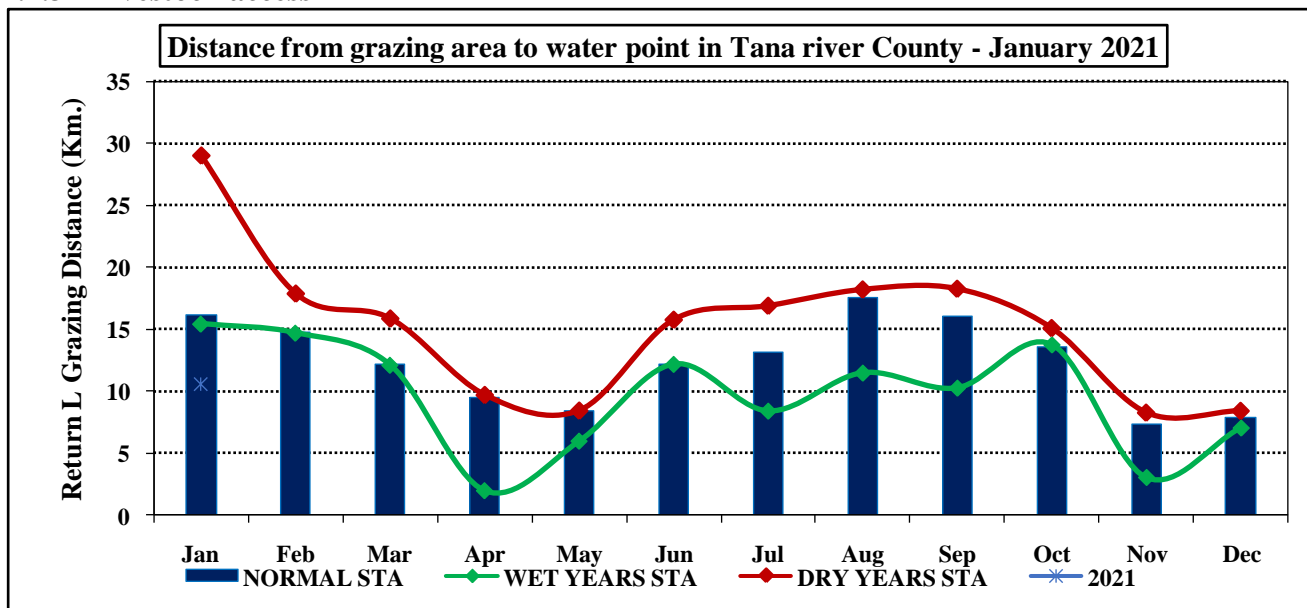


Fig.10.

- The return distance for livestock to grazing zones increased to 10.6 km during the month.
- The situation is attributed to the onset of the dry spell period during the month and most open water sources have started drying up in all livelihood zones.

3.0. PRODUCTION INDICATORS

3.1 Livestock Production

3.1.1 Livestock Body Condition

- The livestock body condition is fair in Pastoral and Marginal mixed livelihood zones but good in Mixed livelihood zones. The situation was as result of fair quality of pasture, browse and increasing unavailability of water more so within pastoral and marginal mixed livelihood zones which has led to livestock walking long distances. *(Refer to table 4 in annex)*

3.1.2 Livestock Diseases

- LSD,CCPP reported in Pastoral and Marginal Mixed livelihood zones.
- Trypanosomiasis,foot rot,helminthiasis,ORF,diarrhoea syndrome in Tana Delta,GarsenCentral,GarsenSouth,Kipini East and West.
- 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 remained stable at 4.0 litres compared to the previous month. This is attributed to fair conditions of pasture and browse across all livelihood zones. Distances to water points also increasing in the same livelihood zones.

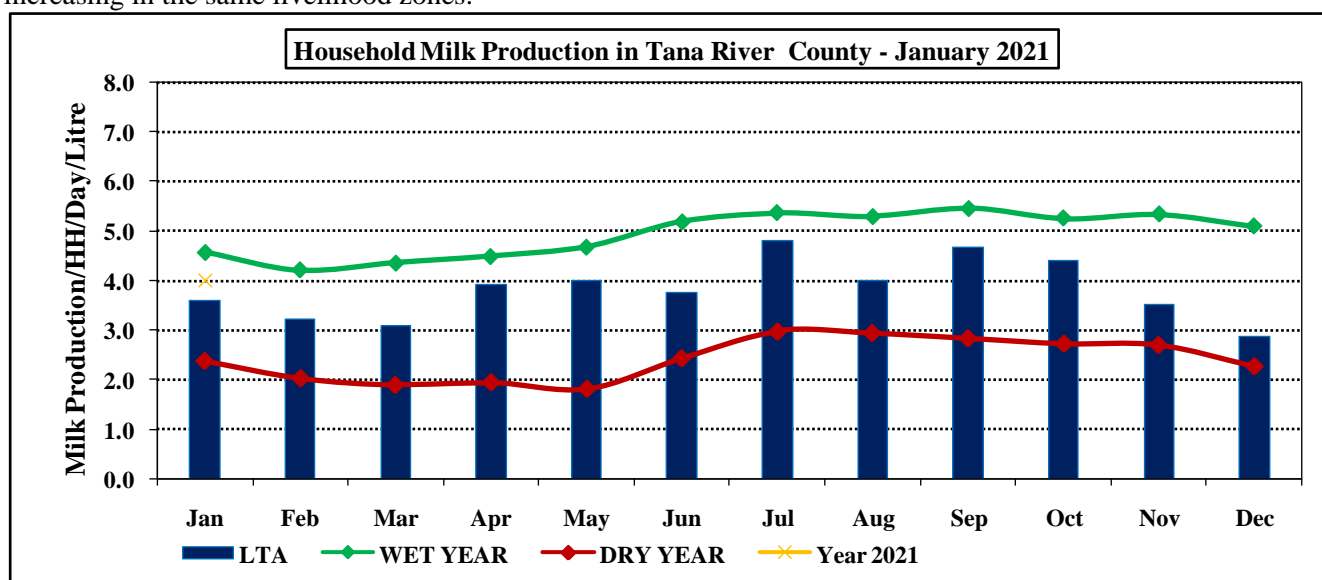


Figure 11

- In comparison to the long-term average of 3.6 litres; the current amount is above the long term average. This is attributed to fair conditions of pasture and browse in all livelihood zones.

3.2. RAIN-FED CROP PRODUCTION.

3.2.1 Stage and Condition of food Crops

- Most planted crops have grown to maturity level and are currently at tussling level. Most crops in Mixed and Marginal Mixed livelihood zones are currently experiencing moisture stress due to lack of adequate rainfall and this might have negative effects on the production. Over 1,000 hectares of crop land along the river rine were initially submerged in flooding waters. Some farmers were unable to prepare their farms on time due to lack of farm inputs.
- Desert locusts' invasion reported in all livelihood zones which is a threat to seasonal harvests if not controlled effectively. Over 530 hectares across the county were destroyed by the locusts

4. MARKET PERFORMANCE
4.1. LIVESTOCK MARKETING
4.1.1 Cattle Prices

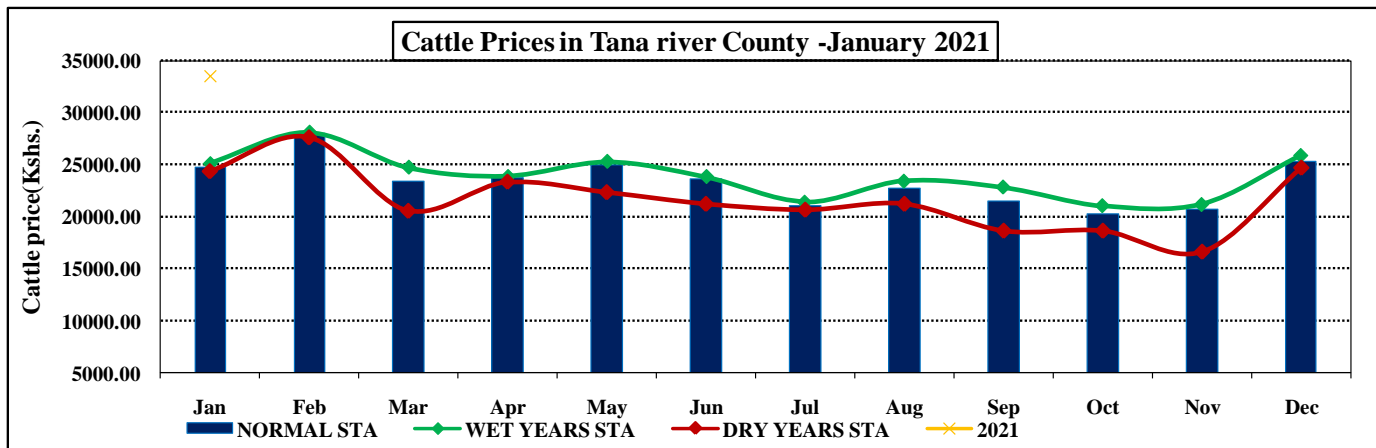


Fig.12.

- The average price for the medium sized cattle decreased by 3% to Ksh.33, 500 in the reporting month as compared to Ksh.34, 389 of the previous month. This is attributed to the improved body condition in the previous months.

4.1.2 Goat Prices

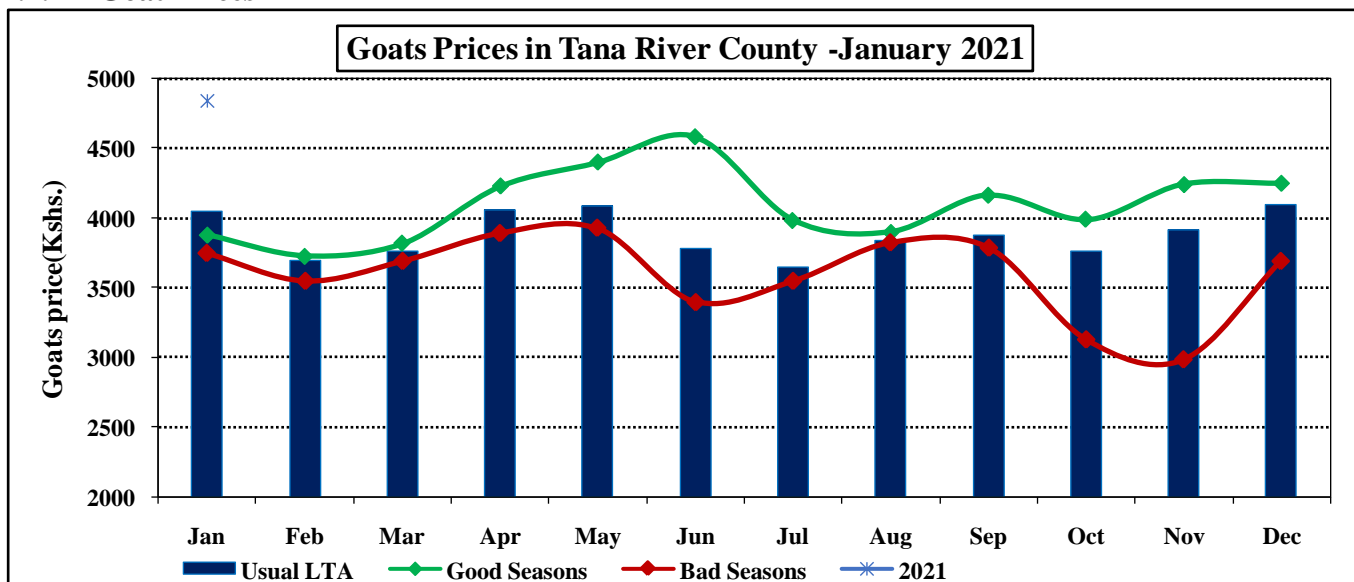


Fig.13.

- The average price of a goat increased by 9% to Ksh.4,843 as compared to previous month. This was attributed to fair body conditions which led to small stocks fetching fair prices at the market.
- The average Goat prices were lowest in Mixed Farming livelihood zones at Ksh. 4,500 and highest in Pastoral livelihood zones at Ksh.5,300.

4.2. CROP PRICES

4.2.1 Maize

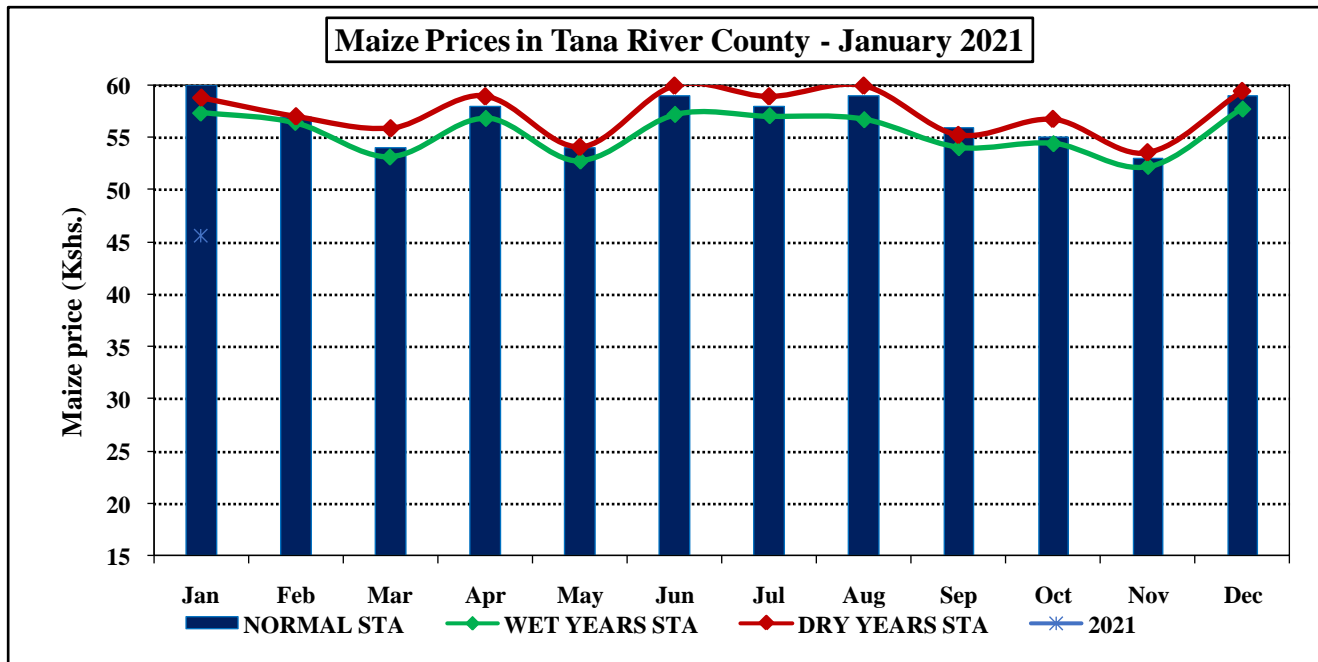


Fig.14.

- The average price for kilogram maize increased by 2% to Ksh.46 during the month compared to the previous month. This was attributed to scarcity of maize in the market due to low seasonal harvests from within and in Lamu county which pushed the prices upwards. The prices were below compared to the long-term average. The prices were higher in Pastoral livelihood zones at Ksh.50 per kilogram.

4.3. Livestock Price Ratio/Terms of Trade

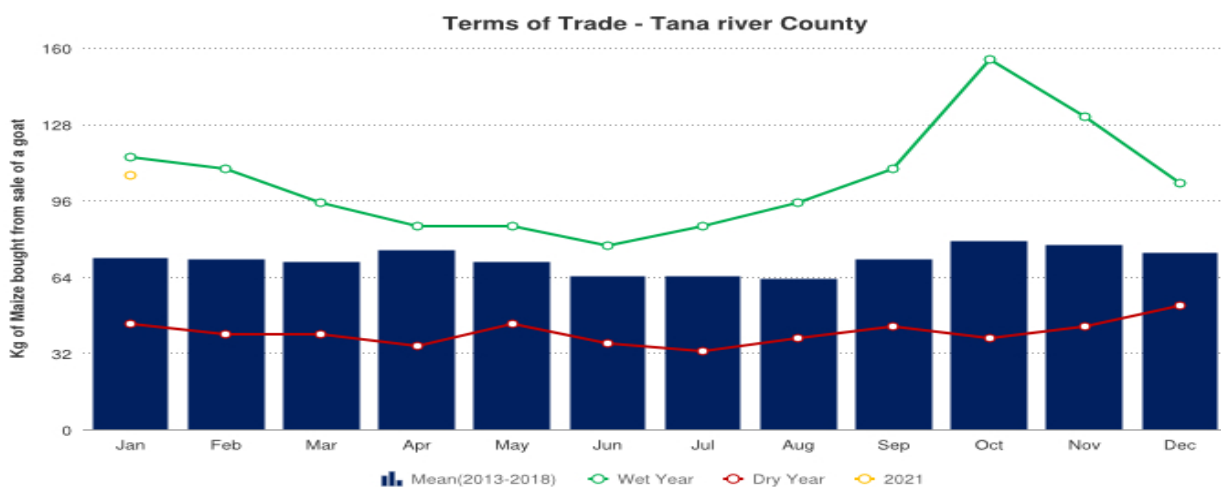


Fig.15.

- The terms of trade improved from 99.4 in December 2020 to 106.3 during the month of January 2021.
- The current term of trade is above the long-term average. This is attributed to increase prices of goats compared to maize in the market.

5.1. FOOD CONSUMPTION AND NUTRITION STATUS

5.1.1. Milk Consumption

- The average milk consumption per household decreased to 1.9 litres compared to the previous month. The amount consumed is below the long term average at this time of the year.

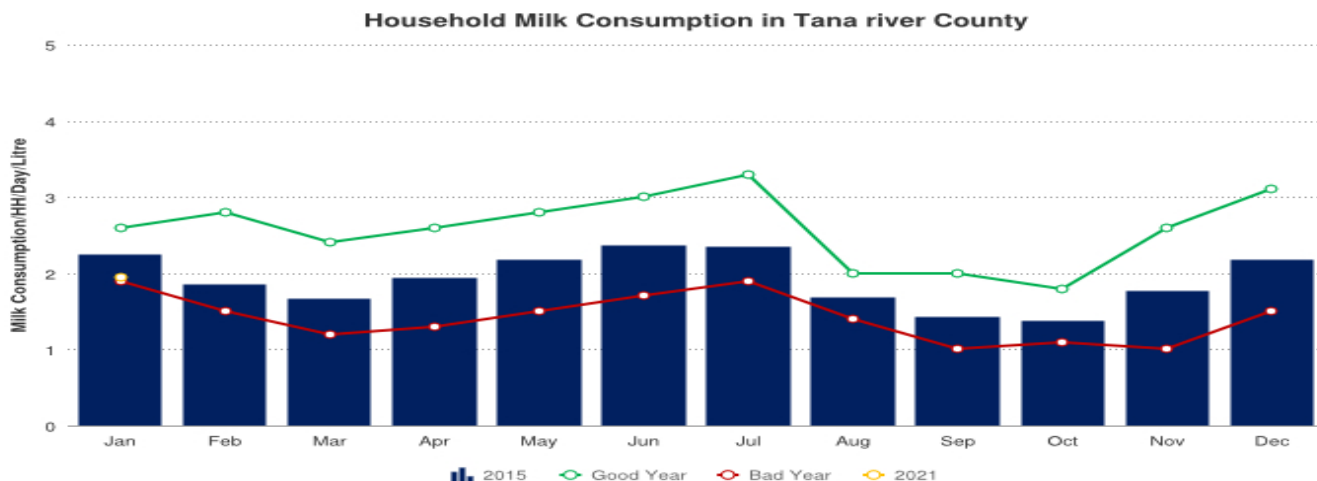


Fig. 16.

5.1.2. Food Consumption Score

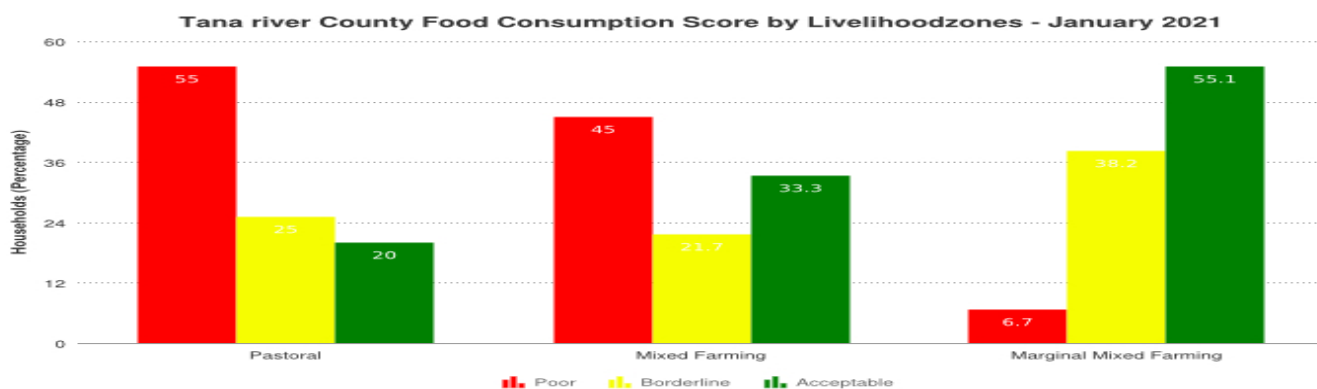


Figure 17: Tana River food consumption

There was higher proportion of households with poor food consumption gaps in Pastoral and Mixed Livelihood zones (55%) and (45%) respectively. Attributed to below average rainfall, water stress, below average milk production, poor pasture and browse and high food prices.

The proportion of households with borderline food consumption score were high in Marginal Mixed livelihood zones at 38.2% and lower in Mixed farming livelihood zones at 21.7%.

A proportion of 55.1% of households in marginal mixed livelihood zones have acceptable food consumption score while 20% in Pastoral livelihood zones have acceptable food consumption score respectively.

5.1.3 Health and Nutrition Status

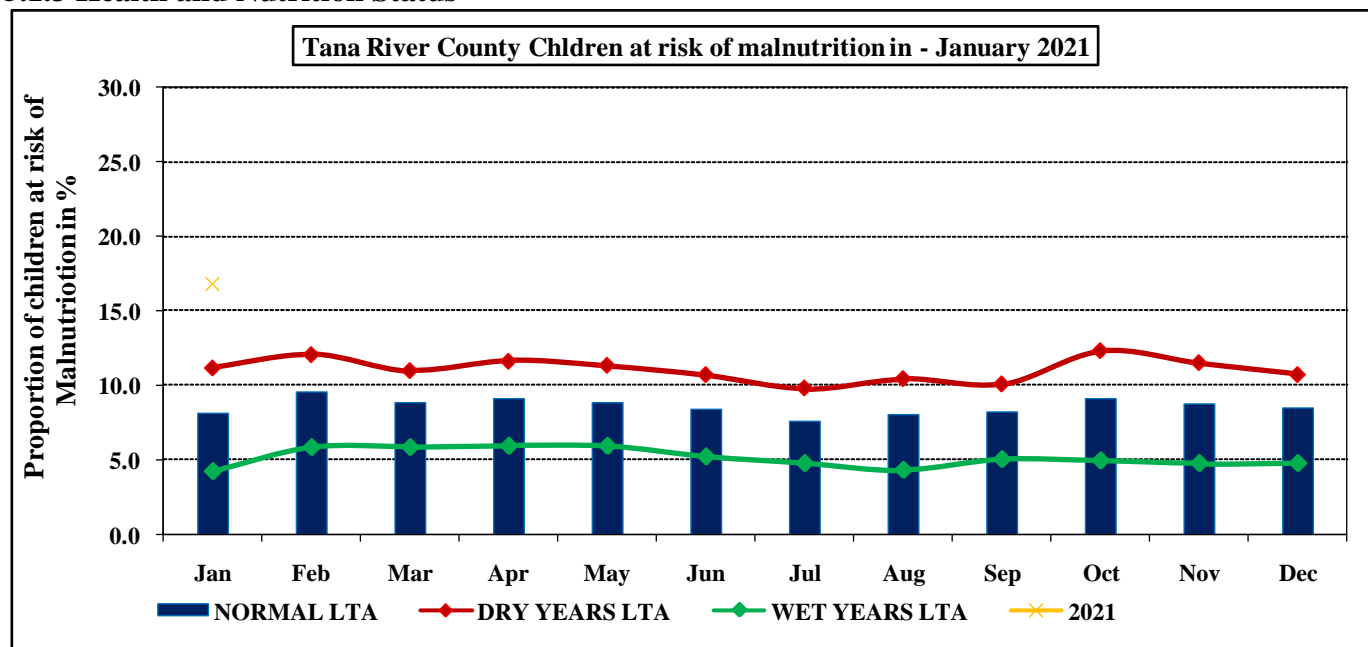


Fig.18.

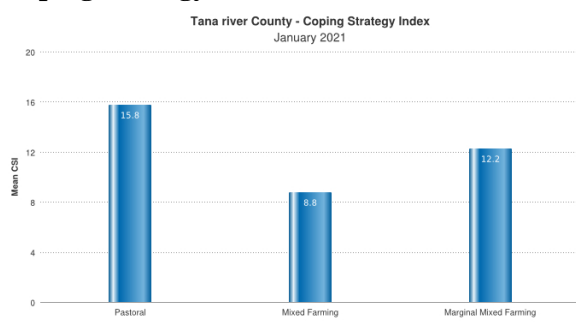
- The proportion of sampled children under five years of age at risk of malnutrition remained stable at 16.8% compared to the previous month at 16.4%. This is attributed to availability of milk at household levels more so within Pastoral and Marginal Mixed livelihood Zones.

5.2. Health

- During the reporting month the commonly reported illnesses were skin diseases, diarrhoeas URTI, Malaria, outbreak of water born diseases and skin diseases in all livelihood Zones.

5.3. COPING STRATEGIES

Coping Strategy Index



The average coping strategy index decreased to 12.30 in December 2020 compared to last month. Meaning less households are experiencing stress to access food given the prevailing conditions.

Households in Pastoral livelihood zone employed most coping strategies at 15.8 followed by Marginal mixed at 12.25. The mixed farming livelihood zones employed least coping mechanisms at 8.8.

Fig.19:Tana River Coping Strategy Index

6. CURRENT INTERVENTION MEASURES.

6.1 Non-food interventions

- Control of desert locust by National Government through ministry of Agriculture.
- Cash transfers to floods and locusts affected household(2835hh) in Tana north by Aldef.
- Distribution of dignity kits to floods affected households(325hhs) in Tana North by Aldef
- Peace initiatives in marginal mixed and mixed livelihood zones by SEARCH/TPRD
- WASH and covid 19 awareness supported by MOH/ALDEF/WC/GAA/PGI/KRCS and Partners.
- Rehabilitation of dams and shallow wells by Ministry of Water /WVK/ WFP.
- support on irrigation infrastructure for minor irrigation schemes prioritised by the county through WFP
- Support of extension services by departmental technical officers to boost food production by WFP/Aldef.

- Hygiene promotions and distribution of water treatment chemicals in Tana Delta (Katsangani, Safaricom, Tana Salt, Msurujani, Timboni, Vumilia and Orolle) by Samaritan Purse/NDMA.
- Cash transfer to 1000 vulnerable Households in Kipini East ward and Wayu ward by FAO Kenya.
- Integrated outreaches in hard to reach areas and provision of medical supplies to MOH supported by CWW/UNICEF/WVK/WC/KRCS.
- Capacity building of health workers on maternal ,infant and young children nutrition-WVK
- Family MUAC rollout in 21 community units in Tana North-World Concern.
- Distribution of 100 modern hives to 100 households in Tana Delta by Nature Kenya
- Covid cushioning cash transfer targeting 10,000 household and 15 CHVs by GoK/Aldef(1000 shillings weekly)

6.2 Food Aid

- Distribution of pulses, cereals and vegetable oil to 5,000 beneficiaries in all sub counties across Tana River by WFP/KRCS(sfsp)
- Normally, total number of schools benefiting from SMP are 178 out of which 22,768 are boys while 21,574 are girls.School meals programmes(SMP)still not available to primary schools after re-opening.

7.0 .EMERGING ISSUES

7.0.1.Insecurity/Conflict/Human Displacement

- Human wild life conflicts reported in Sala,Nanighi,Saka,Kipini,Chara and Kilelengwani.
- Over 2500 households were affected by floods in Tana Delta,Tana River and Tana North(Bakuyu,Ziwani,Mororo and Mathengeni IDP Camps),and about 2,000 hectares under crops destroyed by floods.
- During the month desert locusts invasion of 5,134 hectares of farm lands and rangelands were experienced in Tana North(Nanighi,Sala,Bilbil,Matagala,Dukanotu) and Tana Delta in Kipini ward respectively.
- Land related conflicts reported in Madogo ward in Tana North sub-county where one person was confirmed dead.

7.0.2. Migration - limited to migrations of persons.

- Livestock migrations towards the fall back grazing areas of marginal mixed and Mixed livelihood zones have started and livestock have been spotted migrating towards Tana River and Tana Delta respectively. This is normal during this time of the year. Given the fair to poor conditions of pastures and browse and water resources in Pastoral livelihood zones, livestock are forced to move towards Mar.

7.0.3. Food Security Prognosis

- Based on the projected below average short rains harvest for the major crops grown, food commodity prices in general and specifically cereal prices in the county are likely to increase above the long term average prices from the month of February 2021.
- The March to May long rains crop production around flood prone marginal agricultural areas is expected to be below average following below-average rainfall that flooded and waterlogged soils.
- Livestock prices driven by below-average forage and water resources are expected to remain below-average due to unfavourable body conditions,
- According to the Desert Locust Global Forecast by FAO, the second-generation desert locust swarms are migrating northwards facilitated by the prevailing winds into Ethiopia and South Sudan reducing the prevalence in Kenya thus causing minor damage to crop and rangeland resources.
- Forage and water resources are expected to be below normal through May due to the below-average October to December short rains and current below-normal vegetative conditions. However, the forecast of below-average, October to December short rains has resulted in only short-lived

improvements of forage and water resources which will likely remain below average from October through January.

- Based on available information from the Ministry of Health and leading local and international health experts including the WHO, the number of confirmed COVID-19 cases is likely to rise between January and March due to both the spread of the virus and increased testing thereby reinstating Covid-19 related restrictions such as ban on travel and curfews are likely to impact on household livelihoods.

7.0.4. Phase Classification

Pastoral and Marginal mixed livelihood zones are classified under stressed Phase (IPC Phase 2) while Mixed farming livelihood Zones are classified under minimal Phase (IPC Phase 1). During the month most wards in Tana North received depressed rains in the month of November-December and this triggered negative impacts on biophysical indicators hence affecting most livelihoods. over 2,000 households living along the Riverine across the county were affected by mild floods during the season which has also affected their livelihoods and left them food insecure. Desert locusts also invaded all the livelihood zones thereby reducing the period the current browse and pasture would last.

8.0 RECOMMENDATIONS

8.1.1. General Recommendations:

- a) Implementation of Covid-19 response plans by Ministry of Health and partners .
- b) Provision of pesticides to help in control of fall army worms and desert locusts.
- c) Provision of farm inputs in preparation for the long rains.
- d) Provision of clean water to areas with water stress more so Pastoral and Marginal mixed Livelihood zones.
- e) Enhance security surveillance and peace Barazas in hot spot areas of Tana Delta and Tana North.
- f) Enhance integrated outreaches in hard to reach areas across all the sub-counties more so in flood affected areas.
- g) Upscaling of food aid to the population in need in Tana North, Tana River and Tana Delta sub-counties.
- h) Provision of water harvesting facilities by Ministry of Water and Partners.
- i) Installation of hand washing kits to existing schools in preparation for re-opening of schools.
- j) Provision of storage facilities to help farmers store their long rains harvests to control destruction by pests.
- k) Mass vaccination of migrating herds to control the spread of livestock diseases.
- l) Provision of storage facilities to farmers in preparation of short rains harvests.

8.2.PROPOSED RECOMMENDATIONS

Sub County	Intervention	Ward	No. of beneficiaries	Implementers	Impacts in terms of food security	Cost	Time Frame
Crops							
All 3 Sub-Counties	Trainings on Sustainable food production Systems	All Wards	All Profiled farm Groups (40 Grps) Approx.1200 Members	Ministry of Agriculture, WFP, KCSAP,WHH	Capacity building of farmers on sustainable food production systems to improve security	20 M	2018-2023
All 3 Sub-Counties	Provision of timely extension services	All Wards	All profiled farm groups in the sub-county (112 Grps)	Ministry of Agriculture, WFP, KCSAP,PGI, Concern worldwide,WHH	Technical backstopping, enhanced adoption of relevant technology and innovation	40M	2020 Short rains
All 3 Sub-Counties	Subsidized mechanization and provision of inputs	All Wards	9000 HH	Department of Agriculture & Bura farmers' cooperative, WHH	Enhanced increase in acreage	21.7M	2020 Short rains
All 3 Sub-Counties	Provision of Agroforestry seedlings-	Mikinduni, Chewani, Madogo, Hirimani, Kipini West	6 Profiled Groups	Department of agriculture, PGI, Kenya Red Cross, WHH	Reduce soil degradation, Green House Gas Emission, Environmental Conservation, Improve availability of high Quality Germplas	7M	2020 Short rains

					m.		
Tana North, Tana River	Provision of subsidized fertilizer	Bura and Hola Scheme	Bura -6000 Bags, Hola- 4000 Bags	Department of agriculture & NIB, YARA,FAO,WHH	Improved production and food security	20 M	2020 Short rains
All 3 Sub-Counties	Provision of Hermetic Silos	Garsen North, Kipini West, Chewani, Chewele, Hirimani	11 Groups	WFP, Department of Agriculture	Reduction of Losses due to Post Harvest Handling	2M	Short Rains

Specific COVID-19 Interventions

Sub County	Intervention	Ward	No. of beneficiaries	Implementers	Impacts in terms of food security	Cost	Time Frame
All 3 Sub-Counties	Cash transfer to farmers to build resilience against drought, locust invasion and flooding	Chewele, Madogo, Sala, Hirimani, Chewani, Wayu, Kipini West	All Registered Members	Department of agriculture, ALDEF, FAO, World Vision, WHH	Improved Farmer resilience	8M	Ongoing

Livestock Immediate interventions

All	Distribution of bee hives and honey harvesting equipment	All wards	1000	County government and WFP	Increase in alternative source of income	12 M	Jan – March 2020
All	Beef fattening	All wards	500	KCSAP	Increase production	92M	Jan 2020-Jan 2022
All	Improvement of livestock markets and sale	All wards	1000	County government	Increase productivity	40M	Jan 2020-Jan 2022

	yards						
All	Support extension services	All wards	1000	WFP	Increase productivity	50M	Jan 2019-jan 2022
All	Promote poultry production	All wards	1000	WFP	Increase productivity		Jan 2019-jan 2022
All	Disease surveillance, vaccinations and treatment	All wards	10,000	County governments and partners	Increased productivity	20M	July 2020-July 2022

Medium and long term interventions

All	Livestock insurance	Madogo, Hirimani, Chewele, Garsen south, Kipini West and Garsen North, Garsen south	2500	National Gov't Takaful insurance	Helps maintain the body condition of livestock during feed scarcity	31M	From 2017 to date
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Health and nutrition On- going interventions

Sub County	Intervention	Ward	No. of beneficiaries	Implementers	Impacts in terms of food security	Cost	Time Frame
All	Vitamin A Supplementat ion	All health facilities		MOH/UNICEF/KRCS		0.5M	On-Going
All	Zinc Supplementat ion	All health facilities		MOH/UNICEF			On-Going
All	Management of Acute Malnutrition (IMAM)	All health facilities		MOH/KRCS/ UNICEF/WVK			On-Going
All	IYCN Interventions (EBF and Timely Intro of complementary Foods)	All health facilities		MOH/KRCS/ UNICEF/WVK			On-Going

All	Iron Folate Supplementat ion among Pregnant Women	All health facilities		MOH/KRCS/ UNICEF/			On-Going
All	Deworming	All facilities		MOH/WORLDWIDE CONCERN /MOE			On Going
All	Family MUAC	All sentinel sites		TRCG/UNICEF/KRC S/NDMA		0.5M	Ongoing
All	Food Fortification						

Other public health interventions

All	Screeni ng and sample collectio n of COVID -19	All facilities/borde r points		MOH/TRCG		1.5M	On Going
All	Sensitiz ation on COVID -19	COUNTY		MOH/TRCG		0.5M	Ongoi ng
All	Handwa shing and hygiene promoti on	County		MOH/TRCG		0.3M	Ongoi ng
All	Training of frontline health care workers on COVID -19 case manage ment	All frontline health care workers		MOH/TRCG			Ongoi ng

Education On-going interventions

All	RSMP	County	178(4989 5)	MOE/WFP	Access, retention, participatio n	continuou s	ALL
ALL	ESP desks	3sub-counties	3470	MOE	Ensure social	Ongoing	99100 00

	and lockers				distance		
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Water
Immediate On-going Interventions (Including Interventions in response to COVID-19 pandemic)

Sub County/ Ward	Intervention	Location	No. of beneficiaries	Implementers	Cost	Time Frame	Implementation Status (% of completion)
Tana River	1. Water trucking	Boji mango	500	CGTR	0.3M	2 months	
Tana Delta	1. Distribution of collapsible water tanks and water trucking in the following water points <ul style="list-style-type: none"> ✓ Hurara ✓ Vibao viwili ✓ Gamba 	Wachu-oda Salama	1000 800	CGTR	1.4M	2 months	N/A
	2. Rehabilitation and solarisation of boreholes and large diameter wells	Salama Ngao	2000 1000	Unicef/Agro-German	3.7M	2020	100%

Medium and Long Term On-going Interventions (Including Interventions in response to COVID-19 pandemic)

Tana North	1. Rehabilitation of Bura w/s	Bura	5000	CWWDA	100M	1YR	95%
	2. Construction of 50,000m3 Water Pan	Hirimani	2,500	TRCG	20M	4 months	50%
Tana River	1. Installation of transformer for boosting of Emaus-Kalakcha-Galole Model pipeline	Emaus	2000	TRCG	4M	2 months	80%
Tana Delta	1. Public participation and reconnaissance on the LAPSET project	Shirikisho Kipini East Kipini West	1000	CWWDA	N/A	2020-2021	N/A

(construction of a water treatment plant to supply water to Lamu, through areas in Tana Delta)							
2.Drilling of borehole and construction of water tank and pipeline extension in Oda, Darga Garge, Kilelengwani, Onido	Wachu-oda kilelengwani	1000 800	CWWDA	60 M	2020-2021	N/A	

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
	> +1.5or 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 3-monthly average	Agricultural Drought Category
	≥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.